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City clusters and break-out in corporate competitiveness: Patterns and perspectives focusing on innovation capabilities and India

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Abstract

Purpose – The purpose of this paper is to analyze the patterns of location of key activities for break-out in corporate competitiveness. The key objective is to identify linkages that may exist among the location of corporate center activities, innovation capabilities and the break-out.

Design/methodology/approach – Patterns of location of corporate center across the world have been explored first, using sample data from Global 500. For the context of innovation and India, two polar locations were selected. The patterns in the growth of focal firms from the locations were evaluated using select competitiveness criteria such as revenues, profits and assets, based on data of a larger sample from Global 2000.

Findings – Findings support the view on "role of location with innovation clusters" such as Bangalore, particularly for competitiveness of born global firms. Surprisingly, Mumbai has increased its percentage share of contributions in terms of revenues and profits, indicating sustenance of cluster, entrepreneurial and other advantages.

Practical implications – Considering the enormous scope for enhancing contributions of emerging-country multinational enterprises to the world economy, decisions related to break-out in competitiveness are critical. Depending on strategic intent and the role of innovation and internationalization, firms can take better decisions related to the location of specific corporate activities to foster multinational enterprise (MNE) competitiveness.

Social implications – The findings may inspire key stakeholders to take decisions that enhance sustainability of city clusters and communities.

Originality/value – Analyzing the role of location of key corporate activities, for the phenomenon "break-out to higher stages of competitiveness", is a unique contribution. These concepts and findings can be of high value to firms and MNEs thinking long term about location or relocation of corporate center activities, particularly for innovation.

Keywords Break-out to higher levels, Corporate center location, Corporate headquarters of focal firms, Emerging country multinational enterprises, EMNE catch-up strategies

Paper type Research paper

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Clusters can maintain vibrancy as competitive locations for centuries, and most successful clusters prosper at least for decades (Porter, 1998).

1. Introduction

The role of location for innovation and competitiveness has been an area of high interest since the search for competitive advantage (Porter, 1990). Knowledge creation capabilities (Nonaka and Takeuchi, 1995) and innovation are emerging as the main drivers of a firm's competitiveness (Sala-I-Martin *et al.*, 2012). Advanced country multinational enterprises (AMNEs) often have capabilities to internalize the benefits of internationalization, and many studies have been conducted on their behaviors and performance (Ketels, 2008, p. 124; Mudambi and Swift, 2011). Relatively, the break-out of emerging country firms to higher stages of corporate competitiveness is an under-researched area. The stages can be defined ranging from achieving competitiveness locally and nationally to globally (Momaya, 2001). Competing internationally often demands ability of a firm to develop and coordinate effective transfer of "firms specific advantages" ("FSAs"). Clusters are emerging as "country specific advantages" ("CSAs") of host regions and sources of multinational enterprise (MNE)'s FSAs (Gugler *et al.*, 2015), particularly for global innovation strategy of MNEs.

In an emerging environment of intensifying competition among locations, microeconomic factors have become much more important differentiators of location competitiveness (Ketels, 2008). The search for competitiveness has also intensified after the financial crisis of 2008. Shrinking of economy in several developed countries has prompted focus on emerging countries. The resulting intensified competition is visible across countries, including in India, where MNEs have been locating subsidiaries, creating knowledge and increasing their market share. A wave of some local firms in emerging countries, also striving to climb up the ladder of competitiveness (Momaya, 2001) and some appearing in international markets as emerging-country multinational enterprises (EMNEs) has been described by some as the "EMNE phenomenon" (Awate *et al.*, 2012).

The multifaceted concept of competitiveness is gaining importance as competition intensifies. Competitiveness is a context specific concept with relevance across levels: product, firm, industry and country. An informal understanding of competitiveness has existed for long; formal research got a boost after Porter (1990) developed a comprehensive approach to national competitiveness. Porter's Diamond Model tried to explain the competitiveness of select industries and the role of factors shaping it. Firms are the key vehicles of value creation in a market economy (Porter, 1990; Nobeoka, 2011) that is emerging to be a dominant design. Hence, a better understanding of the determinants of competitiveness of firms requires further research due to its evasiveness (Aiginger, 2006), particularly the role of location and innovation for break-out in competitiveness.

The role of clusters in home and host countries as location advantages fostering MNE competitiveness is identified as a high potential field of research in competitiveness. City clusters are home to families, firms, institutions and other organizations that contribute to the competitiveness of firms. With continuing urbanization, particularly in Asian countries, mega-city clusters are rapidly emerging. Dynamic city clusters have been known in Europe, the USA and Japan, but are less understood in developing countries (Basant and Chandra, 2007), particularly their linkages with innovation and

competitiveness. Gugler *et al.* (2015) emphasized the importance of cluster and cross-cluster relationships in the improvement of an MNEs FSA position on innovation. In parallel, the role of knowledge, learning and innovation capabilities for (EMNEs) catch-up (Awate *et al.*, 2012) for competitiveness can be a quite exciting stream of research. Corporate centers (also referred to as corporate headquarters or CHQ) play a key role in shaping the capabilities and may follow clustering patterns about their location.

For the fascinating area of study, we start with a classic practice question that we faced: how does location matter in enhancing the competitiveness of firms? (Dunning, 1998). Studies investigating the role of location and other characteristics of the home country for global strategy and competitiveness can provide valuable insights. Break-out to next stage of the competitiveness can depend on industry, innovation, internationalization strategies and location (e.g. country, city) of key activities such as corporate services. We wish to know, what is the role of location of corporate center for break-out to higher stages of competitiveness, more specifically, which cities seem to support higher corporate competitiveness. Focal firms are among the key players of an industry or cluster and contribute significantly to growth and international competitiveness. Focal firms can play a key role in the competitiveness of not only their industry but also of one or more local concentrations of related businesses and institutions, which we refer to as clusters. However, the real challenges come when focal firms try to climb up the stages of international competitiveness (e.g. from domestic to international; Momaya, 2001), and many fail to break-out to next levels, a phenomenon of great interest for our context.

Location can refer to a range of units, from country to cluster and city. For instance, India has been emerging as a key location for activities of not only domestic firms but also for global MNEs. With one of the largest pool of workers (Ranked No. 1 on the factor unskilled workers since 2000s, IPS, 2012), improving infrastructure and growing markets, most of the global MNEs have at least some operations in India. Proactive global MNEs such as IBM, Samsung and Siemens have many of their activities, including new product development and research and development (R&D) being undertaken in India (Verbeke, 2013). In some countries, where states (or prefectures as in the case of Japan) have higher autonomy, such as differential treatment to attract investment, states can also be an important unit for consideration. For some contexts of location, cities can be an ideal unit of analysis, particularly in the highly populous, economically large and growing Asia. Considering the context of this study, and the emerging role of cities as spatial clusters, we will focus on the level of city cluster to understand the role of location for corporate competitiveness.

Going with the trend of progressing internationalization, several activities for MNEs, including innovation, can be dispersed at locations across cities, states and countries. While innovation is also important, other factors of competitiveness often become important in emerging country contexts. Hence, focus of this paper is more on competitiveness than innovation. Considering the context and focus of this paper on the phenomenon "break-out to higher stages of competitiveness" for focal MNEs, corporate center activities are perhaps the most important drivers. Competitiveness of these activities can be aggregative and can be conceived as the construct "corporate competitiveness" of the firms. One key reason for the focus on this element is its

stability; locations of corporate center of the firms achieving "break-out to higher stages" generally remain unchanged for decades.

2. Context of competitiveness

Let us make sense of the context of "competitiveness linked across levels" that shapes research issues and questions. Though patterns of country competitiveness seem quite stable at the top, they evoke challenging questions that need significant research attention. Country competitiveness trends, as measured on two rankings for select large countries, have been compiled systematically and presented in Table I. The rankings are quite comprehensive and often based on more than 200 criteria. Exceptional gains for China are visible. Significant gains in the competitiveness of India (from Rank 47 in 2005 to 22 in 2011) indicate toward opportunities for locating in India. AMNEs have been leveraging the liberalization in India and gaining market share in most of the industries.

Several trends and estimates hint that location advantages are yet to make a significant contribution to international competitiveness of firms of Indian origin (FIOs). Longitudinal snapshots of the trends in contribution to the world output by focal firms from select countries may give some perspective. For this purpose, we selected a Global 500 sample, as used by other researchers (Rugman, 2006; Rugman and Verbeke, 2008). While the USA and some European countries have sustained their contribution, a complete divergence between trajectories for India and China is very striking (Table II). China massively increased its contribution from 16 companies in 2005 to 89 in 2013. The low ability of FIOs to increase their contribution despite several favorable factors such as rapidly growing domestic markets and overall country competitiveness gains (Table I) is a major leadership concern. Despite two decades of recession, firms from Japan have maintained their remarkable contribution. Tokyo still has the highest contribution of firms for any city, despite a strong push for Beijing by China (Table II). The contributions by FIOs are an order of magnitude lower, thus sparking this research that explores the basic trends, and hopefully reasons, as it progresses.

Country	NCR 2009	NCR 2011	WCY 2009	WCY 2014	Per capita GDP US$ PPP, 2013
USA	2	2	1	1	53,143
Singapore	5	1	3	3	78,744
Canada	3	3	8	7	43,247
Australia	7	9	7	17	43,000
Germany	19	13	13	6	43,332
Japan	20	23	17	21	36,315
Korea	23	19	27	26	33,140
Malaysia	38	38	18	12	23,298
China	17	15	20	23	9,800
India	**28**	**22**	**30**	**44**	**5,410**
Out of number countries	67	65	**57**	**60**	

Table I.
Trends in competitiveness ranks of select countries

Notes: NCR = National Competitiveness Research; WCY = World Competitiveness Yearbook; bold emphasize India, focus of this paper

Sources: Developed based on data from World Competitiveness Yearbook (IMD, various years) and National Competitiveness Research (IPS, various years)

Country	2005	2006	2007	2008	2009	2010	2013
The USA	176	170	162	153	140	142	132
Japan	81	70	67	64	68	71	62
China	**16**	**20**	**24**	**29**	**37**	**46**	**89**
France	39	38	38	39	40	39	31
Germany	37	35	37	37	39	37	29
Great Britain	35	38	33	34	25	29	26
Switzerland	11	12	13	14	15	15	14
The Netherlands	14	14	14	13	12	13	11
Canada	13	14	16	14	14	11	9
Italy	8	10	10	10	10	11	8
India	**8**	**6**	**6**	**7**	**7**	**8**	**8**
Contribution from Asia in the Sample	105	96	97	100	112	125	159

Note: Number of firms in Global 500
Source: Developed based on data from Global 500, various years

Table II.
Trends in contribution to world output by focal firms from select countries

India provides an exciting context to address some of the issues emerging in the paragraphs above. Among the reasons, the hyper competition across several industries in India, caused by participation from the best in the world, and efforts to break-out by many firms in India, are perhaps the most interesting. While India is still classified in Stage 1 (factor-driven) of development, far from Stage 3 (innovation- driven) as per the Global Competitiveness Report (Sala-I-Martin *et al.*, 2012), some city clusters such as Bangalore are striving hard to catch-up on innovation. The comparative patterns of two polar cities may provide rich insights.

The key objective of the first phase of our study is to analyze the patterns of location for break-out on corporate competitiveness. We focus on city cluster as the unit of analysis of location, as it has been found to be quite relevant in Indian contexts (Basant and Chandra, 2007; Lorenzen and Mudambi, 2013). The second phase focuses on key questions such as:

Q1. Does a location rich in information and communications technology (ICT), knowledge creation and innovation capabilities offer some distinct advantage in the break-out?

Q2. Does the advantage reflect adequately in performance? Even if, when we expand the sample to consider additional variables that better reflect innovation capabilities?

This paper is organized as follows. Context and literature review help design methods. Analysis of secondary data is used to evolve findings and to characterize the phenomenon, support discussion factually and draw implications.

3. Literature review

We begin with theories related to strategy and competitiveness, MNE innovation strategies and EMNE catch-up before exploring the role of location for innovation. Considering the practice focus of the paper, the review has been kept quite brief.

3.1 Strategy and break-out in corporate competitiveness

Traditional strategy-related theories such as resource- and knowledge-based views have often considered business competitiveness implicitly. Research by Porter (1985) and others has tremendous impact on theory and practices related to competitive strategy and competitiveness (Porter, 1990; Momaya, 2001; Ketels, 2008; Cho and Moon, 2011). Adaptation of models such as the diamond seems to give more useful actions for organizational competitiveness and related levels (Momaya, 2001, 2011). Other researchers have explored competitiveness, but often implicitly.

Among alternative approaches to define corporate competitiveness, we focus on one where the role of location of corporate functions is important. Corporate competitiveness in such a context can be defined as the ability of a firm to evolve leadership and strategies needed to execute relevant corporate activities effectively to grow. The activities can happen at different locations across countries and vary from manufacturing or service operations, finance and investment, legal, technology management (including R&D, design and engineering) to M&A and other related to corporate center to enable profitable growth at the overall group level. The growth can be measured on many dimensions and ultimately get reflected in revenues and profits from innovative activities.

Break-out in competitiveness is a natural process of climbing up the ladder of competitiveness for any aspiring firm. It is necessary for growth journey of firms of any type at any stage. It becomes more important for capable firms keen to be MNEs, particularly through radical or breakthrough innovation. The corporate competitiveness can be evaluated on the basis of competitiveness performance of firm or even overall group on relevant factors such as growth of employment, products and services, customers, markets and regions as well as financial, international, social and environmental (Momaya, 2001).

3.2 Multinational enterprise innovation strategies

Knowledge capabilities and innovation are main drivers of firms' competitiveness (Jensen and Szulandski, 2007), knowledge creation (Nonaka and Takeuchi, 1995) and innovation, based on it are major sources of competitive advantage, more so for MNEs that have capabilities to internalize the benefits of geographic distribution of their activities. Knowledge-intensive MNEs may develop FSAs from three possible geographic locations, each associated with particular CSAs: a home country operation, a host country operation or an internal network (Rugman and Verbeke, 2001). The acquisition and generation of new knowledge through home and host cluster relationships may constitute a unique source of new knowledge and innovation for MNEs (Park, 2011; Yao *et al.*, 2013; Nell and Andersson, 2012) and that involves innovation strategies including location of R&D activities across clusters in different countries.

While such knowledge-intensive innovative MNEs are quite prevalent in developed countries, their emergence and journey from developing countries is less known. Innovation is becoming a necessity for profitable and sustainable growth of some EMNEs; they also need to think about journey on relevant innovation dimensions and break-out for corporate competitiveness. As internationalization and acquisitions of firms abroad, even with goal of improving innovation capabilities (Awate *et al.*, 2012),

have often created adverse consequences for several MNEs from India, we hope to have some findings at innovative MNEs from India.

3.3 Emerging-country multinational enterprise catch-up: stages of competitiveness

The "*rise of EMNEs"* in a variety of industries is a phenomenon of high interest to many. Some researcher even classified them as waves. For instance, after the "first wave" documented by Kumar and McLeod (1981) and Lall (1983), Bonaglia *et al.* (2007) proposed the "second wave" and highlighted accelerated internationalization by EMNEs.

As late entrant, EMNEs face many challenges to catch-up. Stage framework of competitiveness can help evaluate their journey. A conceptual framework of stages of international competitiveness was proposed by Momaya (2001) to help firms in their journey from locally and regionally to globally competitive. The concepts have been adapted and tested in related contexts of accelerated competitiveness and growth strategies.

EMNEs are catching up with advanced economy MNEs (AMNEs) even in emerging, high-technology industries, where their knowledge-based disadvantages are the most severe. Such a phenomenon was explained by distinguishing between output and innovation capabilities by taking the context of wind turbine industry and the case of Suzlon from India as an EMNE by Awate *et al.* (2012). Innovation and internationalization capabilities can play a key role in the break-out in the journey across the stages to be internationally competitive and sustain it.

Break-out to higher stages of competitiveness was found to be better construct to evolved based on interaction with industry leaders. Break-out is often defined contextually by different firms and provides flexibility as compared to catch-up.

3.4 Innovative and smart cities

Innovative cities can sustain clusters that support break-out of firms locating critical activities in those clusters. Contrary to some theories, belief in formation of new industrial districts and regions, urban hierarchies and those among them that are especially innovative have been extremely persistent over many decades (Simmie, 2003). Amsterdam, London, Milan, Paris and Stuttgart were featured as innovative cities for differences in their economic and political power.

In the past few decades, select Indian cities such as Bengaluru have tried to become innovative and even smart. While political power of capital city can play a role – particularly for those industries needing government support or regulation – in large countries such as India, other cities can also play a key role, particularly in terms of CHQ for networked global industries. Concept of smart cities has also been evolving Europe, (Caragliu *et al.*, 2011) and is talked about in India also. While such cities can attract new ventures, R&D centers, etc., it will take decades before they can contribute to CHQ of corporates that can rank in Global 500 or 2,000.

3.5 Perspectives on location advantages

Location advantages represent the entire set of strengths characterizing a specific location, and usable by firms operating in that location. Location advantages are often instrumental to the type of FSAs that can be developed by locally operating firms relative to firms operating elsewhere (Verbeke, 2013).

Role of location advantages fostering MNE competitiveness is identified as a high potential field of research in competitiveness. Linkages between location and competitiveness have been evolving with classical work by Dunning. He made a distinction between what he called the location (L) of production effect and the ownership (O) of nationality effect. Still location in the MNE competitiveness was a neglected factor (Dunning, 1998). More recently, emerging findings hint that locating activities in certain regions, clusters or cities shapes corporate competitiveness. Kafouros and Wang (2014) explored role of location choices for intra-group technology transfer and found linkages with performance outcomes.

Very interesting perspectives on location and competitiveness relationship has been provided by Rugman and Verbeke (2008). They provide a 2×2 framework of firm- (or business-) level sources of international competitive advantage. Location of CSAs in one or multiple home bases was mapped on Y-Axis and linkages between FSAs and location in terms of location bound and non-location bound FSAs on *x*-axis. Position in quadrant three transferable FSAs and multiple home bases can be ideal position for many knowledge-intensive MNEs. In this case, management of both the intra-organizational and inter-organizational network may become very complex.

Among alternative perspectives related to location advantages, corporate center and innovation seems to provide richer insights. Clusters represent a strategic component of CSAs: firms can take advantage of clusters as CSA in their home country (home-CSA-cluster) and in their host locations (host-CSA-cluster) and develop FSAs at the headquarter level (FSA-headquarter) and at the affiliate level (FSA-affiliate) (Gugler *et al.*, 2015). As it is not clear whether country or regional agglomeration (for that we use proxy of mega-cities that are still growing in India) provide better location advantages in the case of India, we explore the potential of both – country and city – as crucible of location advantage through innovation.

4. Methods

The study attempts to match methods to the needs of an evolving and complex context. From the methods perspective, the study was evolved in two phases. We identify specific pragmatic methods to address the needs of context and specific phases of study. Exact measures to operationalize the break-out in corporate competitiveness are quite difficult. For practical context of this paper, the break-out can be on stages such as entry into and climb up in ranking such as Global 2000 or Global 500.

Phase 1 *International focus*: trends in country competitiveness viewed from macro as well as micro context of competitiveness of focal firms to identify:

- any distinct patterns of clustering of corporate centers within the large countries; and
- pointers toward more sustainable sources of competitiveness (e.g. created or location advantages).

Phase 2 *India focus*: analysis of locations of firms within India to identify:

- differences among city clusters; and
- differences between two approaches to evaluate competitiveness performance (size and composite) and samples (small and larger).

Phase 1 has a more macro perspective and draws on the strength of qualitative methods. For Phase 2, we adapt elements of comparative case methods (Eisenhardt, 1989; Yin, 2003). The integration of the two is not very tight, but an attempt has been made for triangulation – e.g. use of quantitative data to corroborate findings emerging from qualitative data or cases (Bryman and Bell, 2011). This helps to evolve the propositions that are better grounded in reality in India.

We use comparative case analysis for Phase 2 in this research (Yin, 2003; Siggelkow, 2007). The facts allow us to study relative performance of an incumbent location relative to an emerging location with very high attractiveness. The two cases are theoretically sampled, as they represent two extreme cases of location advantage (Awate *et al.*, 2012). At one extreme is Mumbai, which has stronger entrepreneurs, keen to climb the ladder of competitiveness. But the city may have stagnated in dynamism due to the loss of several traditional industries and other reasons. At the other extreme is an excellent internationlizer – Bangalore – with so many MNCs and born globals. Bangalore also has a distinctive lead in terms of more scalable drivers of competitiveness such as R&D. For instance, in a 2003 survey of 26 international MNE R&D centers in India, Bangalore lead distinctly with 18, whereas Mumbai had only 3 centers. Other studies that have also selected the same pair of city-cluster (Lorenzen and Mudambi, 2013) support our case.

4.1 Data

As highlighted in methods, the study largely builds from qualitative data. At the same time, efforts were made to have quantitative data for more objective findings.

4.1.1 Qualitative data. A review of trends in competitiveness ranks of countries can give clues to interesting patterns and phenomena. Among multiple approaches to evaluate country competitiveness (e.g. Global Competitiveness Report, World Competitiveness Yearbook), the one having better contextual match (Momaya, 2011) was carefully selected to get a more consistent longitudinal views. Countries for benchmarking were selected keeping in mind the comparability dimensions: large and medium, from the West as well as the East.

At micro level, we discuss break-out in corporate competitiveness for the context of locations in India. Specifically, we describe and analyze the competitiveness performance of focal firms of Indian origin (FFIOs) over a horizon. The performance is defined and measured in terms of ascend on the ladder of competitiveness.

4.1.2 Quantitative data. We also explored quantitative data to understand the longitudinal trends in the competitiveness journey and role of location. We use this to make sense of:

- level of difference between India, China and other countries;
- reasons behind stagnation for firms from India;
- patterns of regional differences within India; and
- indicative reasons related to location to explain the patterns.

4.1.2.1 Secondary data. Data were needed on different levels of competitiveness and came from carefully identified and selected sources. To understand the role of location from the country perspective, we analyzed longitudinal trends in a number of focal firms from select countries. Data for the same were collected from Fortune after analyzing

alternate sources. To validate the findings for India further, we also explored the larger sample of Global 2000 firms from Businessweek.

For confirmatory part of emerging findings, a triangulation was done among factual view emerging from quick benchmarking, qualitative findings and analysis of findings from quantitative data.

5. Emerging findings

Factual exploration of the patterns of location for break-out in corporate competitiveness provides quite interesting findings. We synthesize the key findings here. Progression from macro to micro dimensions will be logical.

5.1 International patterns

A review of world-wide locations indicates very high corporate competitiveness for cities (CCC) of some regions. We begin with the Global 500 sample focusing on cities rather than country to get more detailed views. Findings support the view that location shapes ownership advantage, corporate competitiveness and internationalization. More than 63 per cent (on average for the sample in Table III) of corporate centers of a country are located in single city of the country hinting at strong role of clustering. While historical mega cities such as London, Paris and New York still lead, rapidly rising significance of location in East Asian cities is evident (Table III). Tokyo and Beijing have dense clusters. With a high role of state power in China (e.g. through state owned enterprises/SOE) and industry government cooperation, Beijing may soon surpass Tokyo in number of firms and Shanghai and other locations in China may also climb to new heights.

Gaps between India and China are quite vast in several respects. China as represented by Beijing is far ahead in terms of quantity, e.g. number of firms. It is abnormally high in terms of number of firms per unit of population (last column in Table III). Considering the situation in India, some qualitative aspects for Mumbai (e.g. average revenues per firm) are quite good, but Mumbai still has a very long way to go.

5.2 Patterns for firms of Indian origin

Position and trends in location advantages of India and its cities are less clear. India, with large and growing markets, is quite attractive as a country location for any growth seeking MNE. Many MNEs such as GE, Honda, IBM, LG, Microsoft, Nokia, Samsung, Siemens and Suzuki have gained enormous advantages from India. Relative to such gains for international MNEs, slow competitiveness break-out reflected in criteria such as stagnation in number of firms from India in Global 500 indicates relatively lower capabilities and location advantages for FIOs. The number of FIOs in Global 500 stagnated at around 8 over the period 2006 to 2012, while China grew from 16 to 89 (Table II), a massive increase of 73 firms – more than what Japan have in 2013 in total – and perhaps a tough world record. In fact, closer observations at firms from India and China point at other bigger differences in terms of, for instance, employment and exports. For example, while most Chinese firms seem to be climbing up the ladder in Global 500 in terms of ranks, except one, all other Indian firms slide down in 2013 (from 2012; Table IV), some by as much as 70 ranks. In terms of city clusters, the position of Mumbai is significant. While it was bit ahead of Shanghai, it may be left far behind, if it fails to contribute many more firms in near future.

City	Country	No. of Global 500 companies in the city	Global 500 revenues, US$ millions (city)	Average revenues/firm	Population, thousands (2011)	No. of firms/million popula.	Global 500 revenues/population, US$ '000s
Tokyo	Japan	47	22,68,640	48,269	37,217	1.26	60.96
Beijing	China	41	22,22,366	54,204	15,594	2.63	142.51
Paris	France	23	12,85,432	55,888	10,620	2.17	121.04
London	UK	18	11,70,270	65,015	9,005	2.00	129.96
New York	USA	18	9,55,291	53,072	20,352	0.88	46.94
Seoul	South Korea	12	6,40,586	53,382	9,736	1.23	65.80
Osaka	Japan	8	3,76,607	47,076	11,494	0.70	32.77
Mumbai	India	6	2,07,156	34,526	19,744	0.30	10.49

Notes: There are other cities after Osaka with same or higher number of Global 500 firms as in Mumbai; global 500 revenues is aggregate revenue of all Global 500 firms with corporate center (CHQ) in that city

Sources: Developed based on data searched on Global 500, 2012; World Urbanization Prospects

Table III.
Location advantages of leading cities with high corporate competitiveness

Industry	Company name	Sales (in billion US$) 2006	2012	Ranking Global 500 2006	2012	2013	Increase 2006-2013
Energy	Indian Oil	36.5	63.7	153	83	88	65
Industrials	Reliance Industries	18.8	59.5	342	99	107	235
Energy	Bharat Petroleum	17.6	32.2	368	225	229	139
Energy	Hindustan Petroleum	17.1	28.9	378	267	260	118
Financials	State Bank of India	13.8	33.2	498	285	298	200
Consumer discretionary	Tata Motors	4.4	27.1	NA	314	316	NA
Energy	Oil and Natural Gas	16.6	26.3	402	357	369	33
Materials	Tata Steel	3.7	26.7	NA	401	471	NA

Table IV.
Positions and trends for Global 500 firms from India

Note: NA = not applicable
Sources: Developed based on data collected from Global 500 over years

It is clearly emerging that positions at heights on the ladder of international competitiveness are too far for most Indian firms. Despite vast markets and structural advantages, none of the FIOs has still entered in Top 50 in Global 500. Even those in Top 200 (only 2 in 2012; Table IV) have taken quite a long time, despite more than two decades of liberalization. Excessive concentration in the sample of the energy industry for such a large country indicates capability gaps in innovation and competitiveness. While the average pace (revenue jump over a period 2006-2012) has improved significantly over the period, overall pace has been too slow for high impact break-out. One key reason for the slow pace was found to be late and slow internationalization. Export revenues as a percentage of total revenue has been less than 10 per cent for four of the firms for most of their life. There was not even a single Indian firm among the 45 largest MNEs that were classified into "Global", "Bi-Regional" and "Host-Region-Based" (Rugman, 2005).

In such a context, the phenomenon "break-out to higher stages" can be quite useful. It can provide some intermediate steps on the long ladder of global competitiveness, e.g. from locally to regionally competitive (Momaya, 2001). Focusing on lower steps of the ladder, the competitiveness journey in terms of growth seems quite heterogeneous for FIOs. The climb up the ranks in Global 500 or 2,000 is quite remarkable for only few capable FIOs, but very slow for others including the public sector undertakings. If inherited push factors such as population growth, aspirations of young population are factored in, the real competitiveness gains may be even negative for some of the firms, raising serious questions about strategies and capabilities to leverage location advantages for FIOs. If we wish to benchmark on internationalization and innovation, the scope for improvement will be enormous, where city clusters can also play a role for innovation strategies of MNEs (Gugler *et al.*, 2015).

5.3 Corporate competitiveness of city clusters

The role of location for the phenomenon "break-out to higher stages" for focal firms is captured through the construct "CCC". While competitiveness of city clusters is

dependent on key pillars such as economic, socio-cultural and environmental, the focus in this paper is on only one important segment of economic pillar – break-out to higher stages for focal firms. As corporate center activities can play a key role in the break-out, we focus on corporate competitiveness. CCC is defined here as the ability of a city cluster to attract and sustain higher number of corporate centers of firms keen on the break-out, preferably through innovation.

A review of a larger sample focusing on India indicates some interesting findings. Considering the stagnation for India in the sample of Global 500, focus shifted to the larger sample of Global 2,000, where we could get 56 firms – a much larger sample (compared to only 8 in G500) needed for analysis. For the analysis of CCC, India was divided into four geographical regions: East, North, South and West. A leading city cluster of the region was assumed to represent location. For instance, Bangalore represents south India and Mumbai represents west India. The firms in the larger sample were clustered along the locations to have a comparative snapshot of positions and jumps over the period 2006 and 2012 in terms of select competitiveness performance criteria such as revenues, profits and assets.

While the position of Mumbai in the Global 500 sample of India (6/8) gets considerably diluted in Global 2,000 in terms of per cent, Mumbai still scores quite well on several parameters. Details of each of the mega-city cluster in terms of number of firms in Global 2,000 for both end of the period (2006-2013) as well as jump are given in Table V.

In terms of specific factors such as percentage contribution of revenues, Mumbai has retained the lead. In fact, Mumbai improved its contribution to revenues by 5.58 per cent over the period (to reach 57.26 per cent in 2013), despite the financial tsunami of 2008. Similarly, it has a quite high share in terms of assets also.

Comparative analysis of Mumbai and Bangalore as city clusters throws major surprises. Contrary to theory and expectation, Bangalore cluster contributed relatively lesser additional number over the period (only 3, as compared to 4 by New Delhi and 8 by Mumbai; Table V). If we consider, nearby cities Gurgaon (3) and Noida (3), it seems the National Capital Region (NCR) has performed better. NCR is likely to increase its

Locations	No. of firms		Increase in 2013 over 2006 Amounts are in US$ billion		
City (Region)	2006	2013	Sales	Profits	Assets
Mumbai (West)	16	24	268.85	16.43	841.55
National Capital Region (North)	8	14	101.93	5.18	245.47
Kolkata (East)	2	4	21.13	4.11	82.91
Bangalore, Chennai, Hyderabad (South)	4	7	25.09	4.34	152.36
Sub-total (of 4)	30	49	417	30.06	1322.29
Sub-total for India	**33**	**56**	**453.75**	**35.13**	**1,527.14**
Share of Mumbai in India (%)	48.48	42.86	5.58	5.08	−5.02
Share of NCR in India (%)	24.24	25	−7.46	−10.41	−2.05
Share of South Region in India (%)	12.12	12.5	1.03	3.61	1.49
Share of the 4 in India (%)	90.91	87.5	91.9	85.57	86.59

Notes: Number of firms are in the sample of Global 2000 (Businessweek); share of city (e.g. Mumbai) is % share by no. of firms in total sample for India

Table V.
Positions and trends in corporate competitiveness of key locations in India

contribution rapidly, at least in quantity terms, if the trend in India is similar to that in many parts of the world, where capital city also attracts corporate centers. However, on quality fronts, Bangalore or Mumbai can retain or even grow their contributions, if leadership of the cities can understand dynamic role of location for innovation and competitiveness and execute strategies that are harmonious and coherent. For instance, the stability of governance systems mattered in East Asian scale-up and may matter in India too.

6. Discussion and implications

With this paper, an attempt has been made to understand the role of location in the phenomenon of "break-out to higher stages". The emerging findings provide an evidence to counter the perception that emerging smarter cities with high internationalization and innovation activities can help the firms to break-out to higher stages much faster. Some interesting patterns and contrasts about the role of location for the break-out also emerged.

The clustering of corporate centers in some Asian cities such as Beijing and Tokyo is remarkable (Table III). Even more interesting is the high potential for Beijing and the sustainability of Tokyo. Industrial and technological competitiveness (Momaya, 2001; Mittal *et al.*, 2013) of these countries and city clusters may be among key factors supporting the corporate competitiveness.

Contrasting views are emerging about the role of location for the break-out of focal firms. On one hand, a focal firm from India with its corporate center in Mumbai, such as Reliance Industries Limited (RIL), has achieved remarkable catch-up for growth domestically and scaled-it up (Table IV) through accelerated internationalization (Bonaglia *et al.*, 2007). It has achieved leading positions in several segments of the broad energy and materials industries, not only in India but also worldwide. Among several facets of its contribution to India's economic growth, "14 per cent of India's total exports" is perhaps the most remarkable. While RIL was lagging behind select software services FFIOs till about 2006, in terms of forex earnings, the non-linear scale-up has made its forex earnings more than the combined ones of Infosys, Mahindra-Satyam, TCS and Wipro by 2012. Although we may consider RIL as an exceptional case, among the Global 500 sample companies from India, majority of the firms that have impactful international competitiveness are having their corporate center in Mumbai. For instance, Tata group focal firms such as Tata Motors and Tata Steel, that made significant impacts by accelerated internationalization received help from mature Tata Group CC. and State Bank of India, the bank with slow but steady international business growth, all have corporate centers in Mumbai.

On the other hand, such positives of Mumbai are neither matching the real potential of Mumbai nor sufficient for India. As the first Indian city to experience economic, technological and social change since 1668, Mumbai had several inherited location advantages (Cho and Moon, 2011) and with created advantages such as entrepreneurship (including intrapreneurship; Bhardwaj *et al.*, 2007), clusters of related and supporting industries in Maharashtra or nearby industrious states, it had the potential to contribute at least a dozen firms to Global 500, a long ago (i.e. one-forth of Tokyo, the capital of aged Japan). If not Mumbai, emerging locations such as Bangalore (several advantages discussed above), NCR Delhi, Chennai or Kolkata should have contributed through their corporate competitiveness. When compared to Beijing's

superb contribution, the corporate competitiveness of NCR is quite worrisome (just one firm as compared to Beijing's 41 in 2013). Overall, it seems that advanced economy MNEs (AMNEs) are much better off at gaining competitive advantages by locating select activities in India, as compared to local firms. This may be partly attributed to knowledge and innovation capabilities of AMNEs (Mudambi and Swift, 2010; Awate *et al.*, 2012). These have major implications to improve location advantages in India. Let us now focus our discussion on drawing implications based on the above findings at the two levels.

6.1 Focal firm level.

The phenomenon of "break-out to higher stages" is very interesting, but less researched, particularly in India and in context of the role of corporate center. To address the core question – does location matter for the break-out? – we explored several dimensions. The patterns in the findings show that location still matters, despite waves of globalization, borderless world or invisible continent in the new economy (Ohmae, 2000). A more specific dimension of location – cities – also matters, particularly for corporate competitiveness. The pattern of exceptional performance of some Asian cities, and their potential and sustained excellence, indicates that the location of a corporate center may have major implications for competitiveness and growth of MNEs worldwide.

For focal firms from India, having a corporate center in Mumbai enhances their chances of the break-out. The best jumps among Indian firms over the period 2006-2013 were for firms having corporate center in Mumbai (Table V). Space and other constraints may make a mega-city less competitive, but the city may still retain its corporate competitiveness, if we take a little larger picture of urban agglomeration. Therefore, important corporate functions of a focal firm may get dispersed in suburbs or nearby cities. For instance, in case of Mumbai, R&D, Design and Engineering functions of several focal firms are now shifting toward Navi Mumbai (New Bombay) or nearby cities such as Pune. Facts (Table V) imply that the location of corporate center in Mumbai is still important for several industries in India, including innovation-based biopharmaceutical.

MNEs very keen on leveraging multiple clusters for break-out to higher stages of innovation should thoroughly review their innovation and other capabilities. Their basic economic engine should be robust to have a steady cash flow and profitability. They should first enhance the maturity of their basic competitiveness processes (e.g. management of human resources, operations, supply chain, financial and technology management), before they can embark on internationalization of their design, engineering and R&D. Excessive focus on output capabilities (Awate *et al.*, 2012) without proper balances can create crisis of survival for firms.

Large revenue gaps between firms from India and other countries indicates opportunities on multiple fronts. Mumbai is far behind other leading cities on most criteria (see the last two columns in Table III). While innovation capabilities can offer more sustainable break-outs, they can demand rare resources, recombination capabilities and hence time. In parallel, break-outs on output capabilities measured on revenues and profits may be desirable for some firms.

6.2 City cluster level

The high corporate competitiveness of some cities such as Beijing and Tokyo is clearly visible (Table III). Viewed from the perspective of focal firms, clusters and corporate competitiveness, Indian cities have a lot to learn from innovative Asian cities. The achievements of Bangalore or Mumbai are remarkable, but nowhere comparable to the strides made by some Asian cities in the past two decades. For instance, multiple jump of Beijing over the period in number of firms in Global 500 (41 in 2013 from 15 in 2006) would be almost impossible for any other world city to achieve in the next two decades. Asian cities such as Tokyo, Beijing and Shanghai seem to have more knowledge intensive clusters that foster innovation and local MNEs competitiveness.

On the other hand, contrasting patterns regarding firms from Bangalore making an adequate impact highlight the challenges for contenders, including longer time-lags involved in corporate competitiveness of a city. Since the rise of Silicon Valley, the role of location for innovation and competitiveness has attracted renewed attention. Interest in competitiveness of locations has been notably stimulated by the work of Michael Porter and his team. The research team tried to study the location of corporate centers across continents since 1980s, but contribution of locations in India was too miniscule to be counted at that time. As Bangalore started attracting firms (particularly in IT and later even R&D units of MNEs), it has been hailed as the "Silicon Valley of India". Bangalore has many advantages and achievements, for instance, in terms of India's leading institutions (e.g. Indian Institute of Science [IISc.], Indian Institute of Management [IIM]), public sector units [e.g. Hindustan Machine Tools (HMT), Hindustan Aeronautics Limited (HAL)], innovative knowledge-based born global firms and MNEs. The findings in our study show that the dynamics of location, innovation and competitiveness is much more complex, and the results for Bangalore are not very clear. A growing cluster of MNE R&D centers indicates that MNEs are very successful at leveraging knowledge-based and innovation advantages. At the same time, less than expected catch-up by Indian firms in an even larger sample (Table V), despite taking the whole cluster of three dynamic cities of south India, displays gaps in their capabilities.

Despite increasing fragmentation among several locations in India, the city with greener and more innovative perspectives may be able to drive the contribution of India to the world. This seems to be in line with the pattern worldwide; even for more competitive or larger economies, too many clusters of corporate center do not seem sustainable. Mumbai had some inherited advantages such as a port, relatively greener public transport system, institutions and cosmopolitan culture. It is also home to a majority of the largest firms from India, particularly ones that are competitive in traditional industries and may catch-up on innovation also. Neither the existing or new ICT or innovation focused smart cities will be able to provide complete cluster ecosystem megapolis Mumbai can provide nor it will be desirable to excessively fragment corporate competitiveness clusters in India considering its limited innovation and internationalization capabilities.

It seems that the life cycle of locational competitiveness may be quite long, and some locations have the revitalization capability to sustain. For instance, Tokyo seems to have this capability, and it is quite common to read about a vision of a vibrant and lively city for 1,000 years (OMY, 2007). Several systems in firms, cities and country supported the phenomenal rise of Japanese industry (Furstenberg, 1972) and its sustenance despite aged population. Similar vitality has existed in other global cities such as London. In the

Indian context, external forces have often encouraged change. Japan and Korea have an exceptionally large number of focal firms (Table III), indicating toward some advantages such as dense social and knowledge networks; this can be an exciting area of further research. Synergy among cities in a region (e.g. Bangalore and Chennai, Mumbai and Pune) can help enhance complementary capabilities and competitiveness of firms.

7. Concluding remarks

The key objective of this paper was to analyze the patterns of location for break-out in corporate competitiveness so as to discern the differences among city clusters across countries and within India. The study starts with the core question: How does the location matter for competitiveness? More specifically, which cities seem to support high innovation and corporate competitiveness? The contributions of this paper come in terms of concepts, findings and characterization of the phenomenon *"break-out to higher stages of competitiveness"*. The role of location for competitiveness of focal firms was explored through the concept "corporate competitiveness"; the concept was adapted for city context as "CCC". Exploring the corporate competitiveness of cities, to explain location related FSAs of the EMNE break-out phenomenon, is perhaps the most significant contribution of this paper. There are surprising findings about the role of location for competitiveness.

The enormous potential to enhance contributions from India and specific cities became evident. Findings corroborate the advantages of location with stronger innovation clusters such as Bangalore, particularly for technology-based "born global" firms. Harmonization of the entrepreneurial edge of Mumbai, or the innovation edge of emerging locations such as Bangalore or Chennai, with the "political and bureaucratic" advantage of NCR Delhi for break-out needs to be evolved. Indian firms have a very long way to go in terms of real international competitiveness and maturity of MNEs. So far, Mumbai has been sustaining and has got a high potential to innovate. There is enormous potential of research and action, when we move from criteria focused on output capabilities (e.g. trends in Global 500) toward criteria focused on innovation capabilities (e.g. most innovative MNEs). Whether the growing city-cluster can enhance its contribution significantly will depend on synergy, cooperative strategies (Momaya, 2008) and the innovation capabilities of the focal firms. This opens up an exciting stream of research on clusters, innovation and competitiveness.

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