SJIF Impact Factor (2025): 8.574 Journal DOI: 10.36713/epra0003 ISSN: 2250 – 2017
International Journal of Global Economic Light (JGEL)
Volume: 11 | Issue: 5 | May 2025

CAUSAL RELATIONSHIPS BETWEEN FDI AND ECONOMIC GROWTH IN INDIAN INDUSTRIAL SECTORS: A SEM APPROACH

Dr Grace Ganta
Professor, Department of Management studies,
Swarnandhra College of Engineering and Technology, Narsapur, Andhrapradesh

Article DOI: https://doi.org/10.36713/epra21440
DOI No: 10.36713/epra21440

ABSTRACT

Purpose*: This empirical investigation comes from the inconclusive evidence produced by a flurry of previous empirical studies on foreign direct investment (FDI)-growth nexus. The study recognizes the fact that the treatment of FDI inflows in an aggregate form instead of a Select sector for correlating it with economic growth in India.*

Design/Methodology/Approach: *The purpose of the study is based on Top Five Sectors (Service sector, Telecommunication Sector, Drugs and Pharmaceutical sector, Chemical Sector, Metallurgical industries) in India. I collected data from the DPIIT website (Secondary Data) for the period 2022-2023. We are Using stalactitical tools like ADF Stationarity, VECM, VAR, SEM Model.*

Originality/Value*: This study applies Structure Equation model with vector autoregressive specification to examine as to how sector-wise FDI inflows can affect the growth of respective sectors in the context of an emerging economy like India for the period from April 2022 to March 2023.*

Findings: *FDI and growth both for the short and long run. On the basis of the findings, the study suggests economic policymakers to rejuvenate the primary sector of India so that it can attract and absorb more FDI and ensure sustainable Sectoral growth. The study examined that Computer Software & Hardware, Service Sector, Trading Sector, Non-Conventional Energy, Drugs & Pharmaceuticals with FDI had shown significant short run relationship*

KEYWORDS: *FDI, Sectoral Growth, Economy Growth, SEM Model.*

JEL Codes: M10, M15, M82, M88.

1. INTRODUCTION

Foreign Direct Investment (FDI) is a flow of funds between countries through which one can take advantage of their investment while another can increase productivity and find a better position through performance. Effectiveness and efficiency depends on the perception of the investor: if an investment is long-term, it will make a positive contribution to the economy. If it is for profit-making purposes in the short term, its economic impact may be lower. Government trade barriers and foreign investment policies may also affect the FDI and may be less or more effective in contributing to the economy and GDP, as well as the information technology sector. This paper uses time series information to perform an empirical analysis of India to see if there is any empirical evidence supporting this hypothesis. As can be seen in the number of studies of international capital flows, the main motivation for making direct foreign investments exactly is historically the advantage of ownership, location benefit and the advantage of internationalization. It should therefore be noted that, as a favorable geopolitical location, considerable market size, abundance of natural resources has a significant effect on the attractiveness of investment in a country. In today's fierce competition to attract FDI, however, the determinants mentioned above are not sufficient to ensure that a country is competitive on a world capital market. The regulatory framework built in a nation significantly decreases shareholders ' transaction cost, simplifies trade and, above all, offers safeguards and protects foreign investors. In addition, it should be noted that high institutional efficiency, together with the FDI attractiveness, is a necessary factor to draw not only FDI but also to gain potential advantages. The study has considered the three factors as the Indian economic growth

indicators. The study has made an attempt to know the future movement of the Indian economy with the FDI flows. The study has considered the following are the economic growth parameters.

2. REVIEW OF LITERATURE

- **Mazumdar (2020):** - The paper examined implication of capital flows in India and its implication for economic growth & argued that it was hoped that with the partial liberalization of the capital account in the- early 1990s, capital inflows would contribute towards India's economic growth. This paper reviews the role of capital flows into India and examines if such flows have in any way contributed to economic growth.
- **Mahajan and Agarwal (2020):** suggests that India can attract foreign investment by marketing. In order to make the foreign investment policy more transparent and less complex, the Government has done away with pre-equity approvals if a certain set of preconditions are met. This combines with other factors such as high economic growth in the main home and host countries, improvement in corporate profitability and higher stock valuation point would result to a recovery of FDI flows.
- **Click (2019):** examined the risk of US foreign direct investment over the period 1982-1998 in 59 host countries. The first part of the analysis built an empirical model to explain the time series and cross-country patterns of return on capital. The return on assets (ROA) has been used as a measurement of the return on capital. There are four main findings. First, the ROA in a majority of countries does not simply track the worldwide. Second, cross country differences are explained by financial risk. Third, unexplained country risk is qualitatively risk.
- **Bhaumik (2019)**: - The study argued while examining the banking sector he argues that the cost efficiency and profitability of the public sector banks have improved significantly, article argues that was time to bite the bullet and privatize the public sector banks and, in the interim, to reduce the risk associated with creation of bank assets by facilitating greater securitization of credit.
- **Nagesh Kumar (20018)**: The paper, "Liberalization of FDI Flows and Development-Indian Experience in the 1990's" reviews the Indian experience with FDI and its quality since 1991 & summarizes the evaluation of Indian Government policy towards FDI during 1948-2004 and examined the trends and patterns of FDI inflows in India in 1990's. The author has used only secondary data collected from the UNCTAD world investment database and the sources of Government of India.
- **Peng Hu (2017)**: - "Economic Crisis on the Operation Behavior of the Firms: Case of East Asia", some Finnish Firm, depending on their industrial and financial position, saw the Asian crisis as an ideal time to enter a new market in the region or expand existing operations there. There might be additional investment incentives available for the TNCs in the recovery phase. Altogether, the great majority of the world's largest firm kept their confidence in East Asian crisis countries as an investment destination unchanged during the Asian crisis.
- **Elissa Braum (2017)**: - The study presents a review of research and policy on the links between foreign private investment and development. This work provides broad and consistent evidence for the argument that growth leads to FDI rather than FDI leading to growth. The work also underscores the importance of economic policy context for gaining development benefits from FDI. Besides keeping the production costs low to attract more qualitative FDI, countries must also have adequate domestic capacities to benefit from FDI.
- **Subramanya and Bhuma (2016)**: - In the paper "Studying outward FDI by India", find that government expenses and labor outflows have significant elasticity with respect to remittances, & the level of overseas investments is closely related to the comfort level of the investors. The study contends that government expenditure to promote the tertiary education and increasing the pool of skilled man power and the number of people emerging has a direct bearing on the remittances.
- **Rajesh Narula and S. La1 (2016)**: - In the edited volume, find that understanding the factors that led to an optimization of the benefits from FDI for the host country. Despite the diversity of the countries covered and methodology used, the chapters in this volume point to a basic paradox, "With weak local capabilities, Industrialization has to be more dependent on FDI. The studies here do not support the view that FDI is a sine qua non for economic development.
- **Karunagaran (2015)**: - The study examined the historical perspective of foreign banks & viewed the operations of foreign banks in historical perspective, and taking a cue there from, provides an analysis of contemporary policy that has promoted their aggressive expansion.
- **Vasudevan (2015)**: - The paper describes that there is no standard theoretical construct relating to portfolio flows. In the early literature, foreign investment was viewed essentially in terms of foreign direct investment (FDI), a view that was given, as economic historians would recall, policy relevance in the Leninist New Economic Policy for the erstwhile Soviet Union in 1924.

SJIF Impact Factor (2025): 8.574 Journal DOI: 10.36713/epra0003 ISSN: 2250 – 2017
International Journal of Global Economic Light (JGEL)
Volume: 11 | Issue: 5 | May 2025

4. STATEMENT OF PROBLEM

In recent years emerging countries are attracting significant FDI inflows. The economic, social development appear to the growing economies considerable making effects to attract FDIs by focusing prospective sectors, institutional settings, policy changes. Regulatory liberalization, investor guarantees, incentives and concessions etc… but India lagging behind in attracting the sizable amount of FDI. Over the past decade china doubled its FDI and India over all FDI inflows show a significant growth trend. Despite the dynamism of the country with enormous potential and increasing importance for FDI but being the amount world's top fastest growing countries (BRICS) failed to achieve the expected FDI inflows compound with other sizable economic oriented countries.

5 RESEARCH GAP

Few studies have considered investigating the policy impact on FDI flows. Few studies considered investment decisions, technological issues, economic problems related to financial mobilization through foreign direct investment. The latest development in this regard has been examined by the govt. of India to attract the FDI flows. Most of the studies had tried to look at the regulatory bottle necks in foreign direct investment area. Overall, international, national, and local studies are already being done, with the help of reasonably large samples, had not given full justice to the growth of flows, issues, and issues related to foreign direct investment. Smaller counties are able to attract larger portion of FDI successfully than India, e.g., Belgium is 100% attracting FDI and highest FDI attracting country in the world. One of the major road blocks is observed to the institutional factors which are unable to pull the funds in to India.

6. OBJECTIVES OF THE STUDY

- To study the Role of Foreign Direct investment flows in to India.
- To study the Impact of Foreign Direct investment flows on select sectoral growth in India

7. HYPOTHESES OF THE STUDY

H0: There is no impact of Foreign Direct investment on the select sectoral growth.
H1: There is an impact of Foreign Direct investment on the select sectoral growth**.**

8. RESEARCH METHODOLOGY

Study period

The period of the study is between the financial year 2022-23. And the data collected from DPIIT website and Few journals.

Stalactitical tools to be used

- Unit Root Test
- ARDL approach
- Least Squares regression (OLS)
- SEM Model

9. SCOPE OF THE STUDY

To study the Impact of Foreign Direct investment flows on select sectoral growth in India and we consider Five Economic factors for economic growth of the country.

10. RESULT AND DISCUSSION

- **To study the Role of Foreign Direct investment inflows in India.**

Share of Top Five Investing Countries in FDI Equity Inflow in April 2018 to March 2023.

Rank	Country	FDI Equity Flow During2022-2023.	% Share in FDI Equity Flow During2022-2023.
1	Singapore	1,37,374	37 %
2	Mauritius	48,895	13 %
3	USA	48,666	13 %
4	UAE	26,315	7%
5	Netherland	19,855	5%

SJIF Impact Factor (2025): 8.574 Journal DOI: 10.36713/epra0003 ISSN: 2250 – 2017
International Journal of Global Economic Light (JGEL)
Volume: 11 | Issue: 5 | May 2025

Sharef Top Five Investing Sectors in FDI Equity Inflow in April 2018 to March 2023.

Rank	Country	FDI Equity Flow During2022-2023.	% Share in FDI Equity Flow During2022-2023.
1	Computer Software & Hardware	74,718	20 %
2	Service Sector	69,852	19 %
3	Trading Sector	38,060	10 %
4	Non-Conventional Energy	19,977	5%
5	Drugs & Pharmaceuticals	16,654	4%

Factors Affecting Foreign Investment

In the host country, foreign investment has so many impacts. Foreign investors are researching the obstacles of the host countries that impact foreign investors negatively because none of the companies wants a loss after investments Boopath, D. (2013)[6]. There are so many reasons for not investing in the host country as a foreign company.

- **Rate of Interest/ Foreign Exchange Rate:** The disparity in the rate of interest at different locations is one of the most important reasons for foreign capital movements. Some aspects are the same, capital continues to shift from a low interest rate country to a higher one. In this situation the foreign investment movement is very slow when the exchange rate is unstable and the possibility of a decline is in future.
- **Speculation:** Speculation regarding anticipated changes in interest rates can influence the short-term capital movements. The investment portfolio in the host country market is a form of speculation. If the host country market is strong in speculation, the investment is decreased by foreign investors. As a result, foreign investment movement in the host country is small.
- **Profitability:** The motive of profit influences the private foreign capital movement. Therefore, private capital will flow to countries with comparatively higher returns on investment.
- **Costs of Production:** Lower production costs in foreign countries encourage private capital movements. Two types of cost-saving investment can be distinguished. The first is because raw materials must be obtained in the outside world. These materials cannot be purchased at home or at very high costs, but they are important to the manufacture and sale of finished products at home or abroad. Opportunities to profit would be unexplored without them. Nevertheless, the fact that capital will enter the asset, the second cost-cutting expenditure of the product other than resources, primarily labor, is driven by large investments in the extractive industries.
- **Economic Conditions:** Private foreign investment is influenced by economic conditions, particularly market potential and infrastructure facilities. The population's size and country's income level have a significant impact on the market opportunities.
- **Government Policies:** The government policies are important factors that may affect foreign investment in a country, particularly in relation to foreign investment, foreign cooperation, transfer payments, revenues, taxations, exchange INSTITUTIONAL METRICS, tariffs and monetary incentives and other steps.
- **Political Factors:** Policy considerations such as political stability, political party structure and relations with other countries also affect movements of capital. Political influence on business practices such as tax changes and industrial policies have adverse effects on the movement of foreign investment in the country, on the other hand.

❖ **To study the Impact of Foreign Direct investment flows on select sectoral growth in India.**

Table No:1-Unit Root test with Augmented Dickey Fuller

Sectoral Investment Factors	Level	1st Difference	2nd Difference
Service sector	**0.0036***	-	-
Telecommunication Sector	0.4562*	0.06985	0.2314
Drugs and Pharmaceutical sector	0.2365	0.3698	0.2361
Chemical Sector	**0.0014***	-	-
Metallurgical industries	0.0782	0.4562	0.3245

***Significant at 5% level**
Source: compiled on secondary data through E-views

SJIF Impact Factor (2025): 8.574 Journal DOI: 10.36713/epra0003 ISSN: 2250 – 2017
International Journal of Global Economic Light (JGEL)
Volume: 11 | Issue: 5 | May 2025

Interpretation:

The table illustrates the unit root test result under the Augmented Dickey Fuller test for the sectoral investment factors of FDI are observed significant at the 5% level. The Computer Software & Hardware observe 0.0036* and Non-Conventional Energy 0.0014*

Unit Root test with Phillip Parron

Sectoral Investment Factors	Level	1st Difference	2nd Difference
Computer Software & Hardware	-	-	-
Service Sector	**0.0062***	-	-
Trading Sector	0.2365	0.0398*	-
Non-Conventional Energy	-	-	-
Drugs & Pharmaceuticals	**0.0282***	-	-

Interpretation

The table depicts the unit root test result under the Phillip Parron test for the sectoral investment factors of FDI are observed significant at the 5% level. The Computer Software & Hardware and Non-Conventional Energy are found to be significant at normal level and they are stationary. Trading Sector is observed to be non-significant at normal level but it is observed to be stationary in 1st difference

Johansen Integration Test for Sectoral Growth with FDI Inflows in April 2022 to March 2023.

Sample (adjusted): 5 24				
Included observations: 20 after adjustments				
Trend assumption: Linear deterministic trend				
Series: SECTORAL- FDI				
Lags interval (in first differences): 1 to 3				
Unrestricted Co-integration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None	0.375238	11.00550	15.49471	0.0012
At most 1	0.076783	1.597814	3.841466	0.00062
Trace test indicates 1 Cointegration at the 0.05 level				
* Denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (2023) p-values				
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None	0.375238	9.407682	14.26460	0.0038
At most 1	0.076783	1.597814	3.841466	0.02062
Max-eigenvalue test indicates 1 Cointegration at the 0.05 level				
* Denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (2023) p-values				

Interpretation

The above Johansen test of co-integration table presents the Trace and Max-Eigen value that are performed to determine the order of integration; both the test indicates that Null hypothesis as none of the variables is co-integrated since p-value is less than 0.05 (0.0000<0.05), but the above table results reveals that there is at most one co-integrating equation or error which state that p-value is greater than 0.05 for both trace and Max-Eigen value which indicates that Null hypothesis has been rejected and acceptance of alternative hypothesis i.e., variables are co-integrating and concluded that we can run the VECM (vector error correction model).

SJIF Impact Factor (2025): 8.574 Journal DOI: 10.36713/epra0003 ISSN: 2250 – 2017
International Journal of Global Economic Light (JGEL)
Volume: 11 | Issue: 5 | May 2025

Vector Auto Regression Estimates for Sectoral Growth with FDI Inflows in April 2022 to March 2023.

Vector Error Correction Estimates		
Sample (adjusted): 5 24		
Included observations: 20 after adjustments		
Standard errors in () & t-statistics in [ ]		
Co-integrating:	CointEq1	
SECTORAL (-1)	1.000000	
FDI (-1)	-0.964512	
	(0.28125)	
	[-3.42936]	
C	-1.134617	
Error Correction:	D(TRADINGS)	D(FDI)
CointEq1	-0.665920	-0.928564
	(0.33469)	(0.37144)
	[-1.98965]	[-2.49992]
D(SECTORAL (-1))	0.101928	0.214294
	(0.36614)	(0.40634)
	[0.27838]	[0.52738]
D(SECTORAL (-2))	0.022984	-0.202072
	(0.17983)	(0.19958)
	[0.12781]	[-1.01250]
D(SECTORAL (-3))	-0.107256	0.025828
	(0.18764)	(0.20824)
	[-0.57162]	[0.12403]
D(FDI(-1))	-0.654089	-2.098128
	(0.50102)	(0.55603)
	[-1.30552]	[-3.77343]
D(FDI(-2))	0.275167	-1.279605
	(0.54642)	(0.60641)
	[0.50358]	[-2.11013]
D(FDI(-3))	-0.050433	-0.461561
	(0.42919)	(0.47631)
	[-0.11751]	[-0.96903]
C	-0.368106	-2.034472
	(0.83791)	(0.92991)
	[-0.43931]	[-2.18782]
R-squared	0.907671	0.874259
Adj. R-squared	0.853813	0.800910
Sum sq. resids	111.0321	136.7510
S.E. equation	3.041821	3.375783
F-statistic	16.85290	11.91914
Log likelihood	-45.51964	-47.60306
Akaike AIC	5.351964	5.560306
Schwarz SC	5.750257	5.958599
Mean dependent	-0.334919	-0.574239
S.D. dependent	7.955708	7.565704
Determinant resid covariance (dof adj.)		84.52498
Determinant resid covariance		30.42899
Log likelihood		-90.91150
Akaike information criterion		10.89115
Schwarz criterion		11.78731

Interpretation

The above table contains VECM and its coefficient value as well as t-statistic and standard error. Results indicates that the coefficients were significant at 5% level of significance. DI and Trading sector are in logarithms and one

SJIF Impact Factor (2025): 8.574 Journal DOI: 10.36713/epra0003 ISSN: 2250 – 2017
International Journal of Global Economic Light (JGEL)
Volume: 11 | Issue: 5 | May 2025

co-integrating vector is estimated which indicates the coefficients as long run relationship. The fall in Sectoral investment will leads to decrease in Indian FDI flows, thus, the estimated model was able to produce a consistent result. i.e., 1% fall of the Trading sector investment is likely to decrease Indian FDI flows by 0.964512(96%). Generally, the result of the co-antiquation found to be satisfactory in terms of correct signs. It is seen that Trading sector investment has negative sign with the India FDI inflows relationship.

Reliability Analysis

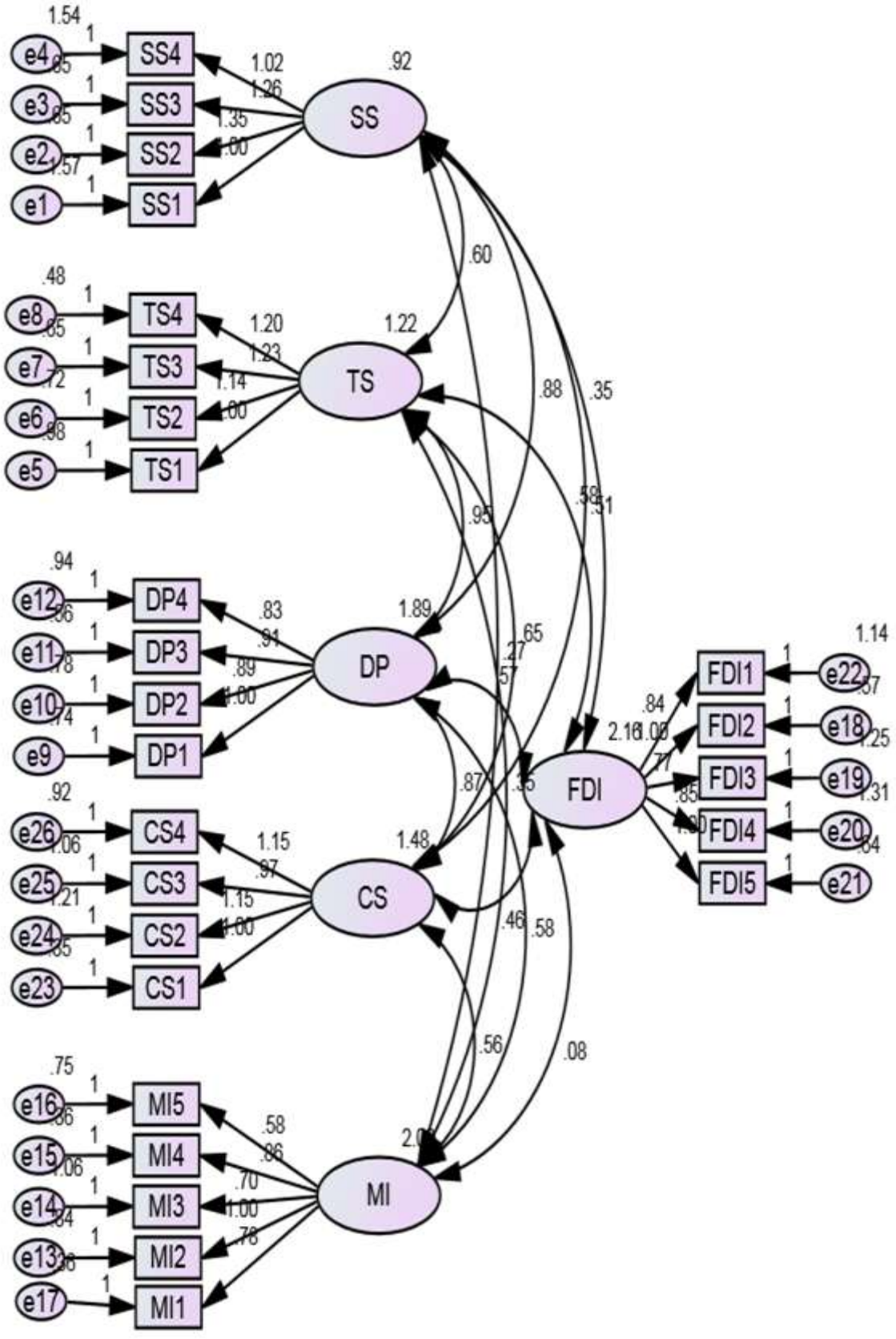
S.No	Construct	Reliability Values of Initial stage	Dimension	Loadings	Reliability Values	CR	AVE	No. of dimensions
1	SS	0.817	SS1	0.897	0.817	0.829	0.550	4
			SS2	0.717				
			SS3	0.832				
			SS4	0.792				
2	TS	0.898	TS1	0.804	0.898	0.899	0.690	4
			TS2	0.898				
			TS3	0.871				
			TS4	0.793				
3	DP	0.891	DP1	0.712	0.891	0.894	0.678	4
			DP2	0.786				
			DP3	0.892				
			DP4	0.808				
4	CS	0.887	CS1	0.835	0.887	0.908	0.665	4
			CS2	0.833				
			CS3	0.899				
			CS4	0.912				
5	MI	0.897	MI1	0.817	0.897	0.891	0.672	5
			MI2	0.879				
			MI3	0.814				
			MI4	0.851				
			MI5	0.931				
6	FDI	0.893	FDI1	0.891	0.893	0.897	0.638	5
			FDI2	0.892				
			FDI3	0.873				
			FDI4	0.799				
			FDI5	0.811				
Total number of Dimensions								26

Interpretation

The above table illustrates the results of Autoregressive Distributed Lag model which describes the direction of the depended variable with independent variable. As the coefficient values of the independent variable (Control of Corruption) and the coefficient values of the dependent variable (Foreign Direct Investment) are positive which indicates there is positive association between the variables. And, as the R-square is more than 0.30, independent variables explain more than 53% of variance experienced by the dependent variable

SJIF Impact Factor (2025): 8.574 Journal DOI: 10.36713/epra0003 ISSN: 2250 – 2017
International Journal of Global Economic Light (JGEL)
Volume: 11 | Issue: 5 | May 2025

CFA Overall Path Model



SJIF Impact Factor (2025): 8.574 Journal DOI: 10.36713/epra0003 ISSN: 2250 – 2017
International Journal of Global Economic Light (JGEL)
Volume: 11 | Issue: 5 | May 2025

Interpretation

The above table illustrates the results of Autoregressive Distributed Lag model which describes the direction of the depended variable with independent variable. As the coefficient values of the independent variable (Control of Corruption) and the coefficient values of the dependent variable (Foreign Direct Investment) are positive which indicates there is positive association between the variables. And, as the R-square is more than 0.30, independent variables explain more than 53% of variance experienced by the dependent variable

Fit indices values of CFA path model

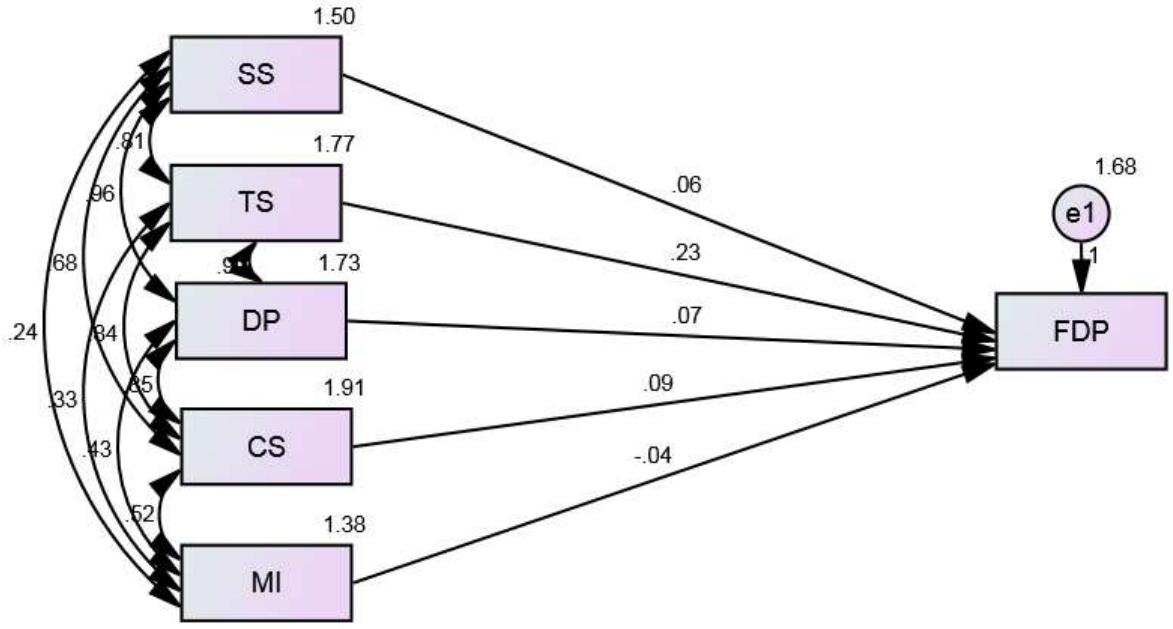
	χ2(df)	χ2/df	CFI	GFI	RMSEA
Model results	317.320(6)	284	0.960	0.892	0.021

Discriminant validity

	FDI	SS	TS	DP	CS	MI
FDI	**0.798**					
SS	0.251	**0.736**				
TS	0.356	0.565	**0.832**			
DP	0.283	0.670	0.626	**0.819**		
CS	0.039	0.196	0.225	0.299	**0.805**	
MI	0.255	0.435	0.487	0.519	0.325	**0.818**

Fit indices values of structural model

	χ2(df)	χ2/df	CFI	GFI	RMSEA
Model results	5.902(6)	1.03	0.911	0.893	0.041



11. CONCLUSION

In addition, India must stipulate that the FDI is spent on building back-end infrastructure, logistics or agro-processing units to improve the host country while allowing for FDI in the Indian infrastructure. The present study has focused on five sectors which have attracted the higher FDI. Hence the study suggests the process of economic liberalization must be strengthened and increasing numbers of sectors open to domestic inflows. To attract different types of flows, policymakers should be careful. Foreign investment policies should be aimed at boosting domestic production, savings or exports, promoting technology development and dissemination, and providing external market access.

12. REFERENCES

1. ***Mazumdar (2020):*** *- Political Economy of Federalism in India. Oxford: Oxford University Press, Pg 15, VOL 99.*
2. ***Bhaumik (2020):*** *- "Understanding Regional Economic Growth in India" (paper presented at the Asian Economic Panel Meeting, October 25-26, 2005 Vol 99, pg 155, issue 11*
3. ***Nagesh Kumar (2019):*** *- Does states Have an Enabling Environment for Industrial Growth? Some Evidence from Karnataka", Economic and Political Weekly, October 28,2005, Vol no 15, Pp.3861-3869.*
4. ***Peng Hu (2019):*** *- Peng Hu (2006) " India's Suitability for Florien Direct Investment, " working paper No 553, India Business with special reference to India. University of Arizona.*
5. ***Elissa Braum (2018):*** *- " Foreign Direct Investment, Development and Gender equity: A Review of Research and Policy" Occasional Vol no 80, Pg.no No. 12-18.*
6. ***Prof. Subramanya and prof. Bhuma (2018):*** *" Out ward Foreign Direct Investment by India-A New Dimension", social science Research network. No. 929054 (economic paper collection)*
7. ***Rajesh Narula and S. La1(2017): - "****Understanding Foreign Direct Investment Assisted Economic Development", Routledge London and New York. Vol no: - 15, Pg. no 89-96*
8. ***Karunagaran (2017):*** *- "Manufacturing Productivity in Indian States: Does Investment Climate Matter" Economic and political Weekly, June I I , 2005,pp. 2413-2420.*
9. ***Vasudevan (20016:*** *- State —level Reforms in India: Towards More Effective Government, Macmillan India Ltd, New Delhi, Vol no 81, Issue 16, Pg.no 145-147.*
10. ***Figueira (2016):*** *- "Does states Have an Enabling Environment for Industrial Growth? Some Evidence from Karnataka", Economic and Political Weekly, October 28,2000, pp.3861-3869*