European Economic Letters
ISSN 2323-5233
Vol 14, Issue 2 (2024)
http://eelet.org.uk

The Role of Financial Inclusion and Development in Sustainable Economic Growth - Evidence from India

Mr. Vidyadhara[a] Dr. Prakash R P[b] Dr. Ashish Manohar[c]

a. Research Scholar, Department of MBA, BIT, Bangalore, India, kavazhakhi@gmail.com
b. Assistant Professor, Department of MBA, BIT, Bangalore, India, prakashrp903@gmail.com
c. CEO, IJORD Group, Nagpur, India, ashish.manohar.22@gmail.com

Abstract

Financial inclusion and development are crucial to measure sustainable economic growth. This research shed light on the role of financial inclusion and development in fostering sustainable economic growth. The study is based on publicly available open-source data on the Indian economy from 1980 to 2021. The study uses economic growth (EG) dependent variables, financial inclusion (FI), and financial development (FD) as independent variables, and trade openness (TOP) and foreign direct investment (FDI) as control variables. Initially, this study notices that the selected multivariate time series is nonstationary at the first difference and exhibits cointegration, secondly, it uses the VECM to establish a long-run model, and finally, it concludes with the causal relationship between FI, FD, and EG. Firstly, the study reveals a one-way causal relationship between i) FI and EG, ii) EG and FD, iii) FDI and FI, iv) TOP and EG, and v) FDI and TOP, and the two-way causal association between FD and FI. However, there is no causal relationship between FD and EG. Secondly, it confirms that economic growth results from financial inclusion with significant beta and financial development with insignificant beta. Therefore, financial services are affordable to every person in society, especially the underprivileged and poor, they must be easily available to access and use, ultimately leading to economic growth.

Keywords: Financial Inclusion, Financial development, Economic Growth, Sustainable Development

1. INTRODUCTION AND BACKGROUND OF THE STUDY:

One of its core macroeconomic objectives has continued to be attaining equitable growth and sustainable development, throughout the many phases of economic development. However, financial experts still need to establish a common opinion about the role of financial inclusion, development, and growth. Therefore, a long-run causal relationship (Mir et al., 2023), between financial inclusion, development, and growth must be reinvestigated and has remained a hotly debated subject (Ayinde & Yinusa, 2016). The debate revolves around whether a nation's growth level influences its development or vice versa. Similarly, common wisdom maintains that an economy's ability to develop its output depends on investment and human capital (Madichie et al., 2014; Mengesha & Singh, 2023; Zhang et al., 2023), both of which are enabled by expanding access to financial services and products.

1.1 Indian Financial System and Opportunities

Recently, there has been a push to remove the financial obstacles that small and startup enterprises face and to loosen financing restrictions to boost industrial production. An advanced Financial system helps to promote capital formation, facilitate the exchange of goods and services, enable trading of different financial assets, diversify risk, and identify and finance good business opportunities, all of which encourage investment and lead to growth and development (Husain, 2024; Biplob & Halder, 2018; Osisanwo, 2017).

The Indian financial sector has experienced significant growth post-demonetization and pandemic, with the industry becoming increasingly tech-driven, highlighting its importance in economic expansion. As a result, there are large markets and investment potential in the expanding financial sector inside the Indian economy. Alternatively, the Indian financial industry has a long history of government intervention in deciding interest rates, high reserve requirements, and quantitative restrictions known as financial repression (Fisseha, 2023; P. O. Demetriades & Luintel, 1997).

1.2 Development of the Indian Financial System

India's financial system was very flexible in the late 1950s, with modest reserve requirements and no interest rate limitations. As a result of strict lending rate regulations enforced in the early 1960s, many commercial banks were nationalized in 1969, and 1980. The late 1980s saw progressive financial system liberalization in India, with lending rate ceilings eliminated in 1989, 1990, and 1992, followed by the 1991 Narasimham Committee report. India's foreign currency market thrived through a market-based exchange rate regime (ERR), current account convertibility (CAC), capital account liberalization (CAL), and replacing FEMA with FERA, which provides more flexibility.

In 1997, the RBI and the Indian government negotiated an agreement to eliminate automatic monetization of the Fiscal deficit, enabling market borrowing. The government introduced a microfinance program to promote financial inclusion, allowed banks to use RBI guidelines to expand their reach, and included microcredit in lending to priority sectors, without a specific model mandate.

The SHG - Bank Linkage Programme is India's most significant microfinance initiative, implemented by commercial, cooperative, and regional rural banks. The program addresses financial exclusion and allows individuals and communities to participate in the Financial system. 71% of adults in developing nations have a formal financial account, and the gender disparity has shrunk. Digital payments have increased, and the COVID-19 pandemic has impacted digital adoption. India has developed a universal identification model, but the lack of variable identity may prevent adults from accessing mainstream financial services. Therefore, the role of FI, FD, and economic development is a matter of study.

2. REVIEW OF LITERATURE

2.1 Financial System

Accessibility and availability of the formal financial system to all societal segments is a thorough definition of FI, a complex and ever-evolving system. It encompasses those from less privileged social groups and socioeconomic classes (Rastogi & Ragabiruntha, 2018). According to (Aggarwal, 2014), financial inclusion offers affordable economical services to underprivileged and low-income groups. An inclusive economic system is crucial for holistic economic growth (U. Sharma & Changkakati, 2022), aiming to uplift underdeveloped or less privileged socio-economic systems. Thus FI is used to measure a society's development and well-being. FI is considered a cornerstone (Dikshit & Pandey, 2021) of policy formulation in many developing economies like India. Alternatively, there is a close relationship between socio-financial inclusion (SFI) and economic expansion (Pandey et al., 2022).

FI will result in outstanding financial stability and a strong economy (Han & Melecky, 2013). Therefore, to achieve economic growth every government gives importance to FI. On the other hand, developing countries should prioritize inclusion to reduce poverty and raise living standards (CGAP, 2011). Alternatively, FI is one of the tactics (King & Levine, 1993) for a country's economic development and expansion. FI has many intrinsic benefits since it reduces costs by effectively allocating productive resources.

2.2 Sustainability and Financial Inclusion

Sustainable development goals provide a roadmap for a sustainable future, addressing peace, health, equality, and climate change. It must be accomplished by 2030 (Dikshit & Pandey, 2021) and is often divided into seventeen objectives as accepted in 2015. FI helps achieve the Sustainable Development Goals (SDGs) (P. K. Ozili, 2018), therefore policymakers and academics are paying more attention to it. In a developing economy, the government provides financial means in terms of subsidies, free bees, free food grains, etc., to facilitate the citizens living below the poverty line, to utilize their minimal earnings in saving and essential expenses comfortably. In addition, (Asongu & De Moor, 2015; SDG, 2024) noticed that having sufficient financial resources facilitates the purchase of insurance as a safeguard against unforeseeable events. Thereby, in the developing economy government-sponsored micro-insurance schemes as introduced in India like Pradhanmantri Suraksha Bima Yojana (PSBY), Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY), Pradhan Mantri Phasal Bhima Yojan (PMPB), etc., facilitate lower and middle-class people to get ease access of high-risk at nominal premium charges. The Pradhan Mantri Jan Dhan Yojna (PMJDY), facilitates banking services to all inhabitants. There are 52.35 crore beneficiaries banked and 2.26 lakhs crore balances in the beneficiary account in PMJDY allowing almost all inhabitants to participate in the mainstream of the economy and facilitating them to pay bills, loans, insurance, tuition, and other costs. Hence, financial inclusion encourages inclusive growth because it permits economists to join in participatory long-term investment programs; help useful circulations of industrial capacity; deal with unexpected short-term shocks; significantly expand financial management; and reduce the often unequal informal bitterness (Kumar et al., 2020; Srivastava, 2022). Ultimately, that leads to sustainable economic development in the long run ((Patni, 2023).

Primary endeavors to contest poverty primarily followed traditional channels, including governments receiving grants and loans to provoke this prevalent matter (Thien Kim et al., 2018). However, they failed to produce the desired outcomes by creating the expected impact (Morduch, 2000). As a result, a paradigm shift happened with the introduction of microfinance in the system, allowing approaches to address the shortcomings of poverty (Abrar, 2016). The Gramin Bank model coined by the prominent economist Dr. Muhammad Yunus in Bangladesh in 1976, aims to provide microcredit to the poor as a powerful tool for poverty alleviation (Chikwira et al., 2022). In this transformation shift these institutions

play a major role by extending support to small enterprises and those living in poverty, sanctioning them access to financial capital that had continued to be elusive (Chikwira et al., 2022; Gassner et al., 2019). As a result of financial inclusion, 52-year-old Bangladesh has become the 2nd largest economy in South Asia and one of the world's fastest-growing economies. It is estimated to become the 24th largest economy within 12 years. According to the World Bank reports, poverty declined from 11.8% in 2010 to 5.0% in 2022 (World Bank, 2024) with an international poverty line of $2.15 a day.

Therefore, the demand-following hypothesis has a greater impact than the supply-leading hypothesis (Nautiyal & Ismail, 2020), causing economic growth to trickle down. Higher education and health services are free or less expensive like in Germany whereas in India it is difficult to afford to the poor. On the other hand, the welfare schemes of Denmark and China ensure better economic security by providing health, employment, security, and so on. Thus, FI is required to allow people to have low lending rate credits that result in many ways like affording quality education, starting small businesses, and getting better health services through which a developing economy can achieve SDGs addressing education, innovation, industry, infrastructure, and health.

Inclusive financial institutions can alleviate poverty and hunger by enabling impoverished individuals to reach their full potential, empower children to start businesses and enhance food security. In an economy, financial inclusion decreases poverty (Abor et al., 2018) and increases household consumption. As a result, any country can easily achieve sustainable development goals addressing poverty and hunger. Additionally, the accessibility and utilization of financial services by women, affect the efficacy of financial inclusion (Saha & Qin, 2023), on both risky and sensible poverty in developing nations, and have statistically and positively significant effects on economic growth (D.-W. Kim et al., 2018; J.-H. Kim, 2016; D. Sharma, 2016; Williams et al., 2017). Even though the government provides free bees such as cash deposits, free transportation, free education, etc., the poor people will return to the economy in the mode of indirect tax during their spending on an essential commodity despite leading to the economic crisis.

2.3 FI in Past, Present, and Future

As of 31.03.2014, India is having bank branch network of 1,15,082 and an ATM network of 1,60,055, of these, 38.2% of branches (43,962) and 14.58% of ATMs (23,334) are in rural areas. The implementation of PMJDY a massive FI campaign facilitated bank access to people who belong to the bottom of the economic pyramid. This initiative allows the government to transform subsidies and scholarships directly to beneficiary accounts and people to get banking services like lending and depositing. Further, MI and MF secure the poor by risk coverage of death, agricultural damages, and health.

The future of Financial Inclusion (FI) will involve increased digitalization, personalization of services, a single platform for formal financial services, and a shift from bank account numbers to mobile numbers (P. K. Ozili, 2023).

2.4 Financial Development (FD) and Economic Growth (EG)

The development of the financial system of the country has a significant positive effect (Baltagi et al., 2008; P. Demetriades & Law, 2006; Giavazzi & Pagano, 1990; McKinnon, 1973), on economic growth by mobilizing savings and allocating capital efficiently for profitable investments; innovation and technological advancements that raise productivity, create job opportunities, and lower poverty. However, the influence relies on the level of growth (Rioja & Valev, 2004), and increases the provisions of financial services known as financial deepening in an economy. In contrast, few studies notice that financial development negatively impacts growth (Mhadhbi, 2014). Therefore, this study shed light on the role of financial inclusion and development in fostering sustainable economic growth in India.

The two prominent hypotheses of the growth finance and finance growth hypothesis have been used to explain the theoretical literature on the finance growth nexus. The idea is that finance plays a crucial role in influencing the expansion of the real sector (Schumpeter, 1911), in any given economy. Banks effectively raise and channel money, by providing private investors credit to finance the purchase of physical capital, adopting new production technologies, and increasing innovations that boost GDP growth and productivity (Ang & McKibbin, 2007). Many scholars (see(Cole, 1974; Fry, 1994; Giavazzi & Pagano, 1990; McKinnon, 1973); also have similar opinions about the finance growth hypothesis developed by Schumpeter. The significance of investment and financial liberalization (McKinnon, 1973) is that financial repression hinders economic growth (Aliyu Mamman & Hashim, 2013). GDP growth magnifies the demand for financial services (Robinson, 1979), which fosters innovation and financial intermediation within the industry, ultimately contributing to sophisticated development (T. M. Ibrahim & Shuaibu, 2013). However, the hypothesis of financial expansion is linear based on the assessments of researchers from the World Bank and IMF. They contend that there ought to be a limit to financial development, beyond which more advancement in the sector will be detrimental to economic

expansion. On the other hand, the relationship between finance growth and the threshold point resembles an inverted U (Law & Singh, 2014), indicating they are non-linear and saying some level of financial development is good.

However, cross-country studies on finance to growth nexus show some proof of a statistically significant association between finance and economic growth. (Baltagi et al., 2008), applies the generalized method of moments (GMM) to establish the relationship between finance growth and finance openness, and mixed results in different countries (Liu & Hsu, 2006) have been revealed. On the other hand, financial development encouraged by liberalization removes financial repression laws, and financial depth (Ang & McKibbin, 2007), is favorably correlated with FD. Meanwhile, financial development undermines economic growth to a certain level (Law & Singh, 2014), and cautions against financial liberalization and development (Adusei, 2013). This evidence shows that an FD is highly essential in determining economic growth.

Sometimes, FD and EG have a positive relationship (Ndako, 2010), a long-run relationship (Acharya et al., 2009; T. M. Ibrahim & Shuaibu, 2013), and a negative long-run relationship (Madichie et al., 2014). Similarly, a positive association between credit to the private industry and liquid liability (Aliyu Mamman & Hashim, 2013), and liquid liabilities and trade openness (Pelesai et al., 2013), impact growth. However, (Pinshi & Kabeya, 2020) emphasizes the importance of knowledge, education, research, macroeconomic stabilization, infrastructure reconstruction, structural reforms, a favorable economic environment for private and regulatory sectors, and good governance for improved financial development.

2.4 FI, FDI, and TOP

Foreign direct investment opens the doors for better job opportunities, and financial compensation leads to better financial inclusion because it raises, economic activity (Pradhan et al., 2016), like employment and competency in the domestic market. On the other hand, TOP and FDI significantly influence the growth of business (Bayar et al., 2018). Further, financial inclusion has bidirectional causality with foreign direct investment (Odugbesan et al., 2022). Therefore trade openness and foreign direct investment are control variables in this study.

2.5 Significance of Study

India is one of the leading economies in the world and has adopted digital finance rapidly after the COVID-19 crisis. Moreover, existing scholars have mixed opinions about the cause-and-effect relationship between FI, FD, and EG. Hence a detailed study is essential to draw a common conclusion about FI, FD, and EG.

3. OBJECTIVES AND HYPOTHESIS

3.1 Theoretical Background

Many scholars argue that FI, FD, and EG have a close relationship (D.-W. Kim et al., 2018; Nautiyal & Ismail, 2020; Ofoeda et al., 2024; Singh & Ghosh, 2021). The systems theory (P. Ozili, 2020) states that the numerous subsystems (economic, social, and financial systems) that are now in place enable financial inclusion to occur. Therefore, financial developments positively influence (Acharya et al., 2009; King & Levine, 1993; Madichie et al., 2014; Pelesai et al., 2013; Pinshi & Kabeya, 2020), economic growth. Thus monetary policy, price stability, economic growth, financial inclusion, and development (Takyi et al., 2023) are essential. The FS is one of the subsystems mentioned in the system theory of financial inclusion.

3.2 Statement of the problem

The connection between financial inclusion and economic growth (Bashiru et al., 2023; P. K. Ozili et al., 2022), is having a high scope of study and they are positively associated (Akpan et al., 2016; Chinaemerem & Chigbu, 2012; Nkoro & Uko, 2013; Waqabaca, 2004). Research has shown a negative relationship between two variables (Gründler & Weitzel, 2013; Maduka & Onwuka, 2013; Tafirenyika, 2012), with (Pan & Wang, 2013), arguing it's due to extraneous factors, while (Miyan & Biplob, 2019) have found a causal relationship. Nevertheless, no study came to a common conclusion. Thus, the association between FD, FI, and the economic growth of the Indian economy is discussed in this article.

3.3. Study Objectives

1. To ascertain the causal relationship between economic growth (EG) and financial inclusion (FI).
2. To ascertain the causal link between economic growth (EG) and financial development (FD).
3. To ascertain whether financial development (FD) and financial inclusion (FI) are causally related.

European Economic Letters
ISSN 2323-5233
Vol 14, Issue 2 (2024)
http://eelet.org.uk

3.4 Hypothesis

	H_0	H_1
1	FI and EG do not have a causal relationship.	FI and EG have a causal relationship.
2	FD and EG do not have a causal relationship.	FD and EG have a causal relationship.
3	FI and FD do not have a causal relationship.	FI and FD have a causal relationship.

4. RESEARCH METHODS

4.1 Data and Measurement

The data used in the study were obtained from the RBI, World Bank, and the IMF database during 1980-2021. The study considers FII and Findex as independent variables, economic growth as dependent variables, and trade openness, and foreign direct investment percentages as control variables presented in Table 1. The financial inclusion index is determined using three dimensions: penetration, usage, and availability (Sarma, 2008), with the dimension index calculated using a specific formula as below;

$dit = \frac{Ait - mit}{Mit - mit}$ where

dit = particular dimension index at period t

A_{it} = present value of dimension i

m_{it} = minimum value of dimension i

Mi = maximum value of dimension i

$0 \leq d_{it} \leq 1$

The number of people with bank accounts in domestic and foreign banks is used as the substitute for the penetration dimension. The number of bank branches in a period t is used as the substitute for the availability dimension. Both data are collected from the RBI database. The proxy for the utilization dimension is the quantity of credit and deposits as a percentage of GDP obtained from the IMF database.

When dimension indices are constructed, the financial inclusion index will be created as follows:

$FII = 1 - [(\sqrt{(1-d_1)^2 - (1-d_2)^2 - (1-d_3)^2}) \div \sqrt{n}]$

where

The Euclidean distance of Di is the numerator of the second component, ideal point i. To obtain the inverse normalized distance, subtract 1 from this distance. The IFI levels lie between 0 and 1. and are correlated with better financial inclusion. Throughout this process, the inverse distance is taken into consideration.

Table 1. Data Details

Variable	Description	Measurement	Source
FII	The range of the Financial Inclusion Index is 0 to 1. An FII score near one indicates higher financial inclusion and vice versa. The ratios are computed using the financial services' availability, penetration, and usage. The ratio lies between 0 to 1.	Proportion	RBI & IMF
FD index (Findex)	Empirical studies often use financial depth measures like private credit to GDP or stock market capitalization to GDP, but these do not account for the multidimensional nature of financial development. Therefore the study employs the financial development index constructed by the IMF as an alternative to financial development. It sum-ups how developed financial institutions and financial markets regarding their size and liquidity (depth), the ability of people and businesses to access financial services (access), and the ability of institutions to offer financial services at minimum cost and with sustainable revenues and the level of activity of capital markets (efficiency). Indicators are then combined into the six sub-indices at the bottom of the pyramid. Using principal component analysis these six indices sum up into financial institutions and financial market indices. Finally, sub-indices are summed up into higher-level indices using the same method to reach the financial development index (Sahay et al., 2015).	Proportion	IMF
EG	Real Gross Domestic Product is a proxy for Economic Development which GDP is adjusted for inflation. Because, Real GDP considers income equality, environmental impact, and well-being.	Value	IMF

TOP	Total trade (import + export) divided by GDP in US dollars at the current exchange rate multiplied by 100 is the indicator of trade openness.	Percent	WB
FDI	The GDP proportion of foreign direct investment is used as a stand-in for FDI.	Ratio	WB

4.2 Methodology

4.2.1 Stationarity Test

Unit root test confirms the stationarity of the time series. The stationarity assumption shall be tested to avoid spurious regression. The generalized least squares (GLS) (Ng & Perron, 2001) is a more advanced version (Breitung & Franses, 1998) of the modified Phillips and Perron test due to its long-run variance, the spectral density at zero frequency, adjusted heteroskedasticity, autocorrelation, and standard errors. MZ_a, MZ_b, MSB, and MPT, are four different kinds of tests suggested by Ng Perron. The most recommended method is MPT, which uses kernel-based estimators to consider d^1_t with drift and trend (Kamalu et al., 2019; Malik & Atiq-ur-Rehman, 2015). Zivot and Andrew's modified Perron's test converts an exogenously determined structural break date into an unconditional unit root test (Andrews, 1993; Waheed et al., 2007). The most significant t-test of an intercept, where the ADF unit root test is at least (Nilsson, 2009), determines the break date.

4.2.2 Test of Cointegration

The cointegration test (Gregory & Hansen, 1996), is a crucial method in econometric analysis that examines the long-run association between two or more variables in an equation. Gregory Hansen deemed this test superior to the Engle-Granger test for cointegration due to its ability to assess connections in the presence of potential series breaks. This method uses the residual-based strategy to endogenously locate an unknown single break (S. Ibrahim, 2009; Sadeghi & Ramakrishna, 2014). Further, the Bond test is considered to conclude about the cointegration amount of the selected variable.

4.2.3 Model Specification

The study model is constructed using the Vector Error Correction Model (VECM) for a time series from 1980-2021, which includes at least two cointegrations.

$$EG_t = \alpha + \boldsymbol{\beta}_1 EG_{t-1} + \boldsymbol{\beta}_2 FII_{t-1} + \boldsymbol{\beta}_3 FINDEX_{t-1} + \boldsymbol{\beta}_4 TOP_{t-1} + \boldsymbol{\beta}_5 1FDI_{t-1} + ECT_1 + ECT_2 + e_t \quad (1)$$

Where; α indicates constant term; β indicates regression coefficients; ECT_1 and ECT_2 are error correction terms as adjustment coefficient; e means error term, and t is time.

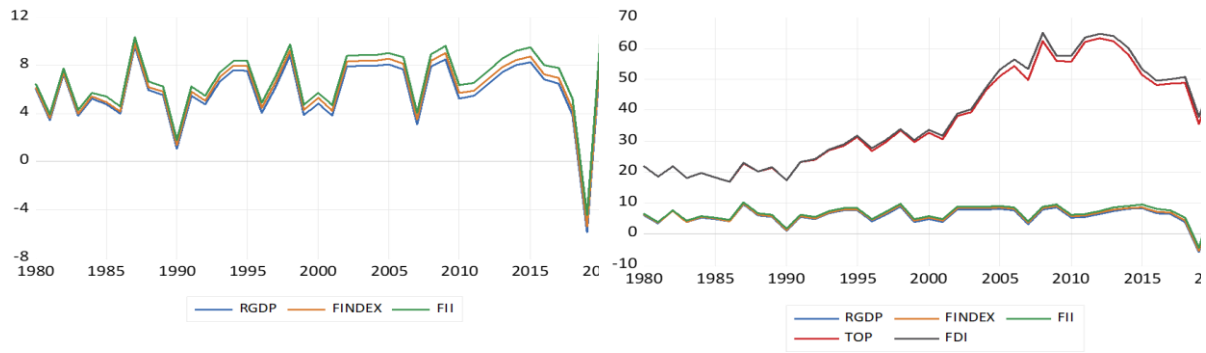
4.2.4 Test of Causal Relationship

The non-Granger's causality test (Toda & Yamamoto, 1995), uses an augmented Vector Auto Regression with $k+d_{max}$ where k indicates the optimal time lag and d represents the highest integrated order of the variable in the VAR model. Traditional causality testing often leads to incorrect regression results (Engle & Granger, 1987), particularly when it comes to integrated variables that function with a time lag; which may result in an incorrect conclusion. Furthermore, (Johansen & Juselius, 1990), suggested that alternative causation based on the VAR model was a laborious process (Dritsaki, 2017). Toda Yamamoto's non-Granger causality test/Wald test establishes a rational conclusion about the causal relationship between FD, FII, EG, FDI, and TOP.

5. MAJOR FINDINGS AND DISCUSSION

5.1 Descriptive Analysis

Figure 1 GDP Findex and FII



Source - World Bank, IMF and RBI

European Economic Letters
ISSN 2323-5233
Vol 14, Issue 2 (2024)
http://eelet.org.uk

Table 2 Descriptive Statistic

	EG	FINDEX	FII	TOP	FDI
Mean	5.89	0.37	0.54	30.51	1.00
Median	6.28	0.43	0.45	26.45	0.81
Max	9.62	0.54	1.00	55.79	3.62
Min	-5.83	0.12	0.29	12.22	0.00
St Dev	2.66	0.12	0.19	14.55	0.90
Skewness	-2.09	-0.86	0.97	0.27	0.71
Kurtosis	10.06	2.48	2.99	1.60	2.95

Source: Secondary Data Processed by author, 2024

The average Financial inclusion ratio has been about 0.54, while the Findex score has been about 0.37 since 1980 in India. The average real gross domestic product records an average of 5.89, the TOP of the same has been about 30.51. The foreign direct investment proportion to the Indian GDP ratio has been about 1.

The standard deviations of all the selected variables are also quite negotiable in this result. EG and FD data are negatively skewed and FI, TOP, and FDI are positively skewed indicating the mean and median relationship. 0.29 is the lowest FI score in India and the higher is about 1.

Table 3 - Correlation Matrix

	EG	FINDEX	FII	TOP	FDI
EG	1				
FINDEX	0.16*	1			
FII	-0.03	0.71*	1		
TOP	0.15*	0.79*	0.72*	1	
FDI	-0.03	0.75*	0.65*	0.87*	1

Source: Secondary Data Processed by author, 2024

Table 3 shows a minimal positive correlation between economic growth, financial development, and trade openness, and a low degree of negative correlation between economic growth, FDI, and financial inclusion. Secondly, financial development records a high degree of positive correlation with inclusion, trade, and investment. Finally, economic inclusion shows a high degree of positive correlation with trade and FDI is highly correlated with both inclusion and trade. FDI opens many kinds of competencies and creates jobs resulting in the accessibility of different types of financial services in the long run.

Table 4 - Lag Selection Criteria

Lag →	1	2	3
AIC	-1.27e+01	-1.24e+01	-1.30e+01*
HQ	-1.23e+01	-1.15e+01	-1.18e+01*
SC	-1.15e+01*	-1.007e+01	-9.62e+00
FPE	2.82e-06 *	4.36e-06	2.82e-06
Lag Selection			
AIC - 3	HQ - 1	SC - 1	FPE - 3

Source: Secondary Data Processed by author, 2024

The AIC and HQ coefficients are lowest at three lag selections and are significant, whereas SC and FPE coefficients are lowest at one lag selection and are significant. Therefore we prepare SC lag section criteria and select 1 lag in our model.

European Economic Letters
ISSN 2323-5233
Vol 14, Issue 2 (2024)
http://eelet.org.uk

Table 5- Test of stationarity

Variable	MPT		
	Level	First Difference	Second Difference
EG	1.22	1.38	3.94**
FINDEX	63.76**	1.27	2.81*
FII	22.21***	3.49***	0.81
TOP	30.62**	1.93*	2.19*
FDI	5.74***	1.27	2.29*
Critical Value	1% - 1.78	5% - 3.17	10% - 4.45

Source: Secondary Data Processed by author, 2024

Note -*The characters *, **, and *** represent p-values that are statistically significant at 1%, 5%, and 10% respectively.*

Table 6 - Unit root test with structural breaks

Unit Roots				
	Level	Break	First Difference	Break
EG	-7.23***	2018	-6.54**	2018
FINDEX	--3.75***	2010	-3.69**	2010
FII	-0.77***	1992	--0.69***	1993
TOP	-3.63***	2014	-3.61***	2014
FDI	-3.94***	2005	-3.64**	2005
Standard Table Values		1% - -5.34	5% - -4.8	10% - -4.58

Source: Secondary Data Processed by author, 2024

Note - *The characters *, **, and *** represent p-values that are significant at 0.1%, 1%, and 5% respectively.*

EG, Findex, and TOP are non-stationary at the lag one, while FII and FDI are stationary [table 5]. It signals the existence of cointegration. Table 6 demonstrates the structural break of selected time series data.

Table 7 Gregory Hansen's - Cointegration Test

	test | 10% | 5% | 1%
r <= 4 |	5.61 7.52 9.24 12.97
r <= 3 |	16.92 17.85 19.96 24.60
r <= 2 |	35.32 32.00 34.91 41.07
r <= 1|	62.12 49.65 53.12 60.16
r = 0 |	104.12 71.86 76.07 84.45

Source: Secondary Data Processed by author, 2024

Table 8 Bond Test to Confirm Cointegration

Test Statistic	Value	Signif	I(0)	I(1)
F -statistic	8.68	10%	2.2	3.09
k	4	5% - 2.56, 3.49	2.5% - 2.88, 3,87	1% - 3.29, 4.37

Source: Secondary Data Processed by author, 2024

The result as preset in Table 7 shows that the tested value is less than the critical value at the third-row value. This confirms that the series has at least two cointegration equations and table 8 confirms cointegration. When cointegration exists we have to go for a vector error correction model. The F-statistic value i.e. 8.67 as recorded in Table 8 is higher than the I(1) value of 3.09 indicating long-run cointegration among variables. There are at least two cointegration equations in this time series. The cointegration test is useful in understanding the long-run relationship (see also, (Chinoda & Kapingura, 2023; Durusu-Ciftci et al., 2017; Ishfaq et al., 2024)(Chinoda & Kapingura, 2023; Durusu-Ciftci et al., 2017; Ishfaq et al., 2024; Nautiyal & Ismail, 2020; Ullah et al., 2024), between study variables.

Table 9 Long-run model

DV - EG			
Variable	Coefficient	Std. Error	Sig.
Intercept	8.96	1.85	***
ECT_1	-1.18	0.24	***
ECT_2	-7.00	2.43	**
EG_{t-1}	0.23	0.19	*
FII_{t-1}	-39.71	18.81	
$FINDEX_{t-1}$	-0.44	28.57	
TOP_{t-1}	-0.26	0.15	
FDI_{t-1}	-0.08	1.24	
$R^2 = 0.9877$; Adj. $R^2 = 0.9835$; Prob F-Stat: 232.8, p-value = < 2.2e-16			
Diagnostic test	p-value	Remark	
Autocorrelation	0.52	No Autocorrelation	
Heteroscedasticity	1	Series is Homoscedastic	
Normality	< 2.2e-16	Residuals are not normally distributed	

Source: Secondary Data Processed by author, 2024

From Table 9 Intercept, ECT1, ECT 2, and FII are significant while Findex, FDI, and TOP are insignificant. All the error diagnosis tests are statistically significant and satisfy all criteria.

Table 10 - Block Exogeneity Wald Tests / Non-Granger's Causality

Non - Granger's Test of Causality					
D.Vs.	I.Vs.				
	EG	FINDEX	FII	TOP	FDI
EG	-	5.51 (0.138)	44.78 (0.000)*	12.47 (0.0059)*	0.55 (0.907)
FINDEX	9.61 (0.0221)*	-	12.38 (0.0062)*	2.12 (0.5474)	5.45 (0.1411)
FII	5.10 (0.164)	9.97 (0.0188)*	-	4.60 (0.2028)	12.29 (0.0064)*
TOP	3.74 (0.2905)	2.25 (0.520)	4.74 (0.1915)	-	13.88 (0.0031)*
FDI	6.28 (0.0987)	1.32 (0.7230)	2.79 (0.4248)	7.27 (0.0637)	-

Source: Secondary Data Processed by author, 2024

Note - *The characters *, **, and *** represent probability values statistically significant at 1%, 5%, and 10% respectively.*

The non-Granger causality test (Toda & Yamamoto, 1995), or the Wald test applies to confirm the causal relationship between variables. The Wald test typically assumes non-Granger causality as the alternative hypothesis, while the null hypothesis is 'no non-Granger's causality'.

Firstly, Table 10 shows that financial inclusion (FII) and trade openness (TOP) have non-Granger's casualty with economic growth. Hence, the first hypothesis i.e., *FI and EG have a causal relationship* is accepted and this confirms that financial inclusion leads to economic growth in the long- run.

Secondly, financial development (Findex) and foreign direct investment (FDI) do not have non-Granger's casualty with economic growth. Therefore, the second hypothesis i.e., FD *and EG have a causal relationship* is rejected and this does not confirm that financial development causes economic growth in the long run.

Finally, *FII* and *Findex* have two-way causality since FII to Findex and Findex to FII are significant at a 5% significant level. Therefore, the third hypothesis i.e., *FI and FD have a causal relationship* is accepted and confirms that financial development is an outcome of financial inclusion. Additionally, the statistically significant causal association between Findex and FII indicates financial development causes new dimensions of financial inclusion in the long term.

Additionally, the results of Table 10 include a causal association between trade openness (TOP) and economic growth, while FDI has a causal relationship with financial inclusion (FII) and trade openness (TOP).

During the precolonial era family businesses and occupations were carried out from generation to generation allowing people to achieve skills and job security. As discussed earlier in this study jobs transferring from generation to

generation set comfortable financial requirements. The education-oriented employment introduced during the colonial period made quality education more expensive due to huge demand. On the other hand, ordinary people's struggle to get jobs results in poor economic status known to be poverty. However, education reforms, open up of higher education institutions and merit-based scholarship initiatives taken by GoI after independence helped the poor to a small extent.

After, The National Education Policy 1986 amendment in 1992 by PM PV Narasimha Rao significant socio-economic changes took place in India (P. S. Aithal & Shubhrajyotsna Aithal, 2019). Primary education in countries like Japan, Finland, and Palestine differs in curriculum design, assessment planning, mandatory education, and teacher selection from other countries (Sabbah et al., 2020). The various scholarship programs and low-cost education loans allow the bottom of the economic pyramid to get quality education resulting in better jobs and financial stability over a long period.

The welfare programs introduced in China and Denmark help social and economic security. Similarly, economic reforms made by RBI and GoI on investment help to create jobs that allow individuals to increase their financial status. However, domestic business has become more competent after GoI opened the doors to foreign investors. Further, the inclusive economic model of MNCs has given more importance to individual skills along with their education qualifications with attractive salaries. This results in improving the socioeconomic status of individuals and savings. The causal relationship between FDI and FI as shown in Table 10 indicates despite the encouragement of FDI to dominate the domestic market (Amighini et al., 2017; Seth, 2011), it causes FI by creating employment opportunities and innovation. Therefore the study recommends the policy maker and the government when opening the door to FDI, must balance quality education and skill enhancement and investors utilize the competitive advantage in the economy of job creation, business practices, innovation, and satisfactory payment structure as part of an inclusive economy as well as SDG addressing economic growth, industry, and innovation.

CONCLUSION

People and businesses are considered financially included when they have access to fairly priced, practically useful financial goods and services that meet their needs (transactions, payments, savings, credit, and insurance) and are offered ethically and sustainably. Financial inclusion and development show a bidirectional relationship is quite different from (Kamalu et al., 2019). Thus, high financial inclusion plays a crucial role in sustainable Financial development, as it boosts intermediation and the inclusive development of the formal financial sector. Moreover, the financially developed economy has superior access to economic goods and services. As a result, having access to such goods and services boosts output and is important for swift economic growth.

Financial inclusion at the bottom of the economic pyramid is linked to economic growth, indicating its importance and development, facilitated by increased access to official financial services. As a result, credit to the private industry needs to be encouraged to achieve sustainable economic expansion in India's emerging economy. Similarly, every segment of society, especially the poor and underprivileged, and marginal farmers, must have access to inexpensive formal financial goods and services. The study uses secondary data and the author's best knowledge, potentially ensuring robust results even if future research uses primary data.

However, according to MOE in India over 11000 jobs are vacant in central universities, IITs, and IIMs put together. As of 2021, India produces 1.5 million engineering graduates out of which only 3% will get high-tech jobs, and over 3 lakh management graduates are produced every year out of only 35000 are getting placed. On the other hand, many positions are still vacant in MNC India because the higher education institutions fail to provide skill-based quality education on the contemporary industry requirements. Even though FDI helps in many ways like job creation, innovation, and developing competitive advantages, etc., providing employment is still a questionable debate helps in FI. Future studies and policy formation may focus on why the better job creation is very important to access better financial services so that every individual will lead to FI and sustainable EG.

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