SJIF Impact Factor (2024): 8.675| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 9 | Issue: 9 | September 2024 - Peer Reviewed Journal

AN ANALYSIS OF FDI - R&D INNOVATIONS ON ECONOMICAL ACTIVITIES IN INDIA

Nandini[1], Dr. Manoj Dolli[2]
[1]Research Scholar, Dept. of Economics, Vijayanagara Sri Krishnadevaraya University, Ballari
[2]Professor, Dept. of Economics, Dharwad University, Dharwad.

Article DOI: https://doi.org/10.36713/epra18226
DOI No: 10.36713/epra18226

ABSTRACT
Presently, the economies of nations are significantly affected by their innovative activities, which indicates technological upgradation and development as the growth of human resources. To account for the effect of FDI on R&D activities in the economy, the study has used a panel data set over 2010–2022. The estimated model demonstrates strong explanatory power, with most factors promoting productive capacities in India. Those innovations are most effective in the economy after the make in India and COVID-19.

INTRODUCTION
Innovations are the key factors for productive activities and significantly encourage economic growth. Innovations can bring greater output and yield advantages for consumers, enterprises, and the economy at large. Innovation in the economic sense refers to the creation and utilization of concepts and technology that enhance products and services or increase the productivity of their manufacturing (ecb.europa.eu). However, the economy's capacity for long-term development rests on innovation. In the last two decades, studies have observed massive growth in innovation across the world. Which can cause to potential growth in production, GDP, export, technology, knowledge, employment creation, etc otherwise economic growth slowdowns in the nation (Cette et al., 2016). It has been observed from the Endogenous growth models. Therefore to maintain the higher economic activities innovations and productive activities much needed in the present generation for the future economic growth was mainly observed from the USA, China, Japan, UK, etc..

The newly developed Productive Capacities Index (PCI) shows disparities in productivity across industries, sectors, and regions, which will account the variations in socioeconomic growth. Particularly badly on PCI are fragile and structurally weak economies. It is still very difficult to make emerging nations economically resilient. It primarily relies on developing, preserving, and using productive capacity in order to promote growth. This would necessitate a change from the existing fragmented and project-based interventions to cohesive, program-based, economy-wide approaches to the removal of legally imposed development limitations. Stronger international support is required to supplement and reinforce domestic actions and initiatives. The ongoing development obstacles have been exacerbated by new external shocks and instability, including pandemics, climate change consequences, a decline in global commodity prices, and a decline in confidence in multilateralism.

The index incorporates knowledge gained from our technical assistance to the most vulnerable nations in building vital components of their trade and economic infrastructure, together with decades of comprehensive research and policy analytic work. The index is the first thorough attempt to gauge productive capabilities across all economies and create a multifaceted index that may offer diagnostics and country-specific insights on the growth of productive capacity (UNCTAD). To assist in figuring out the causes of systemic vulnerabilities and locate the factors that promote economic growth - including advancements made toward both national and international development goals - PCI plays a significant role in these initiatives. PCI also provides ratings that are particular to each nation and area.

The score highlights areas where policies are effective and those that require correction, assisting in the diagnosis of whether a country is leading or lagging behind. Under each of its eight components - human capital, natural capital, energy, ICTs, structural transformation, transportation, institutions, and the private sector - it offers a road map for upcoming policy initiatives and interventions. PCI tracks advancements and highlights barriers to the growth of productive capabilities in emerging nations is more than expectations. However, India won the R&D race from 2022 (fdiMarkets, 2023).

SJIF Impact Factor (2024): 8.675| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 9 | Issue: 9 | September 2024 - Peer Reviewed Journal

IPR Policy: according to the Trade-Related Aspects of Intellectual Property Rights (TRIPS) framework. India is one of the top three nations with a significant increase in Patent Cooperation Treaty (PCT) submissions in 2018 (The Mirrority).

The government has implemented several significant measures that have strengthened India's intellectual property laws over the years (meity.gov.in, 2016). These include fee reductions such as a 10% for online filing rebate, an 80% fee concession (PIB, and the Economic Times, 2022) for startups, small entities, and educational institutions, and provisions for expedited examination for startups, MSMEs, and other categories.

Global Innovation Index

The DPIIT and IP office's concerted efforts have raised knowledge of IP rights across the board. While the number of IPR filings has increased as a result of these efforts, the number of patent applications pending at IP offices has decreased. Additionally, he stated that this will bring India one step closer to its ambitious goal of ranking among the top 25 countries in the world for innovation.

According to the Global Innovation Index (GII) 2023, India continued to rank 40th out of the world's most inventive economies. India is rated seventh in the world in terms of resident patent filing activity, according to the WIPO Report 2022. India moves up one spot in the Network Readiness Index (NRI) 2023 study, from 79th place in 2019 to 60th place in 2023. Regarding the use and effects of information and communication technology (ICT) in 134 economies worldwide, NRI is one of the top global indexes (Indian Express, 2024).

DATA AND METHODOLOGY

The study has been uses data of FDI-RD and patents over 2010 to 2022, and estimates the 5year moving average up-to 2024. Which has been used to estimate the growth rate to the base year (selected a year - 2010). Other than that study has estimated the descriptive statistics for the data of productive capacity index (PCI) covers the data of 2001-2024, which has been collected from the sources of fdiMarkets, TheMirrority, European Patent Office, and UNCTAD, etc.. the changes in PCI values has been used for the estimation of simple statistics, Pearson coefficient of correlation, and for the regression function. The study used the data for the analysis with the help of tabular and graphical methods.

The study has estimated the model using the regression function as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \cdots \ldots \ldots \ldots + \beta_n X_n + \varepsilon$$

The model given in equation, 'Y' represents the Dependent variable (PCI), α is the intercept value that explains the autonomous values of the dependent variables. β is nothing but a parameter vector, which confirms the amount of slope. However, X shows independent variables, and ε concentrate on the error terms. As a nature of the panel data set, heteroscedasticity accounted. Therefore, the study has diagnosed the heteroscedasticity, autocorrelations, and multicollinearity effects by the estimation of the Newy-West model. The VIF values, which are more than 5 and 10 indicate multicollinearity and severe multicollinearity. Estimation was done with the help of SAS software.

ANALYSIS AND INTERPRETATION

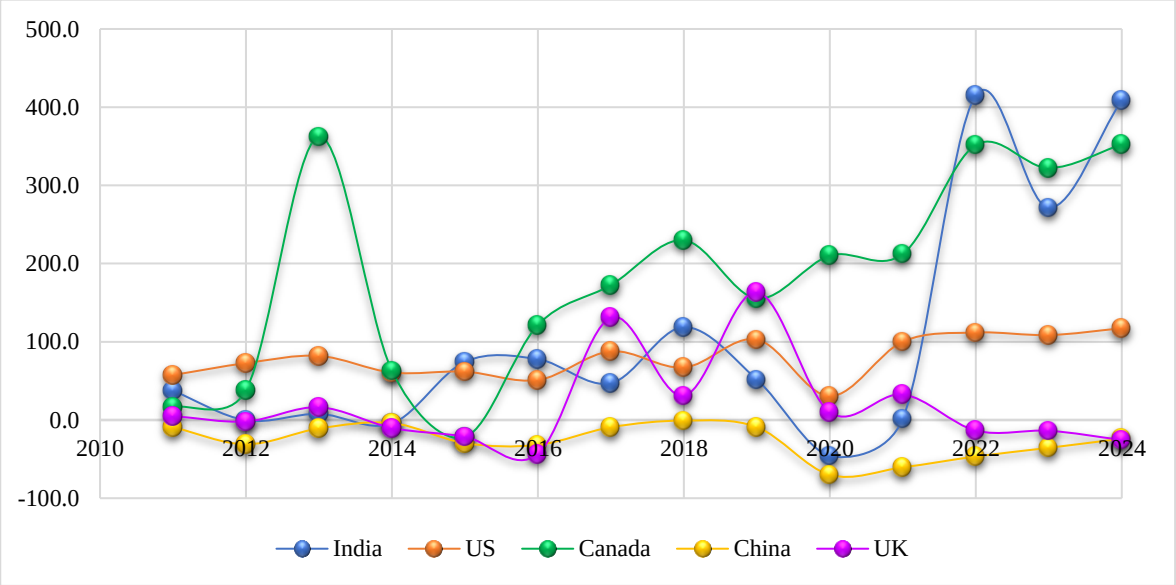
The study has been used the FDI-RD investments, Patents, productive capacity index (PCI) data for the estimation and analysis. Which is as follows in bellow..

Table 1: Base year Growth rate of FDI destinations by R&D activity capital expenditure from 2010-2022 (Base year-2010, in Percentage).

Year	India	US	Canada	China	UK
2011	37.4	57.5	16.5	-9.2	5.0
2012	-0.4	72.7	38.0	-31.0	-1.9
2013	7.8	81.9	362.3	-10.8	16.3
2014	-4.5	60.7	62.9	-3.9	-10.2
2015	74.5	61.8	-21.7	-29.6	-21.4
2016	77.7	51.1	121.4	-31.8	-43.3
2017	47.1	87.8	172.5	-9.3	131.1
2018	118.7	67.1	229.9	-0.8	31.0
2019	51.8	102.8	155.3	-9.1	163.6
2020	-45.8	30.5	210.2	-70.1	10.0
2021	1.8	100.2	212.3	-60.5	32.7
2022	415.3	111.9	351.9	-46.7	-13.5
2023	271.3	108.6	322.2	-35.6	-13.8
2024	408.9	117.3	352.3	-23.9	-25.5

SJIF Impact Factor (2024): 8.675| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 9 | Issue: 9 | September 2024 - Peer Reviewed Journal

Figure 1: Base year Growth rate of FDI destinations by R&D activity capital expenditure from 2010-2024 (Base year 2010, in Percentage).



The table 1 and figure 1 shows, the top five FDI destinations by R&D activity capital expenditure from 2010 to 2022. The top 5 destination countries are: India, the US, Canada, China, and the UK. According to fDi Markets, in 2022, India recorded an estimated US$12892 billion and estimated data from moving average is also close to US$12733 billion at 2024 in FDI - R&D, is more than 400 percent from US$2548 billion in 2021 and to the 2010. 2022 is the highest level of FDI in R&D ever recorded in India, and it surpasses the United States, which has been the top FDI in R&D destination for the past decade. India has also seen its share of global R&D activity and capital expenditure grows in recent years, from 3.1 percent in 2010 to 8.1 percent in 2022. This growth is likely due to a number of factors, including India's large and growing pool of skilled workers, its cost-competitiveness, and its government's supportive policies. According to a Deloitte survey of 99 companies in 2022, India continues not only to be a destination of choice for research and development (R&D) operations and multinationals' engineering but is also expected to keep growing.

The United States has consistently been the top destination for R&D activity by capital expenditure, accounting for an average of 28.4 percent of the global total over the 13 -year period. In 2022, the US attracted an estimated US$9.8 billion in FDI in R&D, down slightly from US$9.2billion in 2021. However, the US still accounts for a significant share of the global FDI in R&D market. Which is 117.3 times higher than the 2010.

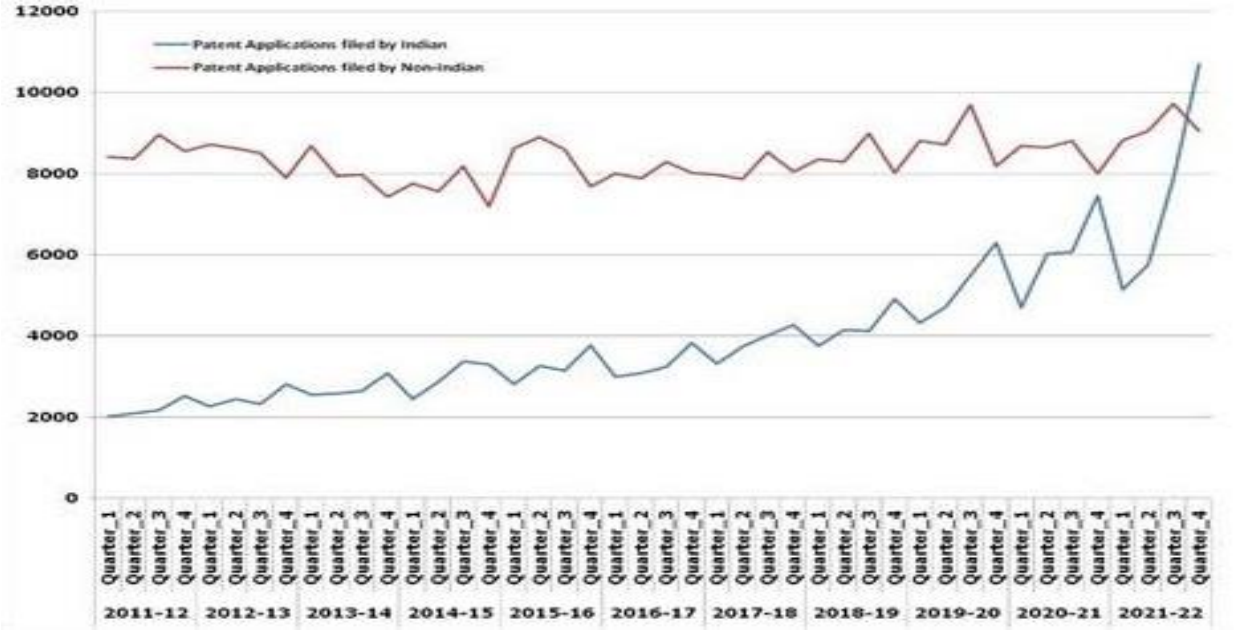
Canada, China, and the United Kingdom are also major FDI destinations for R&D activity. In 2022, Canada attracted an estimated US$ 6.7billion in FDI in R&D, China attracted an estimated US$2.4billion in FDI in R&D, and the UK attracted an estimated US$1.2billion in FDI in R&D. Canada has also been a major player, accounting for an average of 10.8 percent of the global total. Canada has been attracted 352.3 percent higher FDI-RD than 2010. China has seen its share of global R&D activity capital expenditure was grown significantly in recent years, from 5.7 percent in 2010 to 15.4 percent in 2022. But in comparison to the base year 2010, in 2022 China has received FDI on research and development works was -23.9 percent. However, the United Kingdom is the Fifth largest FDI destinations by R&D activity in capital expenditure and UK has maintaining the consistency over a period except 2016 (826 US $Billion), 2017 (3365 US$ Billion) and 2019 (3838 US$ Billion). Also, UK received a FDI in R&D activities was declining as compared to 2010 is -25.5 percent on 2024 and 13.5 percent in 2022. Overall, the table shows that the India, United States, Canada, China, and UK are the top five destinations and other five states in top ten are Spain, Ireland, Singapore, Mexico, and France are involved in this FDI destinations by R&D activity capital expenditure. These five countries account for over half of the global total.

India is becoming increasingly attractive to MNCs that are looking to invest in research and development. This is likely due to a number of factors, including India's large pool of skilled workers, its growing economy, and its government's support for R&D investment. The US remains home to some of the world's leading R&D universities and companies. It also has a well-developed innovation ecosystem. The growth in the number of FDI destinations for R&D activity is a positive sign. It suggests that MNCs are increasingly looking to invest in R&D in a variety of countries. The number of FDI destinations for R&D activity in capital expenditure will be increased over time. In 2010, there were an estimated 50 FDI destinations for

SJIF Impact Factor (2024): 8.675| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 9 | Issue: 9 | September 2024 - Peer Reviewed Journal

R&D activity in capital expenditure. By 2022, this number had increased to an estimated 75 FDI destinations for R&D activity in capital expenditure.

Figure 2: The quarterly filed patent applications from Indians and Non-Indians.



Source: Press Information Bureau.

In figure 2 study observed, from 2011-12 onwards (Figure 1), the patent applications of Non-Indians has been declining until 2014-15. Which is lesser than 8000, mainly in the period of 2014-15 elections due to the scariness of Govt. instability caused to decline and reached approximately 7200. As the existence new government (NDA) from the 2015-16, applications of Non-Indians has been increasing for the patents is more than the before 2014.

However, a significant milestone was reached by India in the context of the IP innovation ecosystem: in the quarter of January to March of 2022, out of the total 19796 patent applications filed, 10706 were filed by Indian applicants, compared to 9090 by non-Indian applicants. This is the first time in the last 11 years that the number of domestic patent filings at the Indian patent office has surpassed the number of international patent filings.

Moreover, the applications of Indians have been increasing over a period from 2011-12 to till date for the patents. Only due to the effects of Corona (COVID-19) the fall patent application has been observed. The COVID-19 is also a main region to rapid growth in the patent application from Indians after the end of Corona.

Table 2: Estimation of descriptive statistics

Simple Statistics						
Variable	**Variable Lables**	**Mean**	**Std Dev**	**Sum**	**Min**	**Max**
PCI	Productive Capacity Index	37.32	4.70	895.76	29.21	43.8
HC	Human Capital	31.54	4.36	756.92	23.64	37.4
NC	Natural Capital	48.20	2.21	1157	43.93	50.6
Energy	Energy	34.00	8.16	816.01	21.76	47.52
Transport	Transport	30.52	5.96	732.54	26.1	56.2
ICT	ICT	17.68	8.80	424.31	6.85	34.91
Institutions	Institutions	50.17	1.36	1204	47.8	52.6
PS	Private sector	48.50	2.99	1164	43.53	53.23
SC	Structural change	69.75	7.96	1674	52.50	76.6
FDIRD	FDI-RD	12764	20111	306339	110.42	74051

SJIF Impact Factor (2024): 8.675| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 9 | Issue: 9 | September 2024 - Peer Reviewed Journal

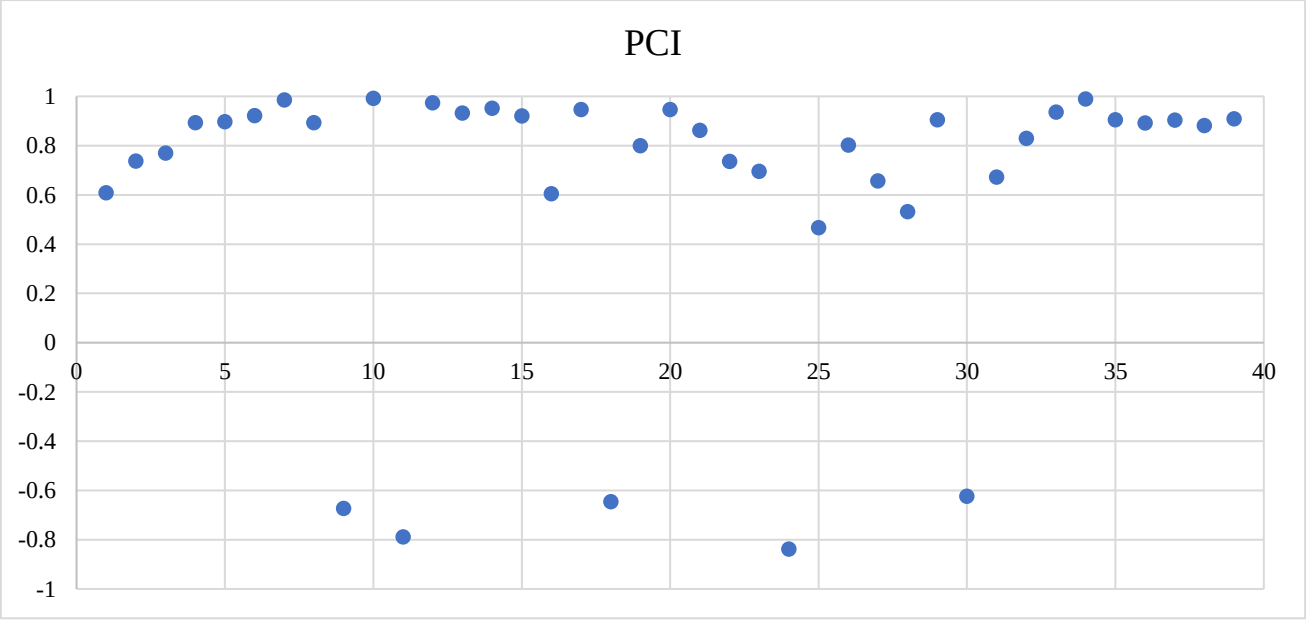
FDIRDP	FDI-RD Projects	131.25	44.36	3150	53	225
JFDIP	Jobs from FDI Projects	304540	211094	7308951	113024	885087
IC	Inventor Country	3964	3531	95143	234	10582
Inflation	Inflation	6.09	2.53	146.09	3.33	11.99
PUSD	PPP-USD	16.70	5.10	400.76	9.77	24.06
RUSD	Rupee-USD	58.49	13.76	1404	41.35	83.36
EoDB	Ease of Doing Business	105.20	32.69	2104	57.4	142

The above table 2, depicts the descriptive statistics, in which Productive Capacity Index (PCI) deviates 4.70 from the mean value of 37.32. The PCI has moderate variability with values ranging between 29.21 and 43.80, indicating consistent productivity levels across different observations. Followed by Human capital (HC), transport, private sector performance, inflation, and purchasing power parity are also shows a moderate variability. Low variability is found in natural capital (Std Dev of 2.21) and the institutions (1.36) are shown relative consistency.

With a standard deviation of 8.16, the energy variable exhibits substantial variability, suggesting a notable variation in energy supply or use. Transportation has a moderate degree of variability over a somewhat broad range, indicating varying capacities or infrastructure levels. ICT has high variability, pointing to notable variations in ICT usage or infrastructure between observations. There appear to be variations in the performance or activity of the private sector based on the modest variability of the private sector variable. The variety of structural change is quite high, suggesting varying degrees of structural or economic shift. FDI-RD exhibits exceptionally high variability, pointing to notable variations in FDI in R&D between data. The number of FDI-RD projects varies significantly, indicating varying degrees of foreign investment in R&D initiatives.

High variability is observed in energy availability, ICT adoption, structural change, employment generation from FDI projects, inventor numbers, and ease of doing business. Extremely high variability is observed in FDI-RD, FDI-RD projects, and exchange rate (Rupee-USD) changes over time. Overall, the study highlights the importance of understanding and adapting to changes economic conditions.

Figure 3: The Pearson Coefficient of correlation among PCI and other variables.



The study has estimated Pearson Correlation Coefficient to the Productive Capacity Index (PCI), has been shown in the below table 3 and figure 3 explains, there was a strongly and positive correlation with HC (0.99), Energy (0.97), ICT (0.93), PS (0.95), SC (0.92), FDI-RD (0.61), JFDIP (0.74), IC (0.92), PUSD (0.98) and RUSD (0.89) are statistically significant P<0.0001. The other variables of NC (-0.789) and EoDB (-0.719) are showing negative correlation with statistically significance. The remaining variables of Institutions, Transportation, FDIRDP, and Inflation are negative but insignificantly correlated with PCI.

SJIF Impact Factor (2024): 8.675| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 9 | Issue: 9 | September 2024 - Peer Reviewed Journal

Table 3: Estimation of Pearson Correlation Coefficients to India's Productive Capacity Index (PCI).

Var	PCI	HC	NC	Energy	Trans	ICT	Insti	PS	SC	FDIRD	JFDIP	IC	Inflation	PUSD	RUSD
HC	0.99213 <.0001														
NC	-0.78916 <.0001	-0.80131 <.0001													
Energy	0.97418 <.0001	0.97122 <.0001	-0.88383 <.0001												
Trans	-0.29202 0.1662	-0.30811 0.143	0.22821 0.2835	-0.27884 0.187											
ICT	0.93268 <.0001	0.92221 <.0001	-0.91533 <.0001	0.98078 <.0001	-0.24786 0.2429										
Insti	-0.15821 0.4603	-0.17519 0.4129	-0.05703 0.7913	-0.10758 0.6168	-0.26632 0.2084	-0.0982 0.648									
PS	0.95176 <.0001	0.94341 <.0001	-0.86678 <.0001	0.96151 <.0001	-0.28096 0.1836	0.94616 <.0001	-0.10407 0.6284								
SC	0.9201 <.0001	0.92124 <.0001	-0.6001 0.0019	0.85244 <.0001	-0.29728 0.1583	0.76297 <.0001	-0.21191 0.3202	0.86392 <.0001							
FDIRD	0.60863 0.0016	0.57903 0.003	-0.79841 <.0001	0.72899 <.0001	-0.1318 0.5393	0.80483 <.0001	0.12023 0.5757	0.7234 <.0001	0.45566 0.0252						
JFDIP	0.73766 <.0001	0.72211 <.0001	-0.89127 <.0001	0.84581 <.0001	-0.19939 0.3503	0.90395 <.0001	0.0411 0.8488	0.80677 <.0001	0.56052 0.0044	0.96617 <.0001					
IC	0.92161 <.0001	0.91257 <.0001	-0.9183 <.0001	0.9764 <.0001	-0.25718 0.2251	0.99459 <.0001	-0.06369 0.7675	0.92483 <.0001	0.73408 <.0001	0.78395 <.0001	0.89142 <.0001				
Infla	-0.02293 0.9153	0.02303 0.9149	0.17343 0.4177	-0.09636 0.6542	-0.172 0.4216	-0.21378 0.3158	0.18782 0.3795	-0.02236 0.9174	0.27324 0.1964	-0.153 0.4754	-0.18965 0.3748	-0.24933 0.24			
PUSD	0.98519 <.0001	0.9743 <.0001	-0.84706 <.0001	0.99192 <.0001	-0.29516 0.1614	0.97256 <.0001	-0.11112 0.6052	0.95661 <.0001	0.86699 <.0001	0.69717 0.0002	0.81469 <.0001	0.96869 <.0001	-0.10163 0.6365		
RUSD	0.89393 <.0001	0.87369 <.0001	-0.86889 <.0001	0.94747 <.0001	-0.28675 0.1743	0.97256 <.0001	-0.05234 0.8081	0.88892 <.0001	0.69739 0.0002	0.77167 <.0001	0.86749 <.0001	0.98433 <.0001	-0.29415 0.163	0.95057 <.0001	
EoDB	-0.71893 0.0004	-0.76459 <.0001	0.90915 <.0001	-0.8292 <.0001	0.09568 0.6882	-0.85924 <.0001	-0.09512 0.69	-0.75177 0.0001	-0.34141 0.1407	-0.64984 0.0019	-0.78982 <.0001	-0.86885 <.0001	0.53514 0.015	-0.76468 <.0001	-0.80409 <.0001

SJIF Impact Factor (2024): 8.675| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 9 | Issue: 9 | September 2024 - Peer Reviewed Journal

Table 4: Estimation of regression function on India's Productive Capacity Index (PCI).

The AUTOREG Procedure			
Variable	**Variable Label**	**Parameter Estimate**	**Approx Pr > |t|**
Intercept		2.7626	0.0003
FDIRD	FDI-RD	-1.52E-06	0.0383
FDIRDP	FDI-RD Projects	0.000256	0.0011
JFDIP	Jobs in FDI Projects	-5.23E-08	0.1808
HC	Human Capital	0.009327	0.0008
NC	Natural Capital	-0.001827	0.2051
Energy	Energy	0.0112	0.0043
Transport	Transport	0.000767	0.0087
ICT	Information and Communication Technology	0.0135	0.0069
Institutions	Institutions	0.00418	0.0248
PS	Private Sector	-0.002816	0.0648
SC	Sectoral Change	-0.00488	0.0052
IC	Inventor Country	-0.00003	0.0019
Inflation	Inflation	0.003192	0.0136
PUSD	PPP-USD	0.0143	0.01
RUSD	Rupee-USD	0.000233	0.4077
EoDB	Ease of Doing Business	0.001142	0.0066
Dependent Variable		ln Productive Capacity Index (ln PCI)	
Total R-Square		0.9996	

The study has been estimated the regression function particularly a HAC or Newy-west Model from the AUTOREG Procedure using the SAS software. In the above table 4, intercept value is positive and significantly associated with the dependent variable PCI. When all other factors are held constant, there is a statistically significant (0.0008) association between a rise in human capital causes to increase 0.0093 percent in PCI. Energy availability or utilization has a positive impact on PCI, with an estimated value of 0.0112, and the effect is significantly associated (P<0.0043). The P<0.0087 result indicates a significant effect, and increases in the capacity of transport infrastructure are positively linked (0.000767) with PCI.

As higher the Information Communication Technology (ICT) infrastructure or adoption can increase 0.0135 percent in PCI, and this relationship is significant (0.0069). A 1 percent of change in institutional quality was significant at P<0.0248 and shows a positively affects 0.00418 percent in PCI. The 1 percent increase in FDI-RD projects are positively influences PCI at 0.00025 percent was significantly effective (P<0.0011).

Higher inflation rates positively affect 0.0032 percent to the PCI, and it shows a significant (P0.0136) relationship. as price of the products increases at higher demand from the public production activities increases as much as possible to maximize profit rate. Therefore, the 1 percent increase in Purchasing power parity (PPP) in USD positively affects (0.0143) PCI at the significant level of P<0.01). A better score in ease of doing business was significantly (0.0066) associated and positively affects PCI at the rate of 0.00114. The score increases as the country changes to the business-friendly nation, the investment activities boost the productions.

Sectoral change has a significant effect (P<0.0052) but negatively impact (-0.0048 percent) on PCI. Followed by FDI in R&D's shows a significant (P<0.0383) effect but study observed very small negative effects (-1.52E-06) on PCI. As a Inventor country study has observed significant effect (P<0.0019) but shows a small

SJIF Impact Factor (2024): 8.675| ISI I.F. Value: 1.241| Journal DOI: 10.36713/epra2016 ISSN: 2455-7838(Online)
EPRA International Journal of Research and Development (IJRD)
Volume: 9 | Issue: 9 | September 2024 - Peer Reviewed Journal

negative impact (-0.00003) on PCI. The recent innovative active activities of India are helping to the positive growth. The effect of the private sector on PCI is marginally significant under 10 percent (P0.0648) but negatively associated with the PCI (-0.00282). The impact of natural capital, Jobs in FDI Projects, and the exchange rate (Rupee-USD) on PCI is not significant statistically.

With an R-square of 0.9966, the regression model demonstrates a strong explanatory power, meaning that nearly all of the variability in PCI can be explained by the factors that are included in the study. Human capital, energy, transport, ICT, institutions, sectoral transformation, FDI-RD, FDI-RD projects, foreign patents, inflation, PPP-USD, and ease of doing business are other major factors that promote PCI. The majority of these variables exhibit notable effects. The exchange rate, jobs from FDI projects, natural capital, and private sector performance were not important predictors in this model.

CONCLUSION

The study assesses the effects of FDI-RD on economic activities, mainly production in India. Because, the present inventions are helpful to the future production of goods and services, which purely affects the nation's economic conditions. To analyze that study used a panel data set of PCI and other independent variables over 2010-2024. The study has observed an increasing trend in FDI-RD, Patents, and PCI in India, over the last five years which is increasing at an increasing rate. The estimation of the coefficient of correlation analyses the significant strong correlation between PCI and independent variables. The result of the regression estimation, study reveals a significant association between human capital, energy availability, infrastructure, ICT adoption, institutional quality, FDI-RD projects, inflation rates, and ease of doing business in the growth of business-friendly India. However, sectoral change, FDI in R&D, inventor activities, and the private sector have small negative effects on PCI. The regression model demonstrates strong explanatory power, with most factors promoting PCI.

REFERENCES

1. *Cette, G., Fernald, J., & Mojon, B. (2016). The pre-great recession slowdown in productivity. European Economic Review, 88, 3–20. https://doi.org/10.1016/j.euroecorev.2016.03.012.*
2. *European Patent Office: Facts and figures – India. https://www.epo.org/en/searching-for-patents/helpful-resources/asian/india/facts-figures*
3. *fdiMarkets (2023): FDI destinations by R&D activity, 2010–2022. https://www.fdiintelligence.com/content/feature/india-switches-to-rd-82586*
4. *meity.gov.in (2016): The Natonal Intellectual Property Rights (IPR) Policy. https://www.meity.gov.in/writereaddata/files/National_IPR_Policy.pdf*
5. *PIB (2022): Filing of patents increases by more than 50% in the last 7 years. https://pib.gov.in/PressReleasePage.aspx?PRID=1815852*
6. *The Economic Times (2022): Patent filing in India increases by more than 50 percent in 7 years.*
7. *The Indian Express (2024): India climbs six places to 61st rank in network readiness index. https://indianexpress.com/article/india/india-climbs-six-places-61st-rank-network-readiness-index-8278175/*
8. *WIPO (2023): India ranking in the Global Innovation Index 2023. https://www.wipo.int/edocs/pubdocs/en/wipo-pub-2000-2023/in.pdf*
9. *World Bank Group – Prosperity Data 360. https://prosperitydata360.worldbank.org/en/indicator/WIPO+GII+235*

Conflict of Interest

There is no conflict of interest to be declared and the study is greatly thankful to NFST for funding the research work.

Corresponding Author

Nandini**
Research Scholar,
Dept. of Economics,
Vijayanagara Sri Krishnadevaraya University, Ballari