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Urbanisation and Development: A Comparative study of India and China

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Abstract

India and China both developing countries combine to constitute 1/3 of the world population. Population growth is a major factor of urbanisation in India and China. The growth of urbanisation is linked with the process of economic development. The objective of this study is to examine the relationship between urbanisation and development in India and China. The study is based on secondary data which is collected from World Development Indicators, Economic Survey and Human Development Report etc. Averages, Least Square model and Correlation have been used to confirm the hypothesis of a positive link between urbanisation and development in India and China. The study concludes that Industry and Service sector have been the two main growth engine of India and China. There is a weak relationship between Urbanisation and development in India comparative to China. Government should implement various policies that provide the benefits of increased urban population.

Keynotes: India, China, Urbanisation, Development.

Introduction

The growth of urbanisation is linked with the process of economic development which in turn affects the developing countries like India and China. Over the past 35 years, cities in India and China have changed dramatically. Many studies reveal that urbanisation should have a positive impact on economic growth. Education and health capital can influence economic activities through development of new technologies, expanding labour productivity and to adopt existing technologies. Health care system and other facilities like transport, water, internet and electricity are more developed in urban areas than in rural areas. Some studies suggest that there is an inverted 'U' shape relationship between urbanisation and economic development.[1] The effect of urbanisation on economic activity depends on many factors like level of urbanisation, nature of economic activities and stage of urbanisation. In the first stage, urbanisation improves economic growth. In the second stage, rapid urbanisation is negatively correlated with economic growth.[2] Cities provide better technology, transport, infrastructure, knowledge etc which are highly beneficial to labour productivity. The development of a country can be estimated on the basis of better living standard, high literacy rate, high rate of saving and investment.GNP, health facilities, better education system, employment opportunities, safe drinking water, more industries and per capita income etc are the more important factors for economic development.

[1] Henderson,V.(2003). The urbanization process and economic growth, the so what question, journal of economic growth. 8,47-71
[2] Alam,S. Fatima, A., and Butt, M.S.(2007) sustainable development in Pakistan in the context energy consumption demand and environmental degradation, journalof Asian economics, 18(5), 825-837.

Asian Development Bank (1996) argued that there is well established correlation between development and level of urbanization in Asian regions. In the last 10 to 20 years the countries that have urbanized rapidly are generally those with most rapid economic growth.[3]

Over the past decade, improvement in infrastructure, water supply, sanitation etc has taken place both in rural and urban areas. The proportion of the population having access to safe drinking water is rising from 56.1 and 97 percent in 1990 to 91.5, and 97.5 percent in 2014 in rural and urban areas of China.

Urbanisation

Urbanisation is defined as "the demographic process whereby an increasing share of the national population lives within urban settlements".[4] In other words, "urbanisation has been a key force in human and economic development".[5] During the industrial revolution urbanisation began, when workers moved towards manufacturing hubs in cities to obtain jobs in factories as agricultural jobs became less common.

Development

Economic development means the overall growth of various sectors of the economy. It is a multidimensional process involving the reorganisation and reorientation of entire economic and social systems. It involves improvements in income and output, social, institutional and administrative structure, population, attitudes, customs and beliefs.[6] In less developed countries, economic development is a interrelated process with rise in economic productivity, real income, slow down in the rate of population growth and fertility. Economic development means "improvement in country's economic and social conditions". It refers to improvement in way of managing an area's natural and human resources.[7]

Objective: The objective of this paper is to examine the relationship between urbanisation and development in India and China.

Hypothesis: There exists positive relationship between urbanisation and development in India and China.

Methodology: The study is based on secondary data from 1980 to 2014 (35 years) which is used from Human Development Report (HDR),World Development Indicators (WDI), Economic Survey, Asian Development Bank (ADB), Statistical Yearbook of Asia and China, reports, research papers etc. The data on the HDI is collected from the 2014 Human development Report online database. Statistical tools like average, least square regression model, correlation have been used to confirm the hypothesis of a positive link between urbanisation and development in India and China.

[3] ADB, "Mega City Management in the Asian and Pacific Region: Policy Issues and innovative Approaches ", (1996), in proceedings of the regional seminar on Mega City Management in Asia and Pacific:ADB.

[4] Ports.D (2012) "Challenges the myth of Urban Dynamic in SSA: The Evidence from Nigeria" World Development vol.40 (7). Pp 1382-1393.

[5] Bairoch.P (988) Citistoryies and Economic development: from the dawn of history to the present, the university of Chicago press.

[6] Todaro,M.P., Smith,C.S.(2006). Economic development. pearson Addison Wesley, p110.

[7] Shah Shelly, Development: Meaning and Concept of Development

Urbanisation trends in India and China

The most populous countries of the world, India and China both combine to constitute 1/3 of the world population. Population growth is a major driving factor in urbanisation of India and China. In 1950, 17 percent of the population in India lived in cities compared with China (13 percent). India was a more urban nation than China. But from 1950 to 2014, China urbanized far more rapidly than India, to the rate of urbanisation 54 percent, compared with 32 percent in India. Cities play an important role by offering opportunities for health services, education and employment in the economic and social fabric in India and China. Since the adoption of economic reforms in 1978, the economic performance of China has been dramatic in terms of welfare, poverty reduction and HDI. On the other hand, the growth performance of India (largest democracy and second most populous country in the world) has been relatively modest since the initiation of economic reforms in 1991. The table represents exponential growth rate of population in India and China.

Table.1 Growth of population in India and China

Year	India (%)			China (%)		
	Rural	Urban	Total	Rural	Urban	Total
1980-84	2.0	3.4	2.3	0.5	4.7	1.4
1985-89	1.8	3.1	2.1	0.7	4.5	1.6
1990-94	1.6	2.8	2.0	0	4.5	1.3
1995-99	1.4	2.5	1.7	-0.5	4.0	1.0
2000-04	1.2	2.8	1.6	-1.5	4.2	0.7
2005-09	0.9	2.5	2.8	-2.0	3.5	0.6
2010-14	0.6	2.4	1.3	-2.2	3.0	0.6
1980-14	**1.4**	**2.8**	**1.7**	**-0.4**	**4.2**	**0.9**

Source: World Development Indicators 2014

Table shows that growth rate in urban population of China is higher than India. If we compare the growth of urban population from 1980 to 2014, China ranks first i.e.4.2 percent population is living in urban areas because of rural urban migration, industrialisation, modernisation and development of infrastructure and transport facilities. But, the percentage share of urban population in India is low (2.8 percent). There are mainly three components of urban population growth: natural growth of urban population, rural urban migration and the reclassification of areas. The main reason of rapid urbanisation or increase in the number of people from rural to urban areas is economic opportunities, industrialisation and modernisation. Cities provide more opportunities for having housing, education, employment and market place competition.

Relationship between Urbanisation and Development

Urbanisation can be regard as an index and stimulant of economic development. On the one hand, urbanisation indicates minimum development opportunities for non-agricultural employment, urban population cannot exist without means of livelihood. On the other hand, for the expansion of non-agricultural activities, the growth of cities provides manpower.

(A) Urbanisation and Health

Urbanisation reduces maternal, infant and under five mortality rate. Life expectancy at birth is higher in China than in India in all data (1980-2014). There is a negative relationship between urban population share and mortality rate. The mortality rate decreases as urbanisation increases. Some argue that if urbanisation is unplanned and rapid, then the status of the people is badly affected by it because of insufficient housing, poor sanitary conditions and crowding which can accelerate the

spread of diseases.[8] Mortality and fertility rate in China are much lower and life expectancy rate is much higher than those of India. Maternal, infant and less than 5 mortality rate in China is better as compared to India. In 2014, maternal mortality rate is estimated per 100,000 live births are 28 in China against 181 in India. The level of Urbanisation provides opportunities for improvements in health of people in India and China (such as access to improved health care and basic infrastructure) and substantial health risks including air pollution, occupational and traffic hazards, and the risks conferred by changing diets and activity.

Table2. Health indicators in India

Year	Level of urbanisation	Life expectancy	Maternal mortality rate (Per 100,000 Live births)	Infant mortality rate (Per 1000)	Under 5 mortality rate (Per 1000)	Physicians (per 1000 people)	Nurses and midwives (per 1000 people)	Health expenditure (% of GDP)
1980	23	55	*	114	168	*	*	*
1985	24	57	*	101	145	*	*	*
1990	26	59	560	88	162	*	*	*
1995	27	60	460	78	109	*	*	4.02
2000	28	62	370	67	91	*	*	4.26
2005	29	64	280	56	75	0.6	1.3	4.28
2010	31	66	190	46	60	0.6	1	4.29
2014	32	68	181	39	50	*	*	4.68

Source: World Development Indicators 2014 and 2015

***represents data is not available**

Table3. Health indicators in China

Year	Level of urbanisation	Life expectancy	Maternal mortality rate (Per 100,000 Live births)	Infant mortality rate (Per 1000)	Under 5 mortality rate (Per 1000)	Physicians (per 1000 people)	Nurses and midwives(per 1000 people)	Health expenditure (% of GDP)
1980	19	67	*	48	62	*	*	*
1985	23	68	*	42	54	1.3	*	*
1990	26	69	97	42	54	1.6	0.9	*
1995	31	70	76	38	48	1.6	*	3.52
2000	36	72	63	30	37	1.7	1	4.59
2005	43	74	50	20	24	1.3	1	4.65
2010	49	75	32	14	16	1	1.5	4.88
2014	54	76	28	10	11	*	*	5.54

Source: World Development Indicators 2014 and 2015

***represents data is not available**

China has been remarkably successful in achieving its maternal and child health goals. Total health expenditures rose from 4.02 percent, 3.52 percent in 1995 to 4.68 percent, 5.54 percent in 2014 in India and China.

[8] Godfrey, R. and M. Julien. (2005). Urbanisation and Health. Clinical Medicine 5(2):137–41. Moore, M., P. Gould and B.S. Keary. (2003) Global Urbanisation and Impact on Health. *International Journal of Hygiene and Environmental Health* 206(4–5): 269–78.

(B) Urbanisation and Education

Education is an essential means of lifelong learning and human development. In urban areas, education system is very easy and less costly than in rural areas. Education is a basic human need and a key factor in development. Investment in education directly raises the well-being of individuals and it also raises their `human capital' and capacity to acquire means for the satisfaction of other basic needs. Education is also seen as a means of reducing inequality.

There is a positive relationship between urbanisation and education. It is expected that rapid urbanisation in India and China will increase gross enrolment in primary, secondary and tertiary level. Literacy rate (Adult and Youth) is much higher in China than India. In the case of education, China has been able to deliver primary and secondary education to all parts of the economy but in India, some students are receiving primary education. Education is the fundamental principle of all forms of development like political, economic, social and technological. Education is a key to reduce poverty and inequality. In 2015, Adult and Youth literacy rate in China (96.36% and 99.73%) is more than India (72.22% and 89.66%).

Table4.Educational indicators in India and China

Year	Level of urbanisation		Gross enrolment rate (%)						Govt. exp. on education	
			primary		Secondary		tertiary			
	India	China	India	China	India	China	India	China	India	China
1980	23	19	*	*	*	*	*	*	*	1.93
1985	24	23	88	120	*	32	6	2	*	2.02
1990	26	26	93	129	*	38	6	3	*	*
1995	27	31	97	107	46	51	6	5	*	1.85
2000	28	36	96	*	46	58	10	8	4.25	*
2005	29	43	*	*	55	*	11	18	3.13	*
2010	31	49	113	129	65	83	18	23	3.32	*
2014	32	54	*	*	*	*	*	*	*	*

Source: World Development Indicators 2014 and 2015

****represents data is not available***

Table5. Adult and Youth literacy rate in India and China

Year	Adult literacy rate		Youth literacy rate	
	India	China	India	China
1981	40.76	*	53.78	*
1982	*	65.50	*	88.77
1990	*	77.78	*	94.28
1991	48.22	*	61.9	*
2000	*	90.92	*	98.86
2001	61.01	*	76.42	*
2006	62.75	*	81.13	*
2010	*	95.12	*	99.64
2011	69.30	*	86.14	*
2015	72.22	96.36	89.66	99.73
Average	**59.38**	**85.14**	**74.84**	**96.26**

Source: World Development Indicators 2014 and 2015

****represents data is not available***

Due to the non availability of parallel data during the period 1981 to 2015, we have used average values relating to adult literacy rate and youth literacy rate for comparison purpose.

(C) Urbanisation and economic transformation

Economic transformation includes a relocation of the workforce from agriculture toward non-agricultural production. More structural changes have occurred in China in terms of composition of national income in comparison to India.

Table6. Value added in different sectors (% of GDP)

	Agriculture		Industry		Services	
Year	India	China	India	China	India	China
1980	35.39	29.87	24.29	47.91	40.32	22.25
1985	30.89	28.11	25.70	42.55	43.41	29.33
1990	29.02	26.72	26.49	40.90	44.48	32.38
1995	26.26	19.66	27.40	46.68	46.34	33.66
2000	23.02	14.75	25.99	45.43	50.98	39.82
2005	18.81	11.73	28.13	46.87	53.06	41.40
2010	18.20	9.62	27.15	46.17	54.64	44.20
2014	17.39	9.17	30.00	42.74	52.60	48.09

Source: World Development Indicators 2014 and 2015

In 2014, agriculture value added is still high at 17.39 percent and 9.17 percent in India and China. When we observe industry and services, urbanisation is causing of economic transformation.

In the case of employment, rural urban migration occurs in cities for the expectation of higher wages in the early stage of urbanisation. The income disparity between rural and urban areas is large. Unemployment rate is increased because job opportunities are not sufficient in cities. But in the later stage of urbanisation, due to the growth of non-agriculture sectors, job opportunities in cities increase which reduce the unemployment rate. The 1990s have been a period of transition and structural change for the Indian industrial economy.

Table7. Employment in different sectors (% of Total employment)

Year	Agriculture		Industry		Services	
	India	China	India	China	India	China
1994	60.5	49.5	15.7	20.7	22	11.5
2000	59.9	46.3	16	17.3	24	12.7
2005	55.8	39	19	43.4	25.2	49.5
2010	51.09	29	22.4	44.3	26.6	48.8

Source: World Development Indicators 2014 and 2015

Employment in agriculture is high in India comparative to China. In 2010, 51.09 percent of the total population is engaged in this sector. Employment in industry varies from 15.7 percent to 22.4 percent in India and 20.7 percent to 44.3 percent in China from 1994 to 2010. In India and China, 26.6 percent and 48.8 percent workers are employed in service sector in 2010. The data confirms that urbanisation is shifting the economy of India and China from agriculture to service sector due to the availability of skilled workers in urban areas.

Urbanisation and GDP, GDP Per Capita

The relationship between GDP, GDP per capita and level of urbanisation seems to be positive in India and China. GDP, GDP per capita is increasing with level of urbanisation but the growth rate of China is five times more than India because of high rate of investment in China.

Table8. GDP and GDP per capita in India and China

Year	Level of Urbanisation		GDP ($billions)		GDP per capita (current US$)	
	India	China	India	China	India	China
1980	23	19	155.67	189.65	271.92	193.28
1985	24	23	236.59	307.48	302.51	292.55
1990	26	26	326.61	358.97	375.15	316.22
1995	27	31	366.60	732.03	381.53	607.57
2000	28	36	476.61	1205.3	452.41	954.55
2005	29	43	834.22	2268.6	729.00	1740.09
2010	31	49	1708.46	6039.7	1387.88	4514.94
2014	32	54	2042.44	10351.1	1576.82	7587.29

Source: World Development Indicators 2014 and 2015

(D) Urbanisation and slum population

Urbanisation in India and China is characterized by a high percentage of urban poor living in slums. Recently, slum population in India and China is more than 40% among urban residents. They have lack of basic urban services such as housing, clean water and solid waste disposal.

Table9.Slum population in India and China

Year	Slum population in urban areas (%)	
	India	China
1990	54.9	43.6
1995	48.2	40.5
2000	41.5	37.3
2005	34.8	32.9
2010	29.4	29.1
2014	24.0	25.2

Source: United Nations Human Settlements Programme (UN-Habitat), Global Urban Indicators Database 2014.

(E) Urbanisation and poverty

UN Habitat (2011) showed a positive relation between urbanisation and development in Asia. Urbanisation was the major factor behind Economic growth and contributing to an overall reduction in poverty rates.[9]

[9] UN-HABITAT, "State of the World's Cities 2010/2011, Bridging the Urban Divide", (2010), Embargoed.

Table10. Poverty gap and headcount ratio in India

Year	Poverty headcount ratio at$1.90 a day (% of population) 2011PPP	Poverty gap at $ 1.90 a day (2011PPP) %	Poverty gap at $ 3.10 a day (2011PPP) %
1983	53.9	16.7	38
1987	44.8	12	32.3
1993	45.9	12.1	32.9
2004	38.2	9.19	28.3
2009	31.1	6.97	24.4
2011	21.2	4.27	18.5
Average	**39.18**	**10.21**	**29.1**

Source: World Development Indicators 2014 and 2015

Table11. Poverty gap and headcount ratio in China

Year	Poverty headcount ratio at$1.90 a day (% of population) 2011PPP	Poverty gap at $ 1.90 a day (2011PPP) %	Poverty gap at $ 3.10 a day (2011PPP) %
1981	88.3	43.2	63.4
1984	75.8	29.4	52.3
1987	60.8	21.7	43.4
1990	66.6	24.4	45.9
1993	57	20.6	40.3
1996	42.1	13	30.6
1999	40.5	13.2	29.6
2002	32	10.2	23.8
2005	18.8	4.94	14.7
2008	14.7	3.87	11.6
2010	11.2	2.66	9.05
2011	7.9	1.76	6.88
2012	6.47	1.37	5.73
2013	1.85	0.35	2.52
Average	**37.43**	**13.62**	**27.13**

Source: World Development Indicators 2014 and 2015

During the period 1981 to 2013, parallel data is not available, so we have used average values relating to poverty. In 2011, poverty head count ratio and poverty gap in India is more than in China because of lack of basic services such as access to clean water, sanitation, energy and solid water disposal etc.

(G)Urbanisation and HDI

HDI is an improvement over GNP and GDP as traditional development indicators and it measures the overall progress of a country with three dimensions i.e. health, knowledge and a decent standard of living. Urbanisation and HDI is positively linked in India and China. Higher level of urbanisation in India and China are related to higher level of human development.

Table12. Human Development Index (HDI) in India and China

Year	Level of Urbanisation		Life expectancy at birth		Expected years of schooling		Mean years of schooling		GNI per capita (2011 PPP$)		HDI value	
	India	China	India	China	India	China	India	China	India	China	India	China
1980	23	19	53.9	66.5	6.4	8.4	1.9	3.9	1255	758	0.362	0.430
1985	24	23	55.8	68.2	7.3	8.0	2.4	4.4	1446	1175	0.397	0.467
1990	26	26	57.9	69.0	7.7	8.8	3.0	4.8	1754	1520	0.428	0.501

1995	27	31	60.4	69.9	8.3	8.8	3.5	5.7	2046	2508	0.462	0.545
2000	28	36	62.6	71.7	8.5	9.2	4.4	6.5	2522	3632	0.496	0.588
2005	29	43	64.5	73.7	9.9	10.6	4.8	6.9	3239	5632	0.539	0.641
2010	31	49	66.5	75.0	11.1	12.4	5.4	7.3	4499	9387	0.586	0.699
2014	32	54	68.0	75.8	11.7	13.1	5.4	7.5	5497	12547	0.609	0.727

Source: World Development Indicators 2014

Table represents that in three dimensions (life expectancy, knowledge and standard of living) and value of HDI, the performance of China is more than in India, because (a) China is more developed in terms of HDI than India, (b) applicable of returns to scale, China has achieved its peak level but India is trying to reach in this level. Since 1978, urbanisation in china is increased significantly with rapid HDI.

Urbanisation and Development indicators

There are numerous development indicators which might influence the urban structure of a country.

U = f (L, M, I, U5, Hex, P, S, T, Ag, In, Se, Sp)

U= level of urbanisation

L= life expectancy at birth

M= maternal mortality rate

I= infant mortality rate

U5= under 5 mortality rate

Hex= health expenditure

P= gross enrolment rate in primary

S= gross enrolment rate in secondary

T= gross enrolment rate in tertiary

Ag= agriculture value added

In= industry value added

Se= service value added

Sp= slum population

Summary

- Since the initial economic reforms in 1979, China has gained strong economic growth, poverty reduction and high standard of living.
- During the last 35 years, China has followed the industrialisation pattern moving from agriculture to industrial sector and in India, the shift has been mainly from agriculture to service sector.
- Health facilities in China have played a pivotal role in the country's economic success. Maternal and child health in China is better as compared to India because China is more aware about health than India.
- Literacy rate (Adult literacy rate and Youth literacy rate) in China is much higher in India.
- The economic performance of China has been impressive. GDP, GDP per capita has risen fivefold than in India.

- China has emerged as the manufacturing hub in textile, light, footwear, engineering etc of the world and India has been in Information technology (IT) and IT related services i.e. software development.
- Employment in modern industries and service sectors is an attractive force for young persons or families. It is difficult to locate a plot of land on which they live; food is scare due to the lack of arable land and personal income in the city. Both countries India and China followed reform path that reduce the role of the government in economic activity but reforms started earlier in China than in India.
- HDI is higher in China than in India because more health facilities, educated people, more life expectancy and more awareness of people in China about their standard of livings, rights and ethics.
- The problem of poverty has begun to emerge in India and China as a result of rapid urbanisation along with other problems such as pollution, crime, overloading of houses and social services

Conclusion

Industry and service sector have been the two growth engine of India and China. China needs to boost service sector in order to generate employment opportunities and India needs the industrial sector to stimulate economic development. Government should need to understand the relationship between HDI and urbanisation in more depth and implement policies that provide the benefits of increased urban population. Both countries (India and China) must concentrate more on those variables which have positive impact on level of urbanisation. The factors responsible for growth and development in India and China is low growth rate of population, one child policy, family planning etc. The study concludes that there is a weak relationship between urbanisation and development in India and China.

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