Infrastructure Development and Business Attractiveness of Indian Cities by 2020 *

Abstract

As the world is becoming more globalized, urban centers are competing with each other to attract business. Indian cities are also influenced by this global trend. Arguably, some cities are endowed with a high quality of infrastructure compared to others. In this context, the paper explores the role played by infrastructural development in ensuring attractiveness of cities of India from the standpoint of conducting business. It examines the various aspects of development of infrastructure within a city.

The paper is concerned with the question of how to make cities more attractive for investment. Finding a suitable infrastructure is a step closer to answer the question. However, the socio-economic and environmental impact of the proposed infrastructural development must be considered. The political dimension of development of cities in pre-planning, implementation, and post implementation phases is also important. All these aspects are discussed in this paper. It concludes with valuable policy implications.

Keywords: Urban infrastructure, Business attractiveness, Lewin's Force field analysis, Cluster development.

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The author would like to thank Mr. Srikanth Goparaju for his help at various stages in preparation of the paper.

Introduction

Urban infrastructure is a key ingredient in the success of Indian cities in the business world. The Indian government is undertaking a major initiative to renew Indian urban centers[1]. Given this context, the paper explores the key role played by urban infrastructure in the business attractiveness of cities. The emphasis will be on Indian cities with occasional comparisons with international centers as appropriate.

Studies conducted on this subject are only beginning and the data and theoretical underpinnings are rather weak. For example, Greater Paris Investment Agency (2008) conducted a study comparing 15 major 'global cities' on perceived attractiveness (based on investor intentions and city image) and real attractiveness (based on headquarter location of Forbes Global 2000 companies). In comparison, data on Indian cities is substantially weak and the sparse information available is based on studies done by outsourcing firms and consultants in that domain. These studies do point to an emerging competition between 'global cities' for investments. For example, AT Kearney's (2009) indices also compare locations for attractiveness of investment flows but measures data at a country level.

Objective of the Paper

The objective of the paper is to examine the issue of business attractiveness and urban infrastructure in greater detail. Given that this topic is important and little work has been done in this area, the paper makes a contribution to this subject. Also, a focus on India will customize the research to the Indian conditions.

Structure of the Paper

The paper is broadly divided into two parts. In the first part (Sections 1 to 5), the emergence of urban centers and the role of infrastructure is discussed. In the second part (Sections 6 to 10), the urbanization process is analyzed and planning approaches for the year 2020 are discussed. A comparison is done with cities internationally and other aspects of development such as political and environmental factors are discussed.

The paper begins with a description of the phenomenon of urbanization and the development of urban centers in India (Sections 1 and 2). In Section 3, the key role played by various aspects of infrastructure in the further advancement of Indian cities is explored. In Section 4, domestic developments are placed in the context of international initiatives in building cities. Other issues related to urban infrastructure and national perspectives are explored in Section 5.

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[1] The Hon'ble Prime Minister of India, Dr. Manmohan Singh, launched the Jawaharlal Nehru Urban Renewal Mission (JNNURM) on 3rd of December, 2005. It is the single largest and one of the most important initiative of Government of India for planned development of key cities of the country. The Mission aims at creating economically productive, efficient, equitable and responsive cities in an integrated framework with focus on economic and social infrastructure, basic services to urban poor, urban sector reforms and strengthening of Municipal Governments and their functioning. One of the Sub-Missions of JNNURM viz. Urban Infrastructure and Governance is to be implemented over a period of seven years. (www.jnnurm.nic.in)

The second part of the paper looks into the future. It begins with a simple force field analysis of the problem of changing Indian cities(Section 6). Section 7 illustrates how innovative thinking can be applied to the problem of urban development. In Section 8, a comparison is made between cities globally. In section 9, the cluster development technique and its promise are presented. Other aspects of development as they relate to social and political factors are described in Section 10. Section 11 deals with certain policy implications and concluding remarks are presented in Section 12.

Section 1: Urbanization

Urbanization is a phenomenon characterized by the growth of cities and the concentration of economic and industrial activities around these centers. Further, it may be fuelled by migration of large number of people from rural areas. Economic activities in the urban areas are expected to be skewed in favour of manufacturing and service sectors over agricultural occupations. Simon (1947) has argued that increase in industrial productivity has led to change in demographics in the West over the last several decades from rural to urban areas. Through simple models he has shown that differences in income elasticity of demand and the use of tractor can lead to a change in the ratio of urban to rural population. It is generally understood that similar forces are responsible for the urbanization phenomenon in recently industrializing centers.

Section 2: Urban Centers in India

Census data in India also reveals that there has been a steady increase in population living in cities. Also, as Indian population has increased, the number of urban dwellers has also increased (MoI&B, 2008).It is not clear however, if the growth in urban centers is a good measure of urbanization process itself. The increase in the number of inhabitants in cities has led to urban poverty and creation of urban localities that resemble or are even inferior to poorer rural settings. Lack of wealth creation opportunities in rural areas is possibly the reason for large scale migration to livable urban centers (Bhagat, 2001). Also, the industrialization efforts of the Indian government are partly responsible for this demographic shift over the last few decades.

Whether this trend of migration and growth of cities will continue is difficult to predict (Bhagat, 2001). New technological and social changes of what may be called the ‘third wave’ shifts (e.g., electronic cottage) may result in a process of populations going back to the rural areas (Toffler, 1980). Some of these movements may also be regressive (Toffler, 1990). Still others may be cross border and driven by economics. For example, Chinese traders and merchants numbering over 2,00,000 from the southern provinces of China have migrated recently and have built up Mandalay (north Myanmar) (Storer, 2007). Recent symposia on city planning are recognizing post industrial factors (such as ‘quality of place’ factors, presence of knowledge workers etc.) and their importance (OECD, 2005).

Section 3: Infrastructure and Business attractiveness

Infrastructure is a key element for the success of any urban center. In India, infrastructure has been linked by many to the economic growth of the country[2].

3.1 Business attractiveness

While Infrastructure is important, there are other factors as well that make a city business friendly. World Bank's Doing Business India Report of 2010 lists these factors but doesn't measure urban infrastructure as such (World Bank, 2009). Business attractiveness is a general term that indicates that extent to which a city is attractive for doing business. This can be measured through a variety of methods; the simplest among them would be to measure the amount of fund flows into the city. The Paris study has used investor intentions (Greater Paris Investment Agency, 2008) and location of headquarters. It can be argued that location of headquarters doesn't measure investment as such but rather provides a signal of the importance given to a city by a particular business. A secondary measure could be the amount of new jobs created by the investment. This may be suitable for Indian conditions wherein the societal value of a business initiative has been traditionally measured by the number of new jobs created.

3.2 Infrastructure and urban infrastructure

Infrastructure has various dimensions and these have to be measured within the context of the culture and society to which a city belongs (Redman and Jones, 2004). Given that no clear definition of infrastructure exists, the Secretariat to the Committee of Infrastructure has examined this matter in depth. While criteria identified by the committee are comprehensive they apply for infrastructure assessment at the national level. For the present purpose, the infrastructure dimensions for urban centers can best be understood on the basis of the JNNURM document (JNNURM, 2006). The urban infrastructure investments will cover nine dimensions – redevelopment such as road widening and decongestion, water supply, parking lots and transport, protection of soil and water bodies, heritage development, sanitation, sewerage and drains (including for storm water), solid waste management. Telecom, power, health, education, and wage employment schemes are excluded from the list (JNNURM, 2006).

[2] For example see www.chillibreeze.com/articles/Infrastructure-Development-and-Economic-Growth.asp

Section 4: Global Trends

New cities are being developed by various countries that provide a glimpse of how future cities could emerge. Dongtan in China (situated in Shanghai's Chongming Island) is an eco-city planned for a million plus inhabitants (Bhatia, 2010). Table 1 provides a list of fairly large urban agglomerations (i.e. over 100 square kilometers) that involve high planning, latest technology, and other advanced features of city life.

Table 1: Examples of Highly Advanced Future Cities

S. No.	City Name and Country	Features
1.	Tsukuba, Japan	284 sq. km. with 207,394[3]; attracts half of Japanese science funds.
2.	Lavasa Future City, India	100 sq. km. a Hill city between Mumbai and Pune[4].

Source: Compiled by the author.

UAE's Abu Dhabi emirate is planning 'Masdar City' that builds on the latest energy technologies[5]. New consulting firms are emerging to help cities make the transition to the future[6]. Indians are also thinking of the future by engaging young minds[7].

Section 5: Other aspects of Infrastructure development within India

Infrastructure when viewed at a national or a supranational level includes power, telecom, air, sea, and road connectivity. In the Indian case, one dimension of infrastructure development is road connectivity – The golden quadrilateral and regional integration with Myanmar and Thailand through road and rail links are recent advances in this area (De, 2008). Another dimension of Indian cities is their categorization in terms of business parameters into mega-cities, boom towns, and niche towns (NCAER, 2008).

These additional aspects of infrastructure development provide the context for development of cities. For example, the business attractiveness of cities in the North East region would depend on changing demographics, purchasing preferences, and location on the Myanmar-Thailand link routes. An understanding of these broader national and international dimensions can explain the attractiveness of various cities.

[3] www.tsukubainfo.jp
[4] www.lavasa.com
[5] www.masdar.ae
[6] Futurecities.org
[7] www.futurecitiesindia2020.com

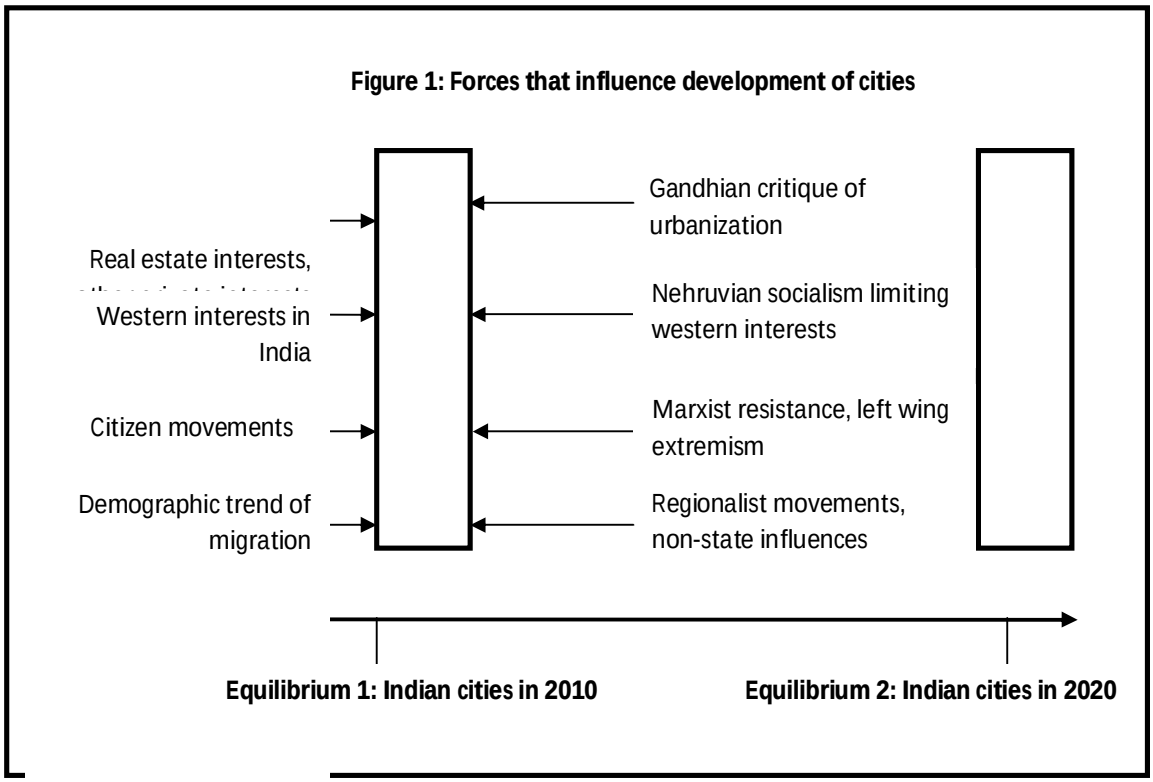
Given this process of urbanization, development of urban centers, and national and global trends, it can be argued that Indian cities will change in the next decade. This process of change will be studied in the next section.

Section 6: Planning Models

6.1. Changing Indian Cities by 2020 – A Force Field Analysis

Lewin's Force field analysis is used by management scholars to study the various factors that influence the process of change in a system. This model is a useful tool of preliminary analysis. More advanced models have been developed by scholars for changing large systems (French, *et. al.* 2006). The constraining and driving forces that influence the development of cities are shown in Figure 1.

Figure 1: Forces that influence development of cities



Source: Compiled by the author.

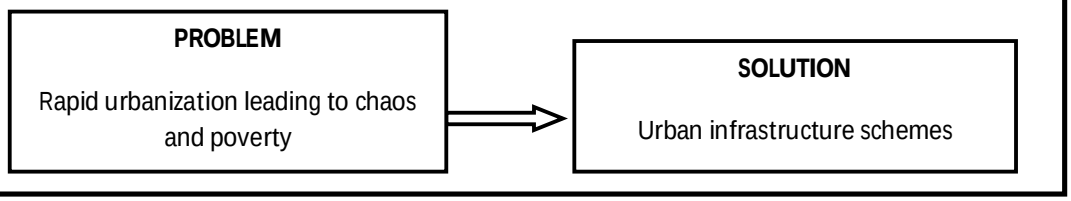
In order to take India into 2020, it will be necessary to increase the driving forces and limit the influence of the resisting forces. However, in the Indian context some of the resisting forces are ideologically wedded to the evolution of the country. The reduction in cold war polarization of the world has created an opportunity to wed Nehruvian State driven industrialization efforts with private and western interests to some extent. Similar such

creative interplay of forces may drive Indian cities into a future equilibrium state. The paper now examines the role of innovative models in managing the change.

Section 7: Application of Innovative Model

Goparaju and Shome (2009) have suggested that addressing multiple social and economic problems simultaneously can improve the effectiveness of large government schemes. They apply this model to Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) to demonstrate how MGNREGA is an innovative scheme. The problems are juxtaposed in such a way that the positive characteristic of one can compensate for the negative antecedent or consequent of another. The proposed approach of the Indian government in the case of urbanization can be characterized in Figure 2.

Figure 2: Traditional Model of Urbanization

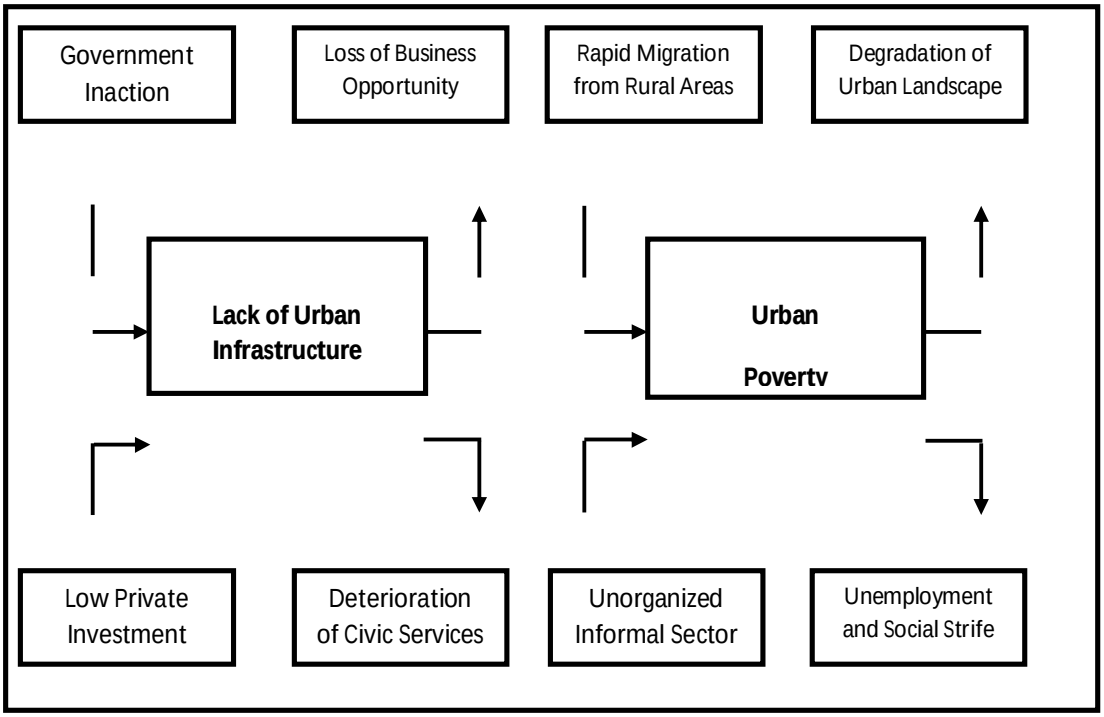


Source: Compiled by the author.

Cyclical feedback loops may disrupt these simple approaches to the problem. For example, sudden migration from one city to another can disrupt and overburden even newly developed urban infrastructure.

A second level approximation of the reality would at least take additional factors into account. Such an innovative model is suggested below (Figure 3).

Figure 3: Application of the Innovative Model to Two Urban Issues



Source: Compiled by the author.

An innovative scheme can be formulated in such a way that the antecedent and consequent factors of one problem balance itself off against some of the antecedent or consequent factors of the other. In the above case, lack of urban infrastructure has antecedent factors - low private investment and government inaction. Similarly, as consequences of the lack of urban infrastructure, there is loss of opportunities for businesses. This is because of the delays and difficulties in doing business in the city. A comparison is made in a Finance Ministry report that lack of infrastructure limits Mumbai from leaping into a Global Financial Center status such as New York, London, or Singapore (Ministry of Finance). Similarly, lack of urban infrastructure can result in the deterioration of civic services.

Rapid migration from rural areas and lack of wage control on over unorganized informal sector has been attributed to the increase in urban poverty. Similarly, urban poverty would result in the degradation of urban landscape through the springing up of poorer urban localities. Unemployment and strife may result due to poor living conditions.

An innovative solution would address the problems simultaneously. For example, locally sourced labor working on labor intensive projects to build the city (such as landscaping, gardening etc.) can both reduce urban poverty and help business processes. JNNURM of the government of India envisages some of these dimensions of the socio-economic issues. For example, urban poor are included in the drawing up of city development plans.

Section 8: Comparison of Cities

There are a total of 479 cities with a population of 1 million or more with Tokyo being the most populous and Tegucigalpa among the least (Brinkhoff, 2010). A random sample of 40 cities is taken. This sample is presented in Appendix 1. The population figures correspond well with Demographia Report figures (Although the latter are somewhat dated, i.e. up to 2005) (Demographia, 2009).

These cities can then be compared for their business attractiveness and infrastructure facilities. While no such surveys have been conducted so far, several general studies have been made to compare cities globally from a business standpoint. Mercer's annual rankings compare cities on 39 'Quality of Living' indicators and among these 'health and sanitation' and 'public service and transport' have certain factors that relate to our definition of 'urban infrastructure'. Overall there is not even a single Indian city that figures in the top 50 ranked cities when compared with New York (ranked 49) as the base city having an index of 100 (Mercer, 2008). Therefore, Indian cities as of 2010 are not perceived by Western consulting firms to be high on urban infrastructure and also on business attractiveness.

Mitropolitski's (2004) has reviewed research done by Montreal Board of Trade that indicate that there are no apparent links between quality of living (or perceptions of it) and investment plans. In other words, apparent relationships such as those cities that are high on urban infrastructure are also likely to be high on investment inflows may not be empirically supported.

Similarly, a preliminary analysis of data from AsiaBIZ survey reveals that Japanese cities are ranked very high on infrastructure (top 10) but don't rank as well in business friendly environment or economic potential (AsiaBIZ, 2007). In other words, while urban infrastructure and business attractiveness seem to be intuitively related, evidence doesn't exist to support this view. In fact, the few reports on the matter contraindicate.

In Appendix 2, the major mega-cities of India are listed and their corresponding infrastructure gaps are presented. These figures are drawn from the respective city development plans. These gaps are then annualized and calculated per citizen to be comparable. Funds flows into the cities were not available, but could also be included and then compared with the infrastructure gaps. If these two variables are correlated, we can say that infrastructure investments are related to business attractiveness. A similar illustrative comparison is conducted with available data from global rankings in Appendix 3.

In Appendix 3, the top 50 cities in terms of infrastructure (according to Mercer survey) are compared with the top 50 cities in term of FDI inflows (According to data from OCO consulting). Now, a co relational analysis shows the rather weak relationship among the variables. In the case of India, it is quite likely that all the major cities will have a limited variability in terms of infrastructure, and some variability in terms of fund flows. Therefore, within country comparisons may be less insightful in establishing a relationship between the variables. If we can show that cities with low infrastructure will necessarily be low in business attractiveness and cities with high infrastructure will necessarily be high in business attractiveness; then we can establish a clear linkage between the variables. Such a relationship would then justify heavy government investment in infrastructure. However, observations in Appendix 3 provide a rather mixed picture and possibly also set the upper limits of what we can expect in terms of within country comparisons of Indian cities.

The information presented in the three Appendices, therefore, indicates that a thorough and a systematic examination of the relationship are needed from a scientific standpoint. This can be done empirically and must be both within country (to be relevant to the socio-political context) and also between country (to examine the strength of the relationship and whether it exists at all) studies must be encouraged.

Section 9: Cluster Development Technique

Cluster development is emerging as an important strategy and has many connotations. In the case of the rural development, village clusters (10 to 15 villages) are identified and BPL families in these villages are targeted for development schemes. A number of such clusters are then included in various backward regions of the country in a larger scheme (Hedge, 2006).

Cluster development for medium to small enterprises helps the enterprises by reducing risks and improving access to credit, to markets, and to suppliers. There are various elements of the business process that can be carried out more effectively in a cluster setting (as against small organization managing all these processes all by itself) (Gulati, 2007). Another illustrative example has been that of Arizona, where industry development technique has been studied for its impact on economic development (Waits, 2009).

Section 10: Other Issues

Social, political, and international issues are key to the development of cities. In the Indian cities, a potential exists to develop Indian Heritage Centers that could become attractive locations for tourism. This may contribute not only to domestic tour operators but also to international and domestic airlines business, hospitality sector, and travel and tourism sector. The cases of Varanasi, Amritsar, and others have been highlighted by the Prime Minister of India (JNNURM, 2006).

The horizontal expansion of cities is a challenge that all cities have to handle. However, the unique elements vary from one city to another. A framework that separates cities into three categories – North American, European, and non-Western has been suggested (Redman and Jones, 2004).

Section 11: Policy Implications

If we assume that infrastructure is the key facilitator of economic development, then the State could provide greater importance to the issue. Recent efforts have taken an integrated approach to this developmental process. The integrated approach may trigger the process of identifying multiple problems that limit the effectiveness of the scheme. Tools suggested here of combining two or three problems simultaneously to arrive at innovative solutions can be adopted. For example, businesses can invest in infrastructure schemes to create business friendly environments for the future. The government can further encourage such participation.

Another important factor that can attract business is to provide a liberal, attractive, and investor friendly investment climate. Cluster development techniques can be used to boost small and medium scale organizations. Also, these organizations can create jobs in a large scale – a key benefit of any initiative in a country such as India.

While no clear linkage could be established between infrastructure development and business attractiveness, a full fledged study should be conducted with sufficient funding to examine this issue. It is quite surprising that multi billion dollar investments by large democracies is being pledged with limited participation of citizens of those respective countries and without regard to scientific methods and procedures. The paucity of data, of course, is inexplicable.

Section 12: Conclusion

It can be concluded that infrastructure and business attractiveness of cities is a subject that deserves greater study. It is generally held as ‘common sense’ in business that the process of urbanization is inevitable; that Indian cities will grow and larger sections of Indian citizens will move to cities in the next few decades; and that infrastructure investments by government are key in making Indian cities ready for business. Based on the arguments and information provided in the paper, limited evidence exists to support this line of thinking. While there is little to suggest otherwise, given the nature and scale of investments involved, it is suggested that a more systematic and scientific study with reliable data from government and international sources be carried out to clarify the subject better. The paper makes a contribution by highlighting the factors at play, the role of innovative thinking, and the empirical picture that is likely to emerge as data is gathered and reexamined on this subject.

Appendix 1

Random Sample of 40 Cities

The following randomly selected numbers among 1 to 479 are generated on computer:

6,9,15,17,21,40,50,51,67,81,89,99,127,133,140,147,156,158,170,177,192,199,203,244,248,254,291,297,303,324,371,374,389,392,397,399,407,414,425,464

S. No.	Anglo Name	S. No.	Anglo Name	S. No.	Anglo Name	S. No.	Anglo Name
1.	Mumbai	11.	Melbourne	21.	Belem	31.	Natal
2.	Manila	12.	Pusan	22.	Goiania	32.	Datong
3.	Jakarta	13.	Fuzhou	23.	Nanning	33.	Maracay
4.	Beijing	14.	Lucknow	24.	Kharkov	34.	Grand Rapids
5.	Istanbul	15.	Campinas	25.	Columbus	35.	Ottawa
6.	Johannesburg	16.	San Juan	26.	Baotou	36.	Barquisimeto
7.	Saigon	17.	Taegu	27.	Nashville	37.	Cotonou
8.	Philadelphia	18.	Manchester	28.	Yekaterinburg	38.	Birmingham
9.	Poona	19.	Katowice	29.	Kwangju	39.	Kumamoto
10.	Caracas	20.	Lanzhou	30.	Adana	40.	Mandalay

Appendix-2

Infrastructure Gap and Investment Flows into Indian Cities

S. No.	City Name	Population	Per citizen gap	Infra (Rs. Cr)
1	Delhi	23,200,000	1.37	44594
2	Mumbai and Thane	22,800,000	7.38	16843
3	Kolkata	16,300,000	0.85	6939
4	Chennai	8,200,000	5.99	34429
5	Hyderabad	7,500,000	3.81	20017
6	Bangalore	7,800,000	N/a	N/a
7	Ahmedabad	5,950,000	1.22	5111
8	Thane (2005 pop)	15,44,390	4.47	4840.66
9	Pune	4,850,000	0.46	1117

Source: Population data from Brinkhoff (2010); Infrastructure funds sought from CDPs of various cities (JNNURM, 2006); Inflows of Pune from CDP, and Industries Directorate.

Appendix 3

Comparison of Rankings of Surveys

S. No.	Infrastructure Rank	City	Index	FDI Rank	No. of Projects
1	1	Singapore	109.1	3	713
2	2	Munich	106.5	36	140
3	3	Copenhagen	106.2	26	176
8	8	Frankfurt	104.8	50	106
9	8	Hong Kong	104.8	7	541
10	8	London	104.8	2	790
11	11	Sydney	104.0	32	155
12	12	Tokyo	103.4	10	309
13	13	Paris	103.1	9	426
18	18	Toronto	101.9	44	121
19	18	Vienna	101.9	39	134
23	20	Stockholm	101.5	34	146
26	26	Amsterdam	101.0	41	129
29	29	Berlin	100.1	47	109
32	32	New York City	100.0	17	227
35	35	Dubai	99.2	5	660
37	35	Melbourne	99.2	48	108
44	43	Madrid	98.1	24	202
50	49	Milan	96.5	31	162

Source: 1. FDI data from ococonsulting.com; 2. Infrastructure ranks and indices from Mercer Rankings

The following observation can be made about the data.

Only 19 cities are common to FDI top 50 and Mercer Infrastructure top 50 lists. This means that there are:

1. Over 30 cities that are high on infrastructure but don't figure in the top 50 FDI destinations.
2. Over 30 cities that are top FDI destinations but don't figure in the top 50 cities based on infrastructure.
3. Among the cities that are reasonably high on both infrastructure and FDI, it is found that correlation is only about 0.35 (We consider index numbers as values that can be correlated with no. of projects). Rank correlation (Spearman's), of course, will be even lesser due to loss of information at 0.2 for the 19 cities.

The following preliminary inferences seem reasonable. Having good infrastructure doesn't automatically ensure high FDI inflows. Second observation above can be attributed to the Asian and East European cities that have become outsourcing destinations. FDI is flowing into weak infrastructure areas due to the phenomenon of outsourcing. Third observation shows that there is no apparent link between the two variables and more empirical work is needed.

References

1. AsiaBIZ Strategy (2007) "Asian Cities of the Future – 2007 Award".
http://www.attractivecities.com/Asia_ratings.html

2. AT Kearney Report (2009) "The Shifting Geography of Offshoring – The 2009 A.T. Kearney Global Services Location Index".
(http://www.atkearney.com/index.php/Publications/global-services-location-index-gsli-2009-report.html)

3. Bhagat, R. B. (2001) "Urbanization in India: A Demographic Reappraisal", International Union for the Scientific Study of Population Conference.
(http://www.iussp.org/Brazil2001/s80/S83_03_Bhagat.pdf)

4. Bhatia, G. (2010) "Can We Make Clean, Green Cities like China?", The Times of India, pp: 14, Jan 31.
(http://timesofindia.indiatimes.com/home/sunday-toi/all-that-matters/Can-we-make-clean-green-cities-like-China/articleshow/5518501.cms)

5. Brinkhoff, T. (2010) "The Principal Agglomerations of the World".
http://www.citypopulation.de/world/Agglomerations.html

6. De, P. (2008) "Infrastructure Development in India", Chapter 4: pp. 105-130.

7. Demographia (2009) "World Urban Areas and Population Projections", 5th Comprehensive Edition, Revised, April.
http://www.demographia.com/db-worldua.pdf

8. French, W. L., Jr. C. H. Bell and V. Vohra. (2006) "Organization Development", Pearson Education.

9. Goparaju, S. and S. Shome (2009) "Techniques in Innovative Policy Making: Examples from India", Presented in Conference on Regulating for Decent Work, International Labour Organization, Geneva.
http://www.ilo.org/public/english/protection/condtrav/pdf/rdwpaper32a.pdf

10. Greater Paris Investment Agency (2008) "Global Cities Attractiveness 2008".
(http://www.greater-paris-investment-agency.com/pdf/PIDF%20ALL%20RESULT.pdf)

11. Gulati, M. (2007) "Cluster Development Approach How Does It Work on the Ground", Foundation for MSME Clusters, March, UNIDO/ADB presentation, Tokyo.
http://www.adbi.org/files/2007.04.04.cpp.cluster.dev.approach.pdf

12. Hegde, N. G. (2006) "Promotion of Sustainable Livelihood Through Village Cluster Development Approach", BAIF Development Research Foundation.
http://www.baif.org.in/aspx_pages/pdf/Agriculture/Cluster%20development%20.pdf

13. JNNURM, Govt. of India (2006) "Modified Guidelines, Sub-mission of Urban Infrastructure and Governance", pp: 6, September.
(www.jnnurm.nic.in)

14. Mercer (2008) "Quality of Living Global City Rankings 2008".
http://www.mercer.com/referencecontent.htm?idContent=1307990#Top50_qol

15. Ministry of Finance, Govt. of India (undated) "Urban Infrastructure and Governance", Chap. 14: 179-186.

16. Ministry of Information and Broadcasting, Govt. of India (2008) "India Yearbook 2008", Research, Reference and Training Division. (http://rrtd.nic.in/India_2008.pdf)
17. Mitropolitski, S. (2004) "Quality of Life vs. Business Attractiveness", International Real Estate Digest, May. http://www.ired.com/news/mkt/nam-qual.htm

18. NCAER (2008) "The Next Urban Frontier: Twenty Cities to Watch", Monthly Report, X(8), August. http://www.ncaer.org/popuppages/EventDetails/E7Aug2008/Presentation.pdf

19. OECD (2005) "Enhancing City Attractiveness for the Future", International symposium, 2-3 June, Nagoya Congress Center, Japan.

20. Redman, C. L. and N. S. Jones (2004) "The Environmental, Social, and Health Dimensions of Urban Expansion", pp: 8, Population-Environment Research Network cyberseminar, 29 Nov-15 Dec 2004. (http://www.populationenvironmentresearch.org/papers/Urban_Expansion_background_paper.pdf)

21. Simon, H. A. (1947) "The Effect of Increased Productivity up on the Ratio or Urban to Rural Population", *Econometrica*, 15(1).

22. Storer, B. (2007) "Sino-Burmese Relations as Viewed Through Three Lenses", Brussels School of International Studies, BSIS Journal of International Studies, pp: 74. (http://www.kent.ac.uk/brussels/BSIS/news/journal/archivepage/2007/BSIS%20Journal%202007.pdf)

23. Toffler, A. (1980) "The Third Wave: The Classic Study of Tomorrow", pp: 194-207, Bantam Books, New York.

24. ---------- (1990) "PowerShift: Knowledge, Wealth, and Violence at the Edge of the 21st Century", pp: 378, Bantam Books, New York, 1990.

25. Waits, M. J. (2009) "Advantages of the Industry Cluster Approach to Economic Development", Morrison Institute of Public Policy, Arizona State University. www.nga.org/Files/ppt/ATLANTAFORUM_WAITS.PPT

26. World Bank (2009) "Doing Business India Report 2010", Comparing Regulation of 183 Economies. (http://www.doingbusiness.org/Documents/CountryProfiles/IND.pdf)

27. www.chillibreeze.com/articles/Infrastructure-Development-and-Economic-Growth.asp

28. www. futurecities.org

29. www.futurecitiesindia2020.com

30. www.jnnurm.nic.in

31. www.lavasa.com

32. www.masdar.ae

33. www.tsukubainfo.jp