Investigating the Presence of National Capitals as Ranked Global Cities

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Abstract. Urban competitiveness has become an undeniable reality of our world. Cities around the world create strategies and development plans to enhance their competitiveness and reach worldwide fame and attraction for different segments. This competition has widened to reach different aspects of social, economic, physical and environmental aspects of cities. Along the years different methodologies and criteria were proposed to create a systematic assessment of cities worldwide and rank their competitiveness. The results of such assessments are published in indices; e.g. Global Power City Index, Global Power City Index, etc. Each index has its own set of indicators that cover different aspects of cities; e.g. economy, environment, accessibility. Sample cities from all over the world are graded and ranked accordingly. The cities that achieve top ranking in those global assessment lists are called global cities. This paper aims to investigate if being a national capital can be related to becoming a global city. This is through the study of two global city rankings; Global Power City Index (GPCI) and Global Cities Index (GCI), for three successive years; 2016, 2017, 2018. It is shown that around 50% of ranked cities are national capitals across both ranking system and over the three years covered in this research. European national capitals reach 66% of those featured, followed by Asian capitals with around 33%. The presence of capital cities is also evident in within each indicator of the Global Power City Index (GPCI). In general, evident presence can be linked to national capitals especially those of Europe and Asia.

1. Introduction

The growing urbanization worldwide and the evolution of all forms of connectivity either physical; shipping, flights, etc. or virtual; social networks, online platforms, etc. has enhanced the globalization phenomenon worldwide. Today, a city doesn’t just develop on its own pace or views, nor even at the pace of its close neighbors. In fact, cities today are in a state of global competition. The possible and continuous shifts of investments, industries, researchers, workers, etc. create pressure on all cities worldwide to enhance themselves to maintain or enhance their position within the global competitiveness. This competition is continuously changing and transforming to cover different aspects of cities. Nowadays, it is not just a matter of land value of location, it has grown to include several aspects of social, economic and environmental dimensions. This escalating and evolving urban/city competition became of interest to several entities and researchers to understand its phenomena through assessment of the assets and dimensions of cities that lead them to become top global cities or fail them to do so. Each assessment index sets a variety of indicators that are examined across a sample of worldwide cities and the results are shown as a ranking of the top global cities. This research studies the concept of urban competitiveness and examines two indices of global city rankings across three consecutive years.
2. Methodology
Two global city rankings are studied to identify the presence and nature of the cities that get the top ranking, with special focus on the representation of national capitals. The top 25 cities worldwide in The Global Cities Index (GCI) and the Global Power City Index (GPCI) lists are compared and analysed to determine the percentages of national capitals and of those of each continent specifically. Then the GPCI indicators are studied separately to identify the presence of national capitals within each specific indicator.

3. Research limitations
Two indices of global city ranking were chosen for this research as they are both of annual editions and thus are expected to provide an accurate and updated view of the world city ranking and also make the comparison more systematic and viable.

The GCI lists top 25 cities worldwide while the GPCI lists the top 42 cities. For the purpose of adequate comparison, the researcher only used the top 25 cities of the GPCI to compare with their peers from the GCI.

The individual study of the indicators was limited to the GPCI only as the GCI didn’t publish the detailed ranking of individual indicators. The authors attempted to reach the publisher for detailed item by item city ranking but got no reply.

Initially, the 2019 editions of GCI and GPCI were not yet published upon the submission of the abstract so they were not included in the research. Upon their publication the authors decided to add them as an additional follow up after the original comparison of the previous editions as they support the original conclusions.

4. Urban competitiveness
With the growing phenomenon of globalization, cities worldwide are increasingly connected for several purposes but above all, economic purposes. These purposes grew and developed into a world urban competitiveness for goods and investments [1]. The competition was exaggerated with the continuous developments in connectivity both physical; through various transportation modes and virtual; through the internet and satellite connections. Consequently, cities across the globe have become in state of competition. With time, the competition became more global and intense as it expanded to aspects of quality of life and environmental conditions along with economic ones to attract residents; i.e. workforce as well as investors [2]. The global state of urban competitiveness results in a continuous state of shift in elements and resources worldwide in search of the greatest possible benefit [3]. This, inevitably, pushes cities worldwide to change continuously to cope with the escalating competition for residents, tourists and investors [4]. As urban competitiveness grew into a more complex form of global effects, it became more difficult to understand and assess its process and results. Researchers suggest several indicators and indices that cover multiple aspects and dimensions and aim to create reliable tools for analysis and assessment of world cities in terms of their competitiveness [3]. As the global competition is in continuous escalation, some researchers claim that capital cities have more assets that support their efforts in the global competition than other cities of the same country [5].

5. Ranking global cities
Evolving from the increasing urban competitiveness was the need for an evaluation methodology. Researchers and institutions worked to develop and determine parameters and indicators for assessment of urban competitiveness taking into consideration its diverse nature [3]. Several institutions proposed such methodologies as rankings for cities’ global value or effect. Each methodology proposes a set of indicators through which the cities are ranked in an index from the highest to the lowest competitive.

The Global Power City Index (GPCI) is issued by The Mori Memorial Foundation’s Institute for Urban Strategies. It was developed by several researchers including Sir Peter Hall and it is also peer
reviewed by international experts. The first issue was in 2008 and it has been issued and updated yearly since then. It sets six main indicators; Economy, Research and Development, Cultural Interaction, Livability, Environment and Accessibility. The study sample grew from 42 cities in 2016 to 44 cities in 2017, 2018 [6].

Global Cities Index (GCI) is developed by A.T. Kearney; a global management consulting firm. It was first issued in 2010 and is yearly issued and updated [7]. It identifies five main indicators; Business activity, human capital, information exchange, cultural experience and political engagement.

These indices, among others are not only a tool to understand the current situation but also a tool to help cities maintain and improve their placement within global urban competitiveness [2].

6. Capital cities as global cities
The GPCI lists the top 25 competitive cities worldwide, within which are almost 50% cities that are national capitals. Throughout the years, the ranking of cities changes, some may be added or removed according to updated indicator results, but national capitals maintain a valuable percentage of the total number. This is shown in the three consecutive years 2016, 2017, 2018 with a total of 12, 12, 13 capital cities of the top 25 ranked global cities respectively. This shows an approximate value of 50% repeated yearly throughout 2016, 2017, 2018 with exact values of 48%, 48%, 52% national capitals respectively. The following Table 1 shows the discussed global city rankings of the 3 consecutive years under examination.

|  | GPCI-2016 | GPCI-2017 | GPCI-2018 |
|---|---|---|---|
| 1 | London | London | London |
| 2 | New York | New York | New York |
| 3 | Tokyo | Tokyo | Tokyo |
| 4 | Paris | Paris | Paris |
| 5 | Singapore | Singapore | Singapore |
| 6 | Seoul | Seoul | Amsterdam |
| 7 | Hong Kong | Amsterdam | Seoul |
| 8 | Amsterdam | Berlin | Berlin |
| 9 | Berlin | Hong Kong | Hong Kong |
| 10 | Vienna | Sydney | Sydney |
| 11 | Frankfurt | Los Angeles | Stockholm |
| 12 | Shanghai | Frankfurt | Los Angeles |
| 13 | Los Angeles | Beijing | San Francisco |
| 14 | Sydney | Vienna | Toronto |
| 15 | Stockholm | Shanghai | Frankfurt |
| 16 | Zurich | Stockholm | Zurich |
| 17 | Beijing | San Francisco | Vienna |
| 18 | Toronto | Zurich | Copenhagen |
| 19 | Copenhagen | Toronto | Chicago |
| 20 | Barcelona | Copenhagen | Boston |
| 21 | Istanbul | Brussels | Vancouver |
| 22 | Osaka | Chicago | Madrid |
| 23 | Brussels | Dubai | Beijing |
| 24 | San Francisco | Barcelona | Barcelona |
| 25 | Chicago | Boston | Brussels |
| Capital cities % | 48% | 48% | 52% |

The national capitals of Europe count as 66% of the national capitals within ranked global cities. Asian national capitals reach 33% of the national capitals in this global cities ranking. European cities
in general constitute 44-48% in this ranking across the three consecutive years of the study. Asian cities hold 20-28% of the total cities ranked which is equal to the percentage of north American cities. To compare these values with those of the GCI, the list of the top 42 competitive cities worldwide presented in the GCI was limited by the researcher to the top 25 only. Within the top 25, above 50% of the cities are national capitals. Taking into consideration the yearly updates and changes in rankings, national capitals maintain the leading percentage to the total ranked cities. This is displayed in the three consecutive editions of 2016, 2017, 2018 which show the total of 14, 13, 14 capital cities with percentages of 56%, 52%, 56% national capitals respectively. The following Table 2 shows the top 25 cities according to the GCI for the discussed years 2016, 2017, 2018.

Table 2. Top 25 Ranked Global cities according to GCI for 2016,2017,2018 and the percentage of national capitals present in each year [7, 10, 11] compiled by the authors

|        | GCI-2016 | GCI-2017 | GCI-2018 |
|--------|----------|----------|----------|
| 1      | London   | New York | New York |
| 2      | New York | London   | London   |
| 3      | Paris    | Paris    | Paris    |
| 4      | Tokyo    | Tokyo    | Tokyo    |
| 5      | Hong Kong| Hong Kong| Hong Kong|
| 6      | Los Angeles| Singapore| Los Angeles|
| 7      | Chicago  | Chicago  | Singapore|
| 8      | Singapore| Los Angeles| Chicago |
| 9      | Beijing  | Beijing  | Beijing  |
| 10     | Washington| Washington| Brussels |
| 11     | Seoul    | Brussels | Washington|
| 12     | Brussels | Seoul    | Seoul    |
| 13     | Madrid   | Madrid   | Madrid   |
| 14     | Sydney   | Berlin   | Moscow   |
| 15     | Melbourne| Melbourne| Sydney   |
| 16     | Berlin   | Toronto  | Berlin   |
| 17     | Toronto  | Sydney   | Melbourne|
| 18     | Moscow   | Moscow   | Toronto  |
| 19     | Vienna   | Shanghai | Shanghai |
| 20     | Shanghai | Vienna   | San Francisco|
| 21     | Buenos Aires| Boston | Vienna |
| 22     | Amsterdam| Amsterdam| Amsterdam|
| 23     | San Francisco| San Francisco| Barcelona |
| 24     | Boston   | Barcelona| Boston   |
| 25     | Istanbul | Istanbul | Buenos Aires|

Capital cities %
56% 52% 56%

European capitals hold 57% of the ranked national capitals. Asian capitals are 28% of the national capitals within this global ranking. European cities in general represent 36-48% of total ranked cities. Cities of North America rank second most present with a percentage of 28%, while cities of Asia follow with 24%. These values are almost constant for the three consecutive years of the study.

There are ten common national capitals between both indexes and spanning through the three years as well. These national capitals are limited to Europe (London, Paris, Amsterdam, Berlin, Vienna and Brussels) and Asia (Tokyo, Singapore, Seoul and Beijing).

7. Capital cities presence in indicators
This part investigates the presence of capital cities in the top 25 cities of each indicator separately. This is done on the six indicators that form the ranking of the GPCI. Unfortunately, it can’t be done on the GCI indicators as the detailed results of each indicator are not published. The separate indicator
ranking also shows a significant percentage of capital cities in each indicator and across the three years of study as shown in Table 3.

Table 3. Percentage of national capitals present in Global ranking indicators according to GPCI [6, 8, 9] compiled by the authors

| Indicator             | 2016 | 2017 | 2018 |
|-----------------------|------|------|------|
| Economy               | 48%  | 48%  | 44%  |
| Research and Development | 44%  | 48%  | 48%  |
| Cultural interaction  | 56%  | 52%  | 56%  |
| Livability            | 44%  | 52%  | 56%  |
| Environment           | 52%  | 48%  | 44%  |
| Accessibility         | 52%  | 48%  | 56%  |

The economy indicator shows 44-48% national capitals across the three years, so does the research and development indicator. The cultural interaction indicator shows the highest presence of capital cities, ranging between 52 and 56% of the top 25 cities. The environment indicator shows 44-52% national capitals. The accessibility indicator starts at 48% and reaches up to 56% of the top 25 cities in this category. This shows a consistent presence of national capitals across all indicators with an average of almost 50%. The presence of national capitals is most significant in the indicator of cultural interaction. This can be attributed to their roles as seats of governments, and hosts of international events, organizations and embassies as well as renowned cultural and educational institutes.

8. Ranked global cities in the context of world cities
The top 25 ranked global cities within the two ranking systems are within the cities of population of one million and above according to a United Nations report in 2018 (United Nations, Department of Economic and Social Affairs, Population Division, 2018). These 25 cities comprise 4.5% of the total world cities of 548. Cities within the ranked global cities and not national capitals count as 2% of the total 548 cities of population of one million and above.

The national capitals worldwide can be attributed to the number of world countries. The number of countries with United Nations membership are 193 with two extra countries as permanent observers non-member states, which makes a total of 195 (United Nations, 2012). The national capitals listed among the top 25 ranked global cities range between 12-14 cities. These cities constitute 6-7% of the 195 national capitals of the world.

9. Follow up on 2019 indices
The national capitals maintain their presence in the 2019 edition of both indices; the GCI and the GPCI. The capital cities hold 48% of the top 25 cities of GPCI and 56% of those listed in the GCI. This is consistent with the results of the previous years of 2018, 2017 and 2016 as an average of 50% of the top ranked global cities is of national capitals.

The capital cities that are common in the 2019 editions of both indices are mainly of Europe (London, Paris, Amsterdam, Berlin, Vienna) and Asia (Tokyo, Singapore, Seoul and Beijing). These national capitals continue to maintain their presence as in the previous editions of 2016, 2017 and 2018 with the exception of Brussels that maintains its presence in the GCI but isn’t present in the GPCI edition of 2019. The following Table 4 shows the top 25 ranked cities of GCI and GPCI and highlights the national capitals among them.

The individual indicators ranking of GPCI edition of 2019 shows that the presence of national capitals in all indicators ranges between 40% and 56% of the top 25 ranked global cities. This is also similar to percentages of the earlier editions with some minor variations in the indicators. The following Table 5 shows the percentage of national capitals in the top 25 cities in each indicator.
individually for the previously studied years 2016, 2017, 2018 and the addition of the latest results of 2019.

Table 4. The top 25 ranked global cities in GCI and GPCI in 2019 [12, 13] compiled by the authors

| Rank 2019 | Global Power City Index | Global Cities Index |
|-----------|-------------------------|---------------------|
| 1         | London                  | New York            |
| 2         | New York                | London              |
| 3         | Tokyo                   | Paris               |
| 4         | Paris                   | Tokyo               |
| 5         | Singapore               | Hong Kong           |
| 6         | Amsterdam               | Singapore           |
| 7         | Seoul                   | Los Angeles         |
| 8         | Berlin                  | Chicago             |
| 9         | Hong Kong               | Beijing             |
| 10        | Sydney                  | Washington          |
| 11        | Melbourne               | Sydney              |
| 12        | Los Angeles             | Brussels            |
| 13        | Madrid                  | Seoul               |
| 14        | Stockholm               | Berlin              |
| 15        | Zurich                  | Madrid              |
| 16        | Toronto                 | Melbourne           |
| 17        | Frankfurt               | Toronto             |
| 18        | San Francisco           | Moscow              |
| 19        | Dubai                   | Shanghai            |
| 20        | Copenhagen              | Amsterdam           |
| 21        | Vienna                  | Boston              |
| 22        | Barcelona               | San Francisco       |
| 23        | Vancouver               | Barcelona           |
| 24        | Beijing                 | Buenos Aires        |
| 25        | Boston                  | Vienna              |

Capital cities % 48% 56%

Table 5. Percentage of national capitals present in Global ranking indicators according to GPCI [6, 8, 9, 12] compiled by the authors

|          | 2019  | 2018  | 2017  | 2016  |
|----------|-------|-------|-------|-------|
| Economy  | 40%   | 44%   | 48%   | 48%   |
| R&D      | 52%   | 48%   | 48%   | 44%   |
| Cultural interaction | 56%  | 56%   | 52%   | 56%   |
| Livability | 52%  | 56%   | 52%   | 44%   |
| Environment | 48%  | 44%   | 48%   | 52%   |
| Accessibility | 52%  | 56%   | 48%   | 52%   |

10. Conclusion
Although being a national capital and being ranked as a global city are not mutually exclusive, there are obvious indicators and evidence of the strong presence of capital cities as ranked global cities. It is worth mentioning that the national capitals compose 48%-56% of the ranked global cities within two of the international city ranking systems and throughout three consecutive years; 2016, 2017 & 2018. The following Figure 1 shows the discussed percentages and the average representation of national capitals which reaches 50% at its lowest. The latest issued global city rankings of 2019 continue to
display the same discussed trends among both indicators. This affirms the strength and competitive edge of capital cities but also shows that non-capital cities could as well become as effective and globally ranked. The presence of national capitals is especially emphasized in the cultural interaction indicator. It is of essence to put into consideration that the capital cities ranked as global cities are 6-7% of the national capitals worldwide, while the rest of the ranked cities are only 2% of the world cities of comparable population.

Figure 1. The percentage of national capitals in global city ranking systems (GPCI & GCI) and the average representation

It is also important to consider that the presence of cities in both global city ranking systems is more inclined towards Europe, Asia and North America. This applies to cities in general as well as national capitals. European cities constitute up to 48% of the featured cities in the top 25 list, followed by North American and Asian cities with up to 28% of the featured cities.

This indicates that the presence of national capitals among ranked global cities is of higher possibility than that of other cities of comparable population. This is especially evident in cases of national capitals of countries in Europe and Asia.

References
[1] Turok I. Cities, Competition and Competitiveness: Identifying New Connections. In: Buck N, Gordon I, Harding A, Turok I, editors. Changing Cities: Rethinking Urban Competitiveness, Cohesion and Governance. PALGRAVE MACMILLAN; 2005. p. 25–43.
[2] Ichikawa H, Yamato N, Dustan P. Competitiveness of Global Cities from the Perspective of the Global Power City Index. Procedia Eng [Internet]. 2017;198(September 2016):736–42. Available from: http://dx.doi.org/10.1016/j.proeng.2017.07.125
[3] Ni P, Kamiya M. Global Urban Competitiveness: Theoretical Framework. In: Ni P, Kamiya M, Ding R, editors. Cities Network Along the Silk Road: The global urban competitiveness report 2017. 1st ed. Singapore: Springer Nature Singapore & China Social Sciences Press; 2017. p. 15–29.
[4] Zenker S, Eggers F, Farsky M. Putting a price tag on cities: Insights into the competitive environment of places. Cities [Internet]. 2013;30:133–9. Available from: http://dx.doi.org/10.1016/j.cities.2012.02.002
[5] Anttiroiko AV. City branding as a response to global intercity competition. Growth Change. 2015;46(2):233–52.
[6] Mori Memorial Foundation. Global Power City Index 2018. 2018.
[7] A.T. Kearney. Global Cities 2016. 2016.
[8] Mori Memorial Foundation. Global Power City Index 2016. 2016.
[9] Mori Memorial Foundation. Global Power City Index 2017. 2017.
[10] A.T. Kearney. Global Cities 2017: Leaders in a World of Disruptive Innovation. 2017.
[11] A.T. Kearney. 2018 Global Cities Report. 2018.
[12] Mori Memorial Foundation. Global Power City Index 2019. 2019.
[13] A.T. Kearney. A Question of Talent: How Human Capital Will Determine the Next Global Leaders. 2019.