FACTORS INFLUENCING INVESTMENT IN MANUFACTURING INDUSTRY IN KARNATAKA, INDIA

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ABSTRACT: Karnataka is one of the major states which has been pursuing economic reforms to accelerate industrialisation. The state government has been pursuing a progressive industrial policy. It is the endeavour of the state government to improve its ranking in the industrial map of the country and become one of the foremost industrialised states by the turn of the century. In tune with the liberalised New Industrial / Economic and Trade Policy measures announced by the government of India since July 1991, the government of Karnataka has announced its New Industrial Policy and Package of Incentives and Concessions – 1993.

Manufacturing dominates investment proposals that have come to the state. Steel and cement are major industries in terms of investment value. Though Bangalore is known as the software capital of India, the quantum of investment proposed for such projects is small (9 per cent) in relative terms. Karnataka has the best manufacturing process ratio of 2.63 with maximum value of goods being converted into finished goods valuing over Rs. 2,000 crores.

The study analyses the investment determinates and their relationship with investment during periods 1990-2000, 2000-10 and 2010-17 in three phases. The data required is obtained from the secondary courses. The study concludes that the sustainable growth of the manufacturing sector largely depends upon the existence of sound financial infrastructure as a major determinant along with Telecommunication and Land allotment schemes by the govt.

KEYWORDS: Manufacturing, Growth, Industry, Sustainable growth. Rupees (INR).

INTRODUCTION

Manufacturing has emerged as one of the high growth sectors in India. Prime Minister of India, Mr Narendra Modi, had launched the 'Make in India' program to place India on the world map as a manufacturing hub and give global recognition to the Indian economy. India is expected to become the fifth largest manufacturing country in the world by the end of year 2020[*].

Market Size

The Gross Value Added (GVA) at basic current prices from the manufacturing sector in India grew at a CAGR of 4.00 per cent during FY12 and FY19 as per the second advance estimates of annual national income published by the Government of India. In FY19, GVA from manufacturing at current prices grew 12.4 per cent year-on-year to Rs 288.56 trillion (US$ 395.89 billion). Under the Make in India initiative, the Government of India aims to increase the share of the manufacturing sector to the gross domestic product (GDP) to 25 per cent by 2022, from 16 per cent, and to create 100 million new jobs by 2022. Business conditions in the Indian manufacturing sector continue to remain positive.

Investments

With the help of Make in India drive, India is on the path of becoming the hub for hi-tech manufacturing as global giants such as GE, Siemens, HTC, Toshiba, and Boeing have either set up or are in process of setting up manufacturing plants in India, attracted by India's market of more than a billion consumers and increasing purchasing power.

Cumulative Foreign Direct Investment (FDI) in India's manufacturing sector reached US$ 46.62 billion during April 2000-December 2018.

India has become one of the most attractive destinations for investments in the manufacturing sector. Some of the major investments and developments in this sector in the recent past are:

- India's manufacturing PMI stood at 52.6 in March 2019, indicating an expansion. Firms remain confident about strong underlying demand, successful advertising and the receipt of bulk orders, all of which are supporting sales growth.
- As of December 2018, premium smartphone maker OnePlus is anticipating that India will become its largest Research and Development (R&D) base within the next three years.
- As of October 2018, Filatex India, a polymer manufacturer, is planning to undertake forward integration by setting up a fabric manufacturing and processing unit.
- As of August 2018, IISC's Society of Innovation and Development (SID) and WIPRO 3D are collaborating to produce India's first industrial scale 3D printing machine.
- For its Commercial Vehicles, Ashok Leyland is utilising machine learning algorithms and its newly created telematics unit to improve the performance of the vehicle, driver and so on.

Investment Pattern and Government Initiatives

The Government of India has taken several initiatives to promote a healthy environment for the growth of manufacturing sector in the country. Some of the notable initiatives and developments are:

- In October 2018, the Government of India released the draft National Policy on Electronics (NPE) which has envisaged creation of a US$ 400 billion electronics manufacturing industry in the country by 2025. As of December 2018, the government has nearly finalised the policy.
- In September 2018, the Government of India exempted 35 machine parts from basic custom duty in order to boost mobile handset production in the country.
- Government of India is in the process of coming up with a new industrial policy which envisions development of a globally competitive Indian industry. As of December 2018, the policy has been sent to the Union Cabinet for approval.
- In Union Budget 2018-19, the Government of India reduced the income tax rate to 25 per cent for all companies having a turnover of up to Rs 250 crore (US$ 38.75 million).
- Under the Mid-Term Review of Foreign Trade Policy (2015-20), the Government of India increased export incentives available to labour intensive MSME sectors by 2 per cent.

- The Government of India has launched a phased manufacturing programme (PMP) aimed at adding more smartphone components under the Make in India initiative thereby giving a push to the domestic manufacturing of mobile handsets.
- The Government of India is in talks with stakeholders to further ease foreign direct investment (FDI) in defence under the automatic route to 51 per cent from the current 49 per cent, in order to give a boost to the Make in India initiative and to generate employment.
- The Ministry of Defence, Government of India, approved the "Strategic Partnership" model which will enable private companies to tie up with foreign players for manufacturing submarines, fighter jets, helicopters and armoured vehicles.
- The Union Cabinet has approved the Modified Special Incentive Package Scheme (M-SIPS) in which, proposals will be accepted till December 2018 or up to an incentive commitment limit of Rs 10,000 crore (US$ 1.5 billion).

Manufacturing Industry in Karnataka

Karnataka is a land rich in natural resources. Its policy incentives and infrastructure play a significant role in attracting investments for the various industrial sectors in the state. As per the data released by the Department of Industrial Policy and Promotion (DIPP), Karnataka has attracted FDI equity inflows amounting to 20.24 billion US dollars during the time frame of April 2000 to March 2016.

Karnataka is an ideal choice for investment due to a number of reasons. Some of the reasons are as follows:

- **Skilled manpower**: Karnataka boasts of trained human resource in the streams of basic science, engineering, and management.
- **Research and development facilities**: The state has a number of Central Government research institutions and laboratories that provide high-quality research and development facilities
- **Favourable climate**: The climate of Karnataka is favourable for the growth of certain industries
- **Good communication facilities**: The communication facilities in the state are of the first-rate. The state is connected through airports, national highways, broad gauge railway, and sea ports.

Initiatives Adopted by the State Government to Strengthen Manufacturing Industry

The state government is making huge investments to strengthen industrial segment and its infrastructure with the objective to further promote industrial development in the state. By creating industrial clusters, public-private partnership (PPP) projects and SESs, the government is trying to give a boost to the industrial infrastructure scenario existing in the state. According to the Start-up Policy 2016, Karnataka aims to:

- Stimulate the growth of its technology start-ups
- Create around 6,000 start-ups that focuses on products
- Mobilise funds worth about INR 2,000 crores.

A few of the important initiatives by the Government to promote the state as an industrial destination are:

- Under the Karnataka Industrial Policy, 2014-19, the state has come up with a number of fiscal and policy incentives for businesses.
- The state has planned to develop 12 biotechnology schools under the Millennium Biotech Policy

- The state government has sanctioned an amount of 551.32 million US dollars in the 2016-17 budget for the betterment of the state's rural roads
- A SES around 300 acre has been formed in Belgaum in order to create a precision engineering and manufacturing supply chain ecosystem. This will be quite beneficial for the manufacturing industries.

Foreign Investments

Foreign investment approved in Karnataka during 1993-94 brought about 169 foreign investors from Germany, Japan, USA, UK, Switserland and Sweden. They have invested in computer software, telecommunications equipment, electronics and electrical, machine tools and engineering products, medical and laboratory equipment, minerals, ceramics, chemicals, leather products, food processing and tourism.

REVIEW OF LITERATURE

Number of empirical studies exists on the above issue, where few studies used pre-reform as well as post liberalisation data on investment in India. However, the current study is another attempt in a broader dimension, where it comprehensively evaluates the empirical determinants of investment activity. The paper investigates three interrelated core issues: firstly, the role of accelerators and financial variables in influencing business fixed investment across various industrial groups and second, emphasis on the implications of financial sector reforms on manufacturing investment behaviour. Third, the role of equity finance in determining capital expenditure is examined for the post reform period. It is observed that an extensive volume of research works have emerged, both at the theoretical and empirical levels, to counter the above issues. Theoretically, in modeling the determinants of investment behaviour of a firm, five broad approaches are considered; which include the simple accelerator model, the liquidity theory, the expected profits theory and the neo classical theory of investment. One of the first theories of investment and the base for other approaches was the simple accelerator model, (Clarke, 1917) which maintains expected future sales as the main determinant of investment. This acceleration concept hypothesised a direct functional relationship between a rate of change in a flow and additions to a stock, (Meyer. J and Edwin Kuh, 1955). Specifically, additions to the stock of physical capital were considered, as a simple function of the rate of change in output. This model was soon transformed into the flexible accelerator model of investment behaviour (Chenery, 1952 and Koyock, 1954), which states that, the adjustment of capital stock to the desired level is not instantaneous because of delivery lags and delayed responses to changes in the level of demand. They incorporated financial variables along with future sales as the determinant for investment decisions, where they assumed the level of desired capital to be proportional to output. There are other theories, which are propounded as alternatives to the rigid accelerator theory, i.e. Liquidity theory and Expected Profits theory. In the liquidity theory of investment behaviour, desired capital is proportional to liquidity (Jorgenson and Calvin D. Siebert 1968), whereas in expected profits theory desired capital is proportional to profits. The Profits theory holds that the amount of investment spending depends on the amount of profits that firms and industries are making i.e. profit expectations determine investment behaviour. As, against the above investment theories, the neo classical investment path, based on firm profit optimisation, has been most dominant in applied research (Robert. S. Chirinko 1993). There are two major variants of this approach; one is the user cost of capital model, pioneered by Dale Jorgenson (1963), which postulates that output levels and user cost of capital are the two key determinants of investment. The theory of a profit maximising firm, subject to a production function through which a technical relationship between

inputs and outputs get defined is central in the neo classical model. The model assumes flexible accelerator prices and capital markets. The other variant of the optimising approach is the q theory pioneered by Tobin (1969), which incorporates Keynes's analysis of share (stock) price instability into fixed investment volatility. According to Tobin, firm investment opportunities are summarised by the market value of its capital stock. In particular, firm investment expenditure is positively related to average q (also known as Tobin's q) defined as the ratio of the market value of the firm to the replacement cost value of its assets. The use of q is based on the idea that investment opportunities can be captured by equity market.

On the other hand, a vast literature suggests that in addition to real sales growth and the user cost of capital, financial factors are also imperative in explaining short run fluctuations in investment. However, firms first utilise internal funds for investment purposes so as to maintain their control. But, the external finance is also sought for financing their investment plans if the desired rate of growth is higher than that permitted by the internal finance. According to financing hierarchy hypothesis, i.e. Myers (1984) "pecking order" theory of financing , the firm's capital structure will be driven by the desire to finance new investments, first internally, then with low-risk debt, and finally with equity only as a last resort. In contrast, transaction costs or information asymmetries induce a cost premium that makes external finance an imperfect substitute for internal finance. Therefore, in a world of heterogeneous firms, financing constraints would clearly influence the investment decisions of firms. In particular, investment may depend on financial factors, such as availability of internal finance, access to new debt or equity finance, or the functioning of particular credit markets. In the following empirical works we found contradictory views regarding investment determinants. The studies like Dhrymes, P. J. and M. Kurs (1967), Sachs, Reynolds and Albert. G. Hart (1968) investigated the determinants of fixed investment in a broader dimension, where they determined the structure underlying the dividend - investment − external finance triad of decision making process and found external finance activity of firms to be strongly affected by their investment policies. They indicated the considerable relevance of accelerator and profit theories in explaining the empirical behaviour of investment. Krishnamurthy. K and Sastry (1971, 1975), Bhattacharya.S (2008), also argued along similar lines, found the positive effects of accelerator, retained earnings and flow of external finance in determining investment behaviour of Indian manufacturing sector. These studies claim a significant support for the investment −accelerator relationship. Similarly, Bilsborrow E. Richard (1977) analysed the determinants of investment in manufacturing firms with a different institutional and cultural context of a developing country, Colombian firms where along with the accelerator and financial variables he appraised the importance of foreign exchange as a significant influence on annual variation in investment. Recent empirical works, revealed the dependence of investment on financial factors. Hubbard. G (1998) emphasised on the contemporary models of capital market imperfection and the implications of these models in firm's investment process. The study considers the applications of these models to a range of investment activities including research on inventory investment, research and development, employment, business formation, survival, pricing and corporate risk management. However, identifying a specific channel (debt covenants) and the corresponding mechanism (transfer of control rights) through which financing frictions impact corporate investment, Chava. S and Michael. R. Roberts (2008), shows that capital investment declines sharply following a financial covenant violation, when creditors use the threat of accelerating the loan to intervene in management.

Further, the reduction in investment is concentrated in situations in which agency and information problems are relatively more sever, highlighting how the state contingent allocation of control rights can help mitigate investment distortions arising from financing frictions. On the other hand, Cava La, Gianni (2005), Bond. S and Costas Meghir

(1994), explored the impact of financial factors on corporate investment, and indicated the severity of financing constraints of firms. The innovation of the study is that they distinguish financially distressed firms from financially constrained firms. The presence of financially distressed firms appears to bias downwards the sensitivity of investment to cash flow. The paper also explores the effects of cash flow on investment, where the availability of internal funding could significantly affect the investment of financially constrained firms. Real sales and the user cost of capital, which incorporates both debt and equity financing costs, also appears to be an important determinant. In contrast to their views, several studies argued for government intervention in the allocation of investment finance. Emphasising on the implications of the recent structural adjustment policy reforms of 1990s, on investment behaviour Athukorala and Sen (1996) examined the determinants of private corporate investment in India. The results of their econometric analysis suggest that the net impact of the reforms on corporate investment has been salutary. The decline in real public sector investment brought about by the fiscal squeeze carried out as part of the reforms seems to have had a significant adverse impact on corporate investment. However, this adverse impact was outweighed by the salutary effects of the reform process on investment operating through the decline in real rental cost of capital and favourable changes in investor perception in the aftermaths of the reforms. Finally, they indicated the strong complimentary relationship of public investment with private corporate investment in India. The literature reviewed shows that studies are been conducted to analysed investment behaviour in the manufacturing sector and attempts were made to analyse the relationship between investment and its natural and theoretical determents. None of the above literature has made an attempt to analyse the relationship between investment and its actual ground level factors that influence investment in manufacturing sector.

OBJECTIVES OF THE STUDY

1. To find out and analyse the various factors influencing growth of manufacturing sector in Karnataka between 1990-2000, 2000-10 and 2010-17
2. To suggest policy measures for the growth of manufacturing sector in Karnataka

DATA AND METHODOLOGY

The present study is based on the secondary sources of data on various aspects of investment determinants such as Land allotment, Electricity generation, telecommunication, Road and transportation, Water supply, skill development programmes, and banks and financial institutions to support investment in the state.

The Model:

The secondary is collected through various sources of published literature. The data relating to the performance of various factors that influence investment are been used for conducting linear regression analysis. The dependent variable is the Investment in the sector and the indicators have been taken as the independent variables.

Bhagran Sarangi the unstandardized regression coefficients were used in developing the regression model. The regression model is given by,

$y = a + b_1 x_1 + b_2 x_2 + \ldots\ldots\ldots + b_n x_n + $ Standard Error

Where y = dependent variable

$b_1, b_2, ..b_n$ = regression coefficients

$x_1, x_2, .. x_n$ = independent variables

RESULTS AND DISCUSSIONS

Table 1 gives the investment in crores of rupees in the manufacturing sector in Karnataka during 1990-2000. The economic indicators influencing the Investment in manufacturing sector is also given in the above table.

Same data is used for conduction linear regression analysis. The dependent variable is the Investment in the sector and the indicators have been taken as the independent variables.

The unstandardised regression coefficients were used in developing the regression model.

Table 1: Factors Influencing Manufacturing Sector in Karnataka 1990-2000 ($R^2 = 0.931$)

Year	Investments in Rs. Crores	(1) Land Allotment in acres	(2) Electricity Generation in MW	(3) Telephone Connections (in '000)	(4) All roads in Kms	(5) No. of Motor Vehicles (in '000)	(6) No. of Water Supply Schemes Commissioned	(7) Skill Development Programmes (No. of persons trained)	(8) Total no. of Banking Institutions
1990-91	126.28	512.34	2984.60	335	130923	1432.80	8	9347	4273
1991-92	161.40	526.54	3013.60	375	134592	1582.10	11	21625	4284
1992-93	1465.17	685.58	3108.50	434	134592	1718.40	15	42834	4325
1993-94	766.10	591.45	3264.67	508	134832	1875.60	10	25614	4347
1994-95	4410.47	827.32	3474.71	644	135104	2014.10	4	25225	4395
1995-96	2683.11	879.59	3509.74	784	137520	2249.90	4	39622	4444
1996-97	2488.87	1827.39	3538.54	973	137520	2534.40	6	25412	4991
1997-98	5806.38	931.38	3437.40	1228	142801	2804.40	17	32756	4559
1998-99	617.16	410.38	4052.25	1465	144846	3066.20	24	31099	4627
1999-00	17298.33	467.12	4440.14	2254	148589	3351.08	15	20861	4674

Source: Govt. of Karnataka, Directorate of Economics and Statistics

The regression model is given by:

The Regression Model:

$Investment\ Made\ in\ Rs.\ Crores$

$= +111347.551 + 24.051(Land\ Allotment\ for\ the\ Sector\ in\ Acres)$

$+ \mathbf{10.929}\ (Power\ Generation\ in\ Mega\ Watts)$

$+ \mathbf{21.517}(Telecommunication\ Facilities\ in\ thousand\ Nos.) + \mathbf{0.427}\ (Roads\ in\ Kms.)$

$- 15.198\ (Transportation\ Vehicles\ under\ different\ categories\ in\ thousand\ Nos.)$

$+ \mathbf{277.436}\ (Water\ Supply\ Schemes\ Commissioned\ in\ Nos.)$

$- 0.102\ (Skill\ Developement\ Programmes\ for\ No. of\ Persons)$

$- 46.429\ (Financial\ Infra\ like\ Banks, Institutions, Cooperative\ Soceities\ in\ Nos. + 1362.64$

From the above regression model, it is observed that the major indicators which influenced the investments in manufacturing sector are Power generation in the state, telecommunication facilities, Roads in Kms, and water supply schemes commissioned in the state. Because, these indicators are measured by using different units of measurement, it is always good to compare standardised coefficients instead of unstandardized Coefficients. The table 2 gives the standardised coefficients of the indicators along with their relative standardised coefficients.

Table 2 Table 4: Standardised Coefficients 1990-2000 (R^2 = 0.931)

	t Values	Standardised Coefficients (Beta)
(Constant)	0.927	
Telecommunication Facilities (in '000 Nos.)	*3.434*	***2.524***
Land Allotment for the Sector (in Acres)	*2.228*	***1.927***
Power Generation (in Mega Watts)	*1.203*	***0.972***
Roads (in Kms)	*0.478*	***0.456***
Water Supply Schemes Commissioned (in Nos.)	*0.932*	***0.343***
Skill Development Programme – No of Persons	-0.870	-0.191
Transportation Vehicles under different categories (in '000 Nos.)	-2.280	-1.924
Financial Infrastructure (Banks, Institutions, Co-Op Societies) (Nos.)	-2.389	-2.023

Source: Secondary data

From table 2, it is seen that telecommunication facilities in the state has maximum contribution with beta value 2.524. The second contributor is land allotment for the sector with beta value 1.927. The other three indicators contributing to the investment in manufacturing sector are presence of power generation capacity in the state, road infrastructure, and water supply schemes.

The other indicators which are insignificant contributors are Skill development programmes engaged buy the state government, Transportation vehicles and financial infrastructure facilities in Karnataka.

Table 3: Factors Influencing Manufacturing Sector in Karnataka: 2000-2010 (R^2 = 0.997)

Year	Investments in Rs. Crores	(1) Land Allotment in acres	(2) Electricity Generation in MW	(3) Telephone Connections (in '000)	(4) All roads in Kms	(5) No. of Motor Vehicles (in '000)	(6) No. of Water Supply Schemes Commissioned	(7) Skill Development Programmes (No. of persons trained)	(8) Total no. of Banking Institutions
2000-01	7701.09	612.19	4525.14	2257.00	154204	3691.50	11	17628	4718
2001-02	234.04	390.63	4749.46	2592.00	154204	4402.60	14	15765	4709
2002-03	202.68	356.20	5133.48	2753.00	154204	5045.57	25	2968	4704
2003-04	707.87	429.31	5324.65	2752.00	154204	5519.62	28	663	4751
2004-05	2359.14	814.82	5726.74	2785.00	175901	5435.62	12	800	4828
2005-06	31365.28	1135.48	6278.46	2534.00	209014	6220.37	15	940	4962
2006-07	13374.02	1702.23	6562.20	2381.33	215849	6939.71	7	392	5099
2007-08	22931.20	2157.35	5906.48	2610.30	228038	7333.43	10	1248	5280
2008-09	19077.98	2580.07	8424.48	2326.50	228038	8025.15	19	2295	5571
2009-10	113966.28	1705.08	8584.66	2187.80	231032	9043.00	7	679	5790

Source: Govt. of Karnataka, Directorate of Economics and Statistics

From table 3 it can be observed that the investment (Rs in crores) has influenced the manufacturing sector in Karnataka during 1990-2000. The other factors influencing the growth of manufacturing sector and indicators influencing the Investment in manufacturing sector. The same data is used for linear regression

analysis to find the linkage. The dependent variable is the Investment in the sector and the indicators have been taken as the independent variables.

The unstandardized regression coefficients were used in developing the regression model. The regression model is given by,

The Regression Model:

$Investment\ Made\ in\ Rs.\ Crores$
$= -829982.649 - 71.979(Land\ Allotment\ for\ the\ Sector\ in\ Acres)$
$- 11.631(Power\ Generation\ in\ Mega\ Watts)$
$- 32.785(Telecommunication\ Facilities\ in\ thousand\ Nos.) + \mathbf{1.087}\ (Roads\ in\ Kms.)$
$- 15.742(Transportation\ Vehicles\ under\ different\ categories\ in\ thousand\ Nos.)$
$+ \mathbf{238.605}(Water\ Supply\ Schemes\ Commissioned\ in\ Nos.)$
$- 1.343(Skill\ Developemnt\ Programmes\ for\ No.\ of\ Persons)$
$+ \mathbf{194.957}(Financial\ Infra\ like\ Banks, Institutions, Cooperative\ Soceties\ in\ Nos. + 1821.73$

Table 4: Standardised Coefficients

	t Values	Standardised Coefficients
(Constant)	-14.242	
Financial Infrastructure (Banks, Institutions, Co-Op Societies) (Nos.)	*14.409*	***2.212***
Roads (in Kms)	*10.693*	***1.103***
Water Supply Schemes Commissioned (in Nos.)	*1.529*	***0.050***
Telecommunication Facilities (in '000 Nos.)	-5.205	-0.208
Skill Development Programme - No of Persons	-4.219	-0.257
Power Generation (in Mega Watts)	-6.861	-0.477
Transportation Vehicles under different categories (in '000 Nos.)	-4.476	-0.766
Land Allotment for the Sector (in Acres)	-25.753	-1.680

Source: Secondary data

From table 4, it is seen that the financial infrastructure and related facilities in the state has maximum contribution with beta value 2.212. The second contributor is Roads and other physical infrastructure for the sector with beta value 1.103. The other indicates contributing to the investment in manufacturing sector is Water supply schemes which is very essential for any industry to grow.

Table 5: Factors Influencing Manufacturing Sector in Karnataka: 2010-2017 (R^2 = 0.902)

Year	Investments in Rs. Crores	(1) Land Allotment in acres	(2) Electricity Generation in MW	(3) Telephone Connections (in '000)	(4) All roads in Kms	(5) No. of Motor Vehicles (in '000)	(6) No. of Water Supply Schemes Commissioned	(7) Skill Development Programmes (No. of persons trained)	(8) Total no. of Banking Institutions
2010-11	32857.16	1724.19	9699.56	2040.40	231032	9930	10	255	7268
2011-12	10835.69	939.06	12051.00	1951.80	231997	10909	11	451	7885
2012-13	49930.97	1172.26	13934.00	1670.30	231997	11393	8	641	8430

2013-14	21521.28	521.37	14324.00	1535.90	231922	13265	4	4920	9366
2014-15	43073.75	528.29	14616.00	1389.10	240131	14709	7	484	10074
2015-16	29473.92	924.29	15533.00	1294.70	239974	16208	12	1386	10502
2016-17	6341.14	2830.00	13336.86	2500.77	253451	17350	5	6696	8522

Source: Govt. of Karnataka, Directorate of Economics and Statistics

From table 5 it can be observed that the investment (Rs in crores) in the manufacturing sector in Karnataka during 2010-17. The other factors influencing the growth of manufacturing sector and indicators influencing the Investment in manufacturing sector. The same data is used for linear regression analysis to find the linkage. The dependent variable is the Investment in the sector and the indicators have been taken as the independent variables.

The unstandardised regression coefficients were used in developing the regression model. The regression model is given by,

The Regression Model:

$Investment\ Made\ in\ Rs.Crores$

$= +82402.566 + \mathbf{59.847}(Land\ Allotment\ for\ the\ Sector\ in\ Acres)$

$- 4.553(Power\ Generation\ in\ Mega\ Watts)$

$+ \mathbf{165.814}(Telecommunication\ Facilities\ in\ thousand\ Nos.) - 8.674(Roads\ in\ Kms.)$

$- 38.703(Transportation\ Vehicles\ under\ different\ categories\ in\ thousand\ Nos.)$

$- 3578.045\ (Water\ Supply\ Schemes\ Commissioned\ in\ Nos.)$

$- 14.667(Skill\ Developemnt\ Programmes\ for\ No.of\ Persons)$

$+ \mathbf{166.654}(Financial\ Infra\ like\ Banks, Institutions, Cooperative\ Soceities\ in\ Nos. + 4549.49$

Table 6: Standardised Coefficients

	t Values	Standardised Coefficients
(Constant)	1.932	
Financial Infrastructure (Banks, Institutions, Co-Op Societies) (Nos.)	*4.194*	***11.096***
Telecommunication Facilities (in '000 Nos.)	*2.898*	***5.889***
Land Allotment for the Sector (in Acres)	*5.024*	***2.837***
Power Generation (in Mega Watts)	-1.430	-0.535
Water Supply Schemes Commissioned (in Nos.)	-3.504	-0.637
Skill Development Programme - No of Persons	-3.021	-6.314
Transportation Vehicles under different categories (in '000 Nos.)	-5.958	-6.679
Roads (in Kms)	-2.708	-9.351

From table 6, it is seen that the financial infrastructure and related facilities in the state has maximum contribution with beta value 11.096. The second contributor is telecommunication facilities for the sector with beta value 5.889. The other indicates contributing to the investment in manufacturing sector is land allotment which is very crucial.

CONCLUSIONS:

It was found in the study that during the study period the manufacturing sector was highly influenced by the financial infrastructure, power generation, road transport, availability of land. But during the period 2000-10 the crucial power and financial infrastructure were the major setback for the growth of manufacturing sector as the industrial policy deviated its focus from these basic determinates of investment in manufacturing sector. The Industrial Policies must focus on such crucial elements in the coming days. The overall situation also indicate that the policy needs to be diverted towards the other crucial elements such as water supply, land acquisition and allotment, skill development which are again the major factors contribute to the sustained growth of manufacturing units in Karnataka

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