

A survey of research in Industrial Geography in India

V.N. Sharma and Anil Kumar Tiwari, Varanasi - U.P.

Abstract

Though, industries play a dominant role in the development of a country, yet researches on industrial phenomenon, especially in geography can be counted on fingers. Among Indian geographers, it has never been an issue of interest. However, some studies, surely, attract the scholars of industrial geography but there is a lack of specific studies on industrial development. Before independence, a few works were done in the field by Indian geographers who have mainly worked on different themes related to location and distribution pattern of industries, resource base for industries, industrial impact on urbanisation, environment impact, socio-economic impacts, industrial finance, industrial linkages, and analysis of some specific industries. Besides, policy oriented studies, de-industrialisation, impact of globalisation on industrial development and specific studies on sickness of industries and its management, are least accounted for research. The main purpose of the present paper is to outline a survey of researches in industrial geography done by Indian geographers.

Key Words: *Industrial geography, industrial development, globalization, industrial complex, location of industries, industrial growth, industrial policy, industrial linkages, distribution pattern, rural industrialization.*

Introduction

Industrial geography is an important branch of economic geography. After the World War II, the process of industrialization had been started in the most of the developing countries of the world and studies on industrial phenomena had taken place in industrial geography. Clarck (1987), Massey and Meegen (1986), described the industrial geography as regional and industrial economic-geography. Industrial geography has dramatically changed over the past 15 years when the traditional and village industries slowly started to disappear and several new types of industries came into

existence. Besides, small scale industries have also expanded considerably. Due to these changes, the nature of industrial structure has become more diversified and expanded. As a result, most of geographers are attracted towards the studies associated with industrialisation and urbanisation. Later on, studies of industrial location, industrial resource base, inter industry linkages and industrialization and regional development were main concern of geographers. This paper presents a survey of research in industrial geography done by Indian geographers.

Objectives and Methodology

The main objective of this paper is to survey the research work undertaken in industrial geography in India especially by Indian geographers. This survey is mainly based on the literature available/obtained from the books, theses, journals and related web contents. Attempt has been made to make thematic review of literature classifying the words into seven categories i.e., Location of industry, industrial growth, industrial policy, industrial distribution, small scale industry, cottage industry and rural industrialization, industrial complexes, industry and environment and miscellaneous researches.

Location of Industry

Studies of spatial distribution of industries, geographical factors operating in their location and the major features of industrial landscape were, for the first time, systematically analysed in the work of Loknathan (1931). He studied the problems of migration of labour in south India and found that seasonal migration took place mainly from the upland districts to the irrigated deltaic tracts of the Krishna, Godavari and Kavery and to the tea, coffee and rubber plantations in the Nilgiri, Mysore and Kerla. Loknathan (1932) traced important factors of location in the establishment of cotton and jute textile, sugar, iron and steel, paper, cement and heavy chemical industries, and presented a critique on the distribution of industry in India. An attempt was made by Prakash Rao (1941) to understand the role of geographical factors in the location of ship building

industries. These researches were concerned to explain the geographical factors of industrial location and spatial distribution of industrial landscape. However, the first serious attempt to understand the importance of geographical factors in the industrial location was made by Prakash Rao (1942). Ghosh (1946) felt that there was need for decentralization of manufacturing industries for regional development which are concentrated in few regions such as Bombay and Bengal. Kuriyan (1962) drew attention to glaring uneven distribution of industrial activity in the country, as these caused regional economic imbalances. He analysed the present structure of cotton and jute textile and iron industry and suggested measures for expansion of industries in many other areas. Chaudhuri (1962) studied the location and growth of major Indian industries and emphasised upon the appraisal, utilization and conservation of natural resources of West Bengal. Jai Nathan and Bhanumati (1963) examined various aspects of the location and development of manufacturing industries in Poona. Dayal (1964) studied the role of geographical factors in the localisation of iron and steel industry in India. Tiwari (1967) took stock of the current trends of the small scale industries in eastern Uttar Pradesh. Exploring the possibilities of future development in the context of the available raw material and a ready market, he suggested the establishment of a large number of small scale industries in the region. Patni (1969) studied the factors affecting location of selected Indian industries and presented a review on change in this pattern from 1950 to 1965. Mukherjee (1970) analysed various aspects of recent

industrial development in Chhotanagpur region. He also appraised the coal and iron ore resources for industrial development. Chaudhuri (1970) explained various aspects of distribution and development patterns of Indian industries and highlighted influences of economic and geographical factors on determination of locations of industries. Mandal (1971) focused salient aspects of the manufacturing regions in north Bihar. Sinha (1972) studied the industrial landscape of the highlands of Chhotanagpur plateau region. Upadhyay (1972) worked on appraisal of resources and development of industries in Gangapar region especially Mirzapur district (Uttar Pradesh). Shirokov (1973) focussed on problems and prospects of industrial development in India. Sharma (1973 a) studied in detail about various aspects and issues concerned with the location and distribution of industries of Chhattisgarh region in Madhya Pradesh. Singh (1975, 1978) presented the impact of electrification on agricultural and industrial development of the Rihand Grid Area. He studied the role of electric facility on transformation of agriculture and industry in grid region. Singh (1979, 1983) focused on spatio-temporal aspects of development of industries and identified the categories of high, medium and low industrialized districts of eastern Uttar Pradesh. Kayastha and Singh (1979a) presented a geographical review of spatial distribution of manufacturing industry in Uttar Pradesh. Gopi (1980) analyzed and identified correlation between urban growth and industrial locations in Indian context. Sharma, (1980) explained industrial resource base and location factors for industrial

development of Andhra Pradesh. Singh (1980 a) studied the evolution of industrial landscape and development in Eastern Uttar Pradesh. Sita (1981) evaluated the role of transportation in industrial development in the urban areas in South Konkan. Tripathi (1981) explored salient features of the location and distribution of large scale industries in Orissa. Gatade (1982) discussed various aspects of industrial geography of the Konkan (Excluding Bombay City). Pandey (1983) traced out the development and localisation of large scale industries in Chhotanagpur plateau. Mishra (1984) studied the industrial development and location patterns of industries in Gorakhpur division, Uttar Pradesh. Singh (1985, 1985a) analysed the effect of geographical factors and regional characteristics of industrial development in India. Surendra (1986) explained the industrial efficiency and various aspects of growth of Indian industries. Sharma (1987) explored the salient features of industrial development patterns in Madhya Pradesh. Singh (1989) focused on the spatial distribution of manufacturing industries in India. Singh (1989 a) worked on industrial development of Maunath Bhajan and Mubarakpur towns in Azamgarh district (U.P.). This dissertation focused on cotton, spinning, agro-based, forest based, chemical and handloom industry and their problems and related issues. Pandey, (1991) worked on the geographical analysis of industrial development in Uttar Pradesh. Tiwari and Tripathi (1991) studied in detail and prepared a plan for industrial development for Gorakhpur district (Uttar Pradesh). This study focused mainly on the problems of

capital, raw material and sickness of agro-based industries. Nasir (1991) examined the problems and prospects of handloom industry in eastern Uttar Pradesh. Singh (1992) analysed the impact of industrialisation in creation of regional imbalance in rural areas of Uttar Pradesh. Nasreen (1993) studied facts of the industrial development of Lucknow-Kanpur axis. Sinha and Singh (1993) edited the works of some geographers in the 'perspectives on industrial development in India'. Basically, this book was a proceeding of an international seminar which was organised by department of geography, Banaras Hindu University. Rao (1995) examined the industrial development of Karnataka. Singh (1996) discussed salient aspects of structure, growth and dispersion of industries in Lucknow city. Singh (1997 d) submitted his thesis on the industrial development pattern in Lucknow City (Uttar Pradesh). Singh (1997 a) attempted to map the structure of industries and industrial development in district framework. Singh (1997 b) studied the role of accessibility of transport and communication facilities in the development of industries and regional development in Champaran district (Bihar). Singh and Singh (1998) examined salient features of linkages between different industries and relationship with concerned resources. He also focused on the capitalist behavior in Lucknow city with especial reference of industrial setup. Sharma (2001) attempted to assess and examine the significances of raw materials, infrastructure, and spatial distribution of workers in development of industries. He further worked out industrial potentialities of Madhya Pradesh. The study proposed the

plan for industrial development of the backward state. Das (2001) reviewed the policies of liberalization and its impact on industrial development in India. Singh (2001) focussed on the patterns of industrial development in Lucknow city. Singh (2001 a) analysed the salient features of industrial development and its multiplier effects of Faridabad- Sonapat- Bhiwani triangle in Haryana. Kumar (2002) examined the impact of politics on industrial landscape of Haryana. Sharma (2002) studied the different aspects in industrial development of Madhya Pradesh. Sharma (2002 a) presented a chorological analysis of evolution and development of industries in Madhya Pradesh. Sharma (2004 a) examined the level of industrial development in Madhya Pradesh on the basis of units, investment and employment. Singh (2008) focussed the impact of road transport especially National Highways on the industrial development in Uttar Pradesh. Singh (2009) analysed the impact of industrial activities on water quality of Govind Ballabh Pant Sagar. Mishra (2010) worked out the various aspects of industrial development and potentials in Chhattisgarh state. He also presented an appraisal of resource base for industrial development in this region. Tiwari and Sharma (2011) attempted to examine the level of agro-based industrial development of eastern Uttar Pradesh. They calculated levels of industrial development in districts of eastern Uttar Pradesh on the basis of units, investment and employment.

Industrial Growth

Many geographers have studied the growth and development of industries in different

parts of India. Sengupta (1958) worked on intricate factors of industrial growth in the Hoogly region of West Bengal, where concentration of industries has been at the cost of Bihar and Orissa. Gupta (1967) traced the remarkable industrial growth of Faridabad during first decade of independence due to supportive nature of the concerned government. He noted that many problems, including shortage of labour, power supply and transport had proved detrimental to a steady growth. Sinha (1968) analysed the state of growth of industries in Bihar that contribute a poor share of 7% of state economy. Prasad (1980) studied the level of industrial development in India giving reasoned account of its causes and consequences. Chaudhuri (1981) has described the performance and problems of public sector industries in India. Singh (1983 a) explained in detail different processes and patterns of industrial landscape in Madhya Pradesh. Thiagarajan (2010) assumed the growth opportunities and challenges of market size and avenues for growth of air conditioning industry in India.

Industrial Policy

Singh (1969) classified the industries on the basis of export and attempted to highlight functional relationships of industries with the process of economic development. Vakil (1973) presented a review on policy and problems of industrial development in India. Kalipada (1987) reviewed the Indian public policy and the industrial economy of India since independence. Indrajeet (1987) presented an assessment on impact of government policies on industrial development in Eastern Uttar Pradesh.

Sharma and Sharma (1991) discussed various aspects of the industrial structure and policies implementation in Madhya Pradesh. Singh (1993) suggested certain measures and strategies of industrial development to reduce the industrial imbalances in Uttar Pradesh. Singh (1997a) studied the impact of liberalization on the development of small scale enterprises in India. Singh (1997b) attempted to reveal correlates of uneven industrial development and economic liberalization in India. Khan (1997) discussed the impact of different State policies in the development and distribution of industrial landscapes of Maharashtra. Kumar (2001) analysed the regional impact of licensing of liberalization and industrial policies on the development of many industrial centres in Uttar Pradesh, such as NOIDA (New Okhla Industrial Development Authority), Greater NOIDA (Greater New Okhla Industrial Development Authority), GIDA (Gorakhpur Industrial Development Authority) and SIDA (Satharia Industrial Development Authority, Jaunpur) and presented their comparative merits and demerits. Maurya (2001) studied the impact of liberalization policy on industrial development in the Rohilkhand plain (Uttar Pradesh). Taneja et al (2007) focussed the concentration on industrial Policy and Reform as a total productivity factor for the Indian manufacturing sector. Shivramkrishanan (2007) analysed implications for policy structure of market for Indian small scale industrial sector.

Distribution of Industries

Agro-based industry was the main concern in this category of research. The cotton

textiles and jute industries are among the oldest and the most developed of the agro-based industries in India. Iyengar (1930) presented a study on the distribution and development of cotton textile in Coimbatore. Loknathan (1936) presented a comprehensive study of prevailing trends of growth and spatial distribution of cotton mill industry in some areas namely Bombay and Calcutta. Narayanswami (1941) also presented a study on cotton industry of Coimbatore. Singh and Pannu (1957) explained the relationship between agriculture and industrial development in Saryupar plain. Majid (1959) discussed prospects and problems faced by silk industry. He studied the production capacity of domestic silk mills and weavers socio-economic conditions of Bihar. Shahi (1960) completed his doctoral dissertation on the agro-industrial interrelations in Saryupar plain. Basu (1961) traced different problems related to Jute industry in West Bengal. Sengupta (1961) studied vivid account of geographical factors affecting jute agriculture and jute industry in India. His work mainly focused the Bengal jute region. Pannu (1962) focused on the relations between agriculture and industry in Saryupar plain. Dikshit (1963) has discussed the growth and development of paper industry of India with special reference to its spatial distribution and factors of localisation. Gopal (1964) presented a valuable history of sugar industry from ancient period and its changing form of processing in India. Mishra (1965) presented an image of sugar mill structure in Deoria district. Mahadev and Ramesh (1967) analysed the prospects of hotel industry in Mysore city and its

attributes of spatio-temporal distribution. Khan (1967) analysed the major geographic conditions and aspects of tea industry in India. Benerji and Basu (1968) focused their attention on factors contributing to cotton textile industry in India. Gupta (1971) studied factors of evolution, structure and development of silk industry in Varanasi city. Sinha and Kumar (1971) presented a comparative study of silk industry in Bhagalpur and Mushirdabad. Gosal (1974) studied the factors of development and problems of silk industry in Mushirdabad district, West Bengal. Singh and Ray (1975) studied the impact of sugar industry in the living standards of rural people and as well as whole economy of Uttar Pradesh. Singh (1980) introduced varied aspects of patterns of development and potentials of sugar industry in Eastern Uttar Pradesh. Singh (1981) has attempted to reveal major problems of the weavers and entrepreneurs engaged in handloom industry of Ghazipur district. Mahajan (1983) has discussed the growth of agriculture and industry in India and established correlation between each other. Gowda (1984) submitted his doctoral thesis in Mysore University on the topic 'Geo-economic problems and prospects of sugar industry in Karnataka. Murthy (1988) analysed industrial sickness and presented an idea for reworking of sugar industry in Karnataka. Singh (1988) has discussed the integration of agriculture and industrial development as a model which helped in a wide range of rural development in Indian condition. Singh (1993 a) studied the development and distribution of textile industry and its impact on socio-economic development of

Azamgarh district (U.P.). Mishra (1999) has explained correlation between agriculture and industrial development highlighting problems and prospects of agro- industrial development in backward economy in Vaishali region. Arya (1999) studied the process of rural development through agriculture-based industries in Malwa plateau, Madhya Pradesh. Pandey (2000) submitted his doctoral thesis in Gorakhpur University on the theme “problems and prospects of agro-based industries in eastern Uttar Pradesh”. In his thesis, he discussed in detail about problems of sugar industry with a micro study of Kushinagar district. Rai (2001) analysed the structure, capital investment and financial institutions of sugar industry in Uttar Pradesh. Fatma (2002) worked on supporting factors towards development of agriculture-based industries of Madhya Pradesh. Pandey and Sharma (2004) studied the level of development, problems and planning of agro based industries in eastern Uttar Pradesh. Upadhyay (2004) discussed about identity, way of life and enlistment of the cotton mill workers of Bombay (undivided Maharashtra and Gujrat) from 1890 to 1919 and its effect on economy of the region. Sharma (2006) analysed the distribution of agro-based Industries in Maharajganj district. Singh et al (2007) presented a study on efficiency of sugar industry in Uttar Pradesh, as a key for energising rural economy. Pandey (2007) presented the case of sugar industry as one of the strong bases for rural India. He discussed history of development of sugar industry contributions of major scholars in this field, sugar policy, raw materials, production, export, import and domestic

consumption, its critical assessment and challenges ahead. Singh (2007) studied the appraisal of sugar mills highlighting its factors/components such as ownership, size and location etc. in Uttar Pradesh. Singh, et al (2007) attempted to make an estimation of economic efficiency as a production function approach of sugar industry in Uttar Pradesh. They found that sugar industry is a lead industry of this state. Damodaran and Singh (2007) presented a broad icon of rise, decline and revival of sugar industry of Uttar Pradesh. Sharma (2007) made an assessment of the impact of agro-based industries on rural development in Maharajganj district, Uttar Pradesh. In this study, he tried to correlate the development of agro-based industries with life standard of rural people. Gaik, et al (2007) presented a centrographical analysis on the locational pattern and determinant factors of sugar industry in Maharashtra. Sanyal, et al (2008) also discussed generic factors about sugar industry of India. Padmanabhan and Nagarajan (2008) worked on world wide sugar industry with special indication to Indian perspective. Murugadoss and Pandiyan (2008) appraised reduction capacity of Indian sugar mills and indicated valuable suggestions for its improvement. Shelke and Degaonkar (2008) analysed the correlation between agricultural surplus and growth of agro-processing industries in rural India. Kumar (2008) introduced the concept of multi-difficulties of sugar industry in India. Singh (2008 a) studied the role of agricultural surpluses in localization of agro based industry in Jaunpur district. Vishwakarma (2009) presented a case study on industrialization and regional

development with special reference of loom industry in Azamgarh division, Uttar Pradesh. Kumari (2009) studied various dimensions of development and prospects of agricultural-based industries in Begusarai district, Bihar. Kumar and Kumar (2009) discussed the problems of sugar industry in Bihar and gave some vital recommendations for its revival. Bisht (2010) published an article on problem of plenty of sugarcane for sugar industries in Uttar Pradesh. Dwivedi (2010) presented an empirical study on operational efficiency and profitability measurement of *Gur* (Jaggery) industry in India. Vishwakarma and Sharma (2010, 2011) studied the distribution, problems and prospects of loom industry and its effect on quality of life of weavers in Azamgarh division.

Distribution of mineral-based industry was studied by several geographers. Ganguli (1949) studied iron and steel industry of Bengal and Bihar industrial belt mainly concentrated in Chhotanagpur plateau region. Krishnan (1952) emphasised the role of geographical factors such as proximity to raw materials and power in the location of mineral-based industries with reference to iron and steel industry. Dayal (1958) noted the new trends in the development of aluminium industry that is mostly power and mineral based. The study revealed that the inadequate supply of cheap hydropower was the main factor which hampered the full utilization and growth of the existing capacity production of the plants and growth prospects of the industry. Jhonson (1966) focussed on the development and problems encountered by steel industry in India. Thapan (1967) presented a comparative

study on manufacturing industry of steel towns namely Jamshedpur, Bokaro and Bhilai. Basu (1972) studied the development of the Integrated Iron and Steel Industry of India. The geo- economic analysis includes the state of industry of time and its future prospects. Sharma (1973) focussed on the appraisal of mineral resource and prospects of industrial establishment in Chhattisgarh region, Madhya Pradesh. Chaubey (1975) made a study on Bhilai steel project and its impact on the towns of Chhattisgarh. Mathur (1991) presented a valuable study on problems of child labours in gem (stone) polishing industry of Jaipur city.

Small, Rural and Cottage Industries

A significant feature of the Indian economy, since independence, is the rapid growth of the small scale industry sector. Industrial Policy Resolutions of 1948 and 1956 considered the cottage and small scale industry for creating additional employment opportunities to semi-skilled and skilled labour with low capital investment. Small and medium enterprises play crucial role in socio-economic development of working class people of our country on account of their inherent advantages namely low capital requirement, employment generation, decentralization of industrial activity, utilization of locally available resources and widening of entrepreneurial base. Rao (1930) described the cottage industry in Coimbatore region which included handloom, carpet, khadi and metallic industry. Sinha (1960) studied salient characteristics of small and medium scale industries in Orissa. Pal (1974) studied the issues of development

and prospects of mini steel plants in northern India. Bhattacharya (1980) explained nature of rural industrialization and associated problems in India. Mishra (1985) worked on rural industrialization in Third World countries with special reference to India. Rangaswamy (1985) described the impact of industrialization on rural habitat transformation in Baroda taluka. Vishwakarma (1991) studied the impact of industrialisation on tribal ecology in Jamshedpur and its environs. This study presents a critical analysis of transformation of life style of tribes due to sprawl of Jamshedpur industrial complex. Singh (1994) examined the Role of small scale enterprises in development of developing countries with focus on India. Yadav and Gupta (1996) analysed the prospects of economic development through rural industrialisation in Ganga plain with an indepth case study of Hardoi district, Uttar Pradesh. Fatima (2000) explained the process of economic development and prospects of quality of life through cottage and small scale industries in Gorakhpur. Navaneetha (2007) described the growth and development of Indian small scale industries particularly in Tamilnadu. Reddy (2008) studied the different problems and prospects of small scale industry in India. Tikendrajit and Ningombam (2008) explained the impact of globalization on the development of small scale industries in India considering assessment of banking finance. Thakur (2010) studied the three stage programmes, early international cooperation, technology development, opportunities and challenges of nuclear power for domestic industries in India.

Industrial Complex

Ahmed (1956) identified major industrial zones of India and proposals for future industrial needs. Sinha (1968) reviewed the modern trends of development of industries in Ranchi manufacturing complex and traced the role of geographical condition in the industrial setting. Chaudhury (1972) presented a systematic study of the pattern of growth and problems of industrial complexes in India. His study basically oriented on industrial complexes of Bihar state. Singh (1974) made a survey of recent distribution of industries in the Dalmianagar Industrial Complex and factors affecting their localisation. Singh (1980 c) identified the industrial complexes in Bihar that are located at Jamshedpur, Ranchi, Sindhri, Bokaro, Dalmianagar and Barauni. Singh (1979) delineated industrial regions of eastern Uttar Pradesh. Singh (1980 b) studied salient features of the industrial landscape of Mirzapur district. Singh (1982) revealed the major structural characteristics of the Jamshedpur Industrial Complex working as a pull factor for manufacturing industries in this area. He found that Jamshedpur steel plant was not only a pull factor for employment but for other ancillary industries too. Singh and Singh (1988) presented historical development of Bhilai town as a growing industrial complex. Singh (1990) studied structure of Bhilai industrial complex. It is working as a pull factor for manufacturing industries in this area. Sharma (1993) presented the spatio-temporal analysis of industrial clusters in Madhya Pradesh. Singh (1995) examined the role of industrial estates in creation and destruction of local environs in India.

Sharma (1997) has studied the correlation between industrial complex and regional development of Bhilai Industrial Complex. According to him Bhilai industrial complex played an important role in the development of surrounding areas. Sharma (2004) presented a theoretical review of industrial complexes and their role in the process of regional economic development.

Industry and Environment

Not much works are done by Indian geographers in this field but some are certainly appreciable. Chakravarty (1974) presented a review of environmental conditions of cotton textile industry in West Bengal. Lahiry (1996) analysed the impact on the environment due to industrial development in Chhattisgarh region of Madhya Pradesh. Singh (2000) presented an assessment of industrial impact on environment of Sonbhadra district. Ghose, and Kumar (2004) identified variety of mining operations and mining techniques to minimize environmental impact, which can not be standardized and no single element of mining can minimize environmental impacts. Solomon (2005) studied the appraisal of environmental pollution and its management in sugar industry in India. Saha, Balakrishnan, and Batra (2005) identified innovative ways to reuse segregated wastewater and appropriate system to reduce water use in distilleries. Sharma and Manvi (2009) analysed the environmental impact of agro-based industries in Gorakhpur division. Tiwari and Sharma (2010) studied the impact of sugar industry on environment in Eastern

Uttar Pradesh. Khan and Vyas (2008) studied the impact of Brick industry on environment and human health in Ujjain city.

Miscellaneous Researches

Tourism-based, forest-based, entrepreneurs, environmental concerns etc. are other field of research in industrial geography. Kayastha (1956) explored the prospects of tourist industry of three Himalayan Beas basin tourist cities Kangra, Kulu and Mandi in India. Singh (1965) examined the industrial economy of Punjab and suggested measures for development of forest-based industries in the state. Chaudhuri (1966) analysed the impact of industrialization on rural and urban life in India. Singh (1978) presented an account on spatial analysis of employment in manufacturing sector as well as utilization of human resources in eastern Uttar Pradesh. Singh (1979 b) submitted his doctoral thesis on the topic 'Industrial Geography of Kanpur city'. Singh (1981 a) worked extensively on tourist and tourism-based industries in Uttar Pradesh. Singh (1984) presented a survey based study on the impact of Ramnagar industrial area on local environs. Pathak (1984) made a review of literature on Industrial Geography. Singh (1985) analysed the industrial development in western Uttar Pradesh. Singh (1988) studied and examined the role of industrial development in the urbanisation. Singh (1989 a) examined the need of industrial development in regional development strategy through a case study of Kerala state. Sinha and Singh (1989) studied different dimensions in the development of this discipline. Mishra (1991) has analysed the

role of entrepreneurs in sickness of Indian industries. Shila Kumari (1995) studied the correlation between industrialization and eco- development of Chhotanagpur. Sharma (1998) has tried to correlate the processes of industrialization, development and quality of life of Madhya Pradesh. Narayanan (2004) has correlated technology acquisition to growth of firms, with special reference to Indian automobile sector under changing Policy Regimes. Mathur and Kalia (2005) discussed in detail the fundamental concepts linked to industries. Khatun (2005) focused light on the impact of industrial development on quality of life in Gorakhpur region. S. Sharma (2006) presented a study on productivity performance and growth accounting analysis of automobile industry in India. Sengupta and Neogi (2009) explained the industrial efficiency and growth of new Indian Economy. Gupte (2011) has focussed attention on development and prospects of information technology industry in India.

Conclusion

Major trends of research in industrial geography have been to analyse the variety aspects of distribution of industries on a regional basis and to delineate major industrial zones of country side. The region which received the serious academic attention includes Bihar, West Bengal, Orissa, Eastern Uttar Pradesh, Madhya Pradesh, and Maharashtra. Industrial structure, problems and prospects of growth and development of industries in a number of states such as Madhya Pradesh, Punjab and Andhra Pradesh were major focuses of

study among Indian geographers. Among the metallurgical industries, the iron and steel industry has attracted more attention of geographers. Most of these studies focused on the location and development of industries. The portion of West Bengal, Bihar, Orissa and Madhya Pradesh were core of the country for public sector iron and steel industry, while the cotton textile industry has been studied in detail on a regional as well as national basis. Jute, woollen and other textiles industries have so far failed to inspire the geographers. Tea, coffee, rubber and processing industries attracted interest of geographers for study of distribution pattern and problems of these industries. A few geographers have given attention to the problems and prospects of sugar industry, both on a regional as well as a country basis. The problems of the forest-based industry, basically paper have been studied by geographers in detail. The review reveals that only a few geographers were free from the attraction of economic theories of industrial location rather than the real geographical factors. However, the contributions of some Indian geographers have significant role in the careful planning of industrial location with a distinct regional basis. Under the impact of globalisation, industries are now diverting, adjusting and moving towards global demands and diversifying their production under open market. Advantages and issues of footloose eco-friendly and interregional linkages in material as well as technological flow have made their bearing on global scenario. These aspects should be widely considered by new generation of researchers in geography. There are large and serious gaps in the study

of industrial geography that need immediate attention. A large programme of research based on new techniques, will have to be promoted to highlight the contribution of geographers in the planning of industries in India.

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V. N. Sharma
Professor,

A. K. Tiwari
Department of Geography
BHU, Varanasi