Does City Size Matter? City Brand Index VS Population Size

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Abstract Purpose - within the semi-science of the most influential place rankings, a trend is observed that these rankings discriminate places at both extremes of the spectrum which leaves cities such as Riga but also Tokyo and New York unmentioned, time and again. We view the established rankings as having strong biases favouring a narrow group of cities that change places from year to year to fill the top ten of cities. The purpose of this paper is to confront consumer-based city brand index versus population size and discuss the need for city size classes while creating and presenting place brand rankings. Design/methodology/approach - the conclusions of this study were made from confronting the primary data to the secondary. The primary data come from sample frame of 426 respondents from all the Latvian cities depending on weight of their population and were used to create the consumer-based city brand rankings. The secondary data consisted of city size rankings which were used to evaluate the correlation with previously acquired city brand rankings. Findings - this study shows that in general population size does not matter exclusively - in theory every small city can compete with a bigger one in mental maps of human being. In reality this ability is fixed to an average within the certain *fluctuation corridor*. We found out that in average a city can be 2 times smaller, but at the same time have 3.5 times higher brand index with the total handicap of 5.5 times. It means that in human perception cities are equal opponents only if their size difference is not higher than 4 to 6 times. If this average is exceeded the probability to be an equal opponents is just theoretical. Practical implications - we suggest introducing city classes within 4 - 6 size times while measuring and representing consumer-based city brand rankings. It will provide a more objective representation of cognitive data especially if dealing to get representative rankings for cities of different size. Originality/value - the main contribution of this paper are the size VS brand index averages clearly showing correlation between perceives brand value and city size.

Keywords City Brand, City Brand Index, City Size

1. Introduction

In recent years the ranking of place brands has become increasingly popular with the different measurement tools proposed such as *Anholt's GfK Roper City Brands Index* as probably the most famous, *The Saffron European City Brand Barometer*, *City Brand Value Index (CBVI)* by "Eurobrand", *Innovation Cities Top 100 City Rankings* by the Global Innovation Agency and similar. Within the ranking on could almost say that some more than others are more highly perceived, or broadly recognised, such as *The Economist's World's Most Liveable Cities Index* or *Monocle's Most Liveable Cities Index* which popularise to an ill-defined audience which top 10 cities are the most desirable urban spaces on the planet. Most of mentioned ranking methods are coming from business rather than academic sources.

Anholt (2007) argues that places are chosen for two reasons – the good reason and the real reason. Good reasons are more broadly confined to rational decision-making. Real reasons are those instantaneous, emotional, deep-rooted good or bad feelings. The approach used to get city rankings either focuses on "the good or the real reason" or more rarely represents the mixture of both. Mostly city brand rankings are focusing on the subjective part of human decision-making known as consumer-based brand equity models. Such an approach is seen as bottom-up and generally studies how a brand is perceived by consumers by collecting primary survey data.

The second approach is company-based (Atilgan *et al.*, 2005) and measures the real characteristics of the place by using secondary data such as population size, budgets, investment or tourism exports. Studies by Fetscherin (2010) show that this approach is more useful when measuring nation brands as it typically depends upon access to secondary data. Nevertheless the company-based approach is used by *Eurobrand* to get their *City Brand Value Index (CBVI)* which as they admit is based on secondary data from *Eurostat* and *World Bank*.

Anholt's GfK Roper City Brands Index is consumer-based and collected from the poll platform and based on the *City Brand Hexagon* consisting of the Presence, the Prerequisites,

the Place, the People, the Pulse and the Potential of the city. These six aspects of the city brand are summed up in the city brand hexagon, which forms the basic structure of the city brands index. *The Saffron European City Brand Barometer* looks at two different cognitive qualities: *city's asset strength* based on four factors (pictorially recognition, quantity/strength of positive/attractive qualities, conversational value and media recognition) equally weighted and *city's brand strength* (pride and personality of its people, distinctive sense of place, ambition/vision, business climate, current recognition and perceptions).

Rankings can give valuable information on a specific city and how it is performing compared to other places. The problem of being put against one another is within the question of being equal opponents. Are London and Riga equal opponents? Maybe yes and maybe not. If yes, then to what extent. Within the most influential place rankings, we observe a trend that these rankings discriminate places at both extremes of the spectrum which leave cities such as Riga but also Tokyo and New York firmly out of the sought-after top 10, time and again. This peculiarity has not been discussed or studied academically and we view the established rankings as having strong biases favouring a narrow group of cities than change place from year to year to fill the top ten of cities. For instance in *Anholt's GfK Roper city Brands Index* (source: Anholt, 2007a), Riga, the capital of Latvia with a population of 710,000, is put on the same scales with London and Paris or Tokyo being multimillion mega poles, without considering even theoretical chances to be equal opponents.

Table 1. Anholt's GfK Roper City Brand rankings (source: Anholt, 2007a)

Rank		Score	Rank		Score
1	Sydney	65.60	21	Dublin	59.83
2	London	65.33	22	Edinburgh	59.61
3	Paris	64.96	23	Singapore	59.42
4	New York	64.21	24	Chicago	59.29
5	Rome	64.11	25	Oslo	59.12
6	Melbourne	63.42	26	Hong Kong	58.78
7	Barcelona	62.64	27	The Hague	58.75
8	Vancouver	62.45	28	Prague	58.71
9	Amsterdam	62.36	29	Manchester	58.13
10	Montreal	62.35	30	Helsinki	57.65
11	Toronto	62.31	31	Rio de Janeiro	56.45
12	Berlin	62.01	32	Budapest	56.11
13	Madrid	61.99	33	Seoul	56.05
14	Geneva	61.93	34	Beijing	55.62
15	Milan	60.92	35	Moscow	55.09
16	Copenhagen	60.82	36	Reykjavik	54.98
17	Stockholm	60.64	37	Warsaw	54.38
18	Brussels	60.42	38	Johannesburg	54.20
19	Auckland	60.27	39	Istanbul	53.37
20	Tokyo	60.23	40	Riga	52.74

It may be argued that due to its urban weight Riga is city of different weight class doomed to compete together with similar others. There are parallels here with sports, especially with the weight lifting where the men's competitions are divided into 8 body-weight categories. We argue that there is positive correlation between city size and city brand rankings so the larger cities have tendency to be higher in their ranking than those being small. Hence, we see this is a weakness that the city size strongly favours larger cities. At the same time we admit that small cities are capable to compete the big ones, but only to the certain average. The purpose of this paper is to confront consumer-based city

brand index versus population size and discuss the need for city size classes while creating and presenting consumer-based place brand rankings. Never before consumer based city brand rankings were size factored in, however some traces of awareness regarding the importance of size can be noticed in literature. For instance, *The Saffron European City Brand Barometer* looks at European cities with populations of 450,000 or more, plus Manchester, Bristol, Cardiff, Leeds and Newcastle mentioned as important UK cities with populations less than that. This example clearly shows awareness that a city smaller than 450,000 cannot be an opponent to a city such as London. The question remains though – does *Saffron* utilize the right categorization method?

In the early stages, city branding research and particularly real world activities dealt with metropolitan-sized cities. In recent years one could see diffusion towards smaller cities and towns, the cities of Latvia are one set of such examples. Officials of small regional cities with 10,000 – 100,000 citizens are also curious to know how their cities stack up against each other.

Why we choose city size as study factor? Population sizes compared to other data is easier to obtain making the research process less painstaking. In city branding on its own, population size cannot be success or loss determinant, but it can be an indicator of certain correlations which is easily obtained by developing an appropriate methodology. There is a need to uncover a fluctuation corridor between winners and losers and calculate the averages helping us to find out the determinant for city size classes, which as we believe, will provide more objective representation of city brand rankings where competitors are of equal weight, hence unlike David fighting Goliath in the Bible. Like in sports weight classes divisions of competition are used to match competitors against others of their own size. This paper tries to answer these questions with the main goal to confront population size versus consumer-based city brand index and to underline the need to factor in city size classes when presenting city brand rankings.

2. The Concept of Place Branding

The new millennium opened a global race for place competitiveness as it was realized that place brands play a significant role in affecting decisions of local and international consumers and investors. Anholt (2007b) believes that all of people's decisions, whether they are as trivial as buying an everyday product or as important as, say, relocating a company, are partly rational and partly emotional. Global competition and oversaturation of supply and information makes rational choices increasingly difficult as such a supply oversaturation has direct impact on abilities of human perception. Ries and Trout (1981) declared that brand positioning is the battle for the human mind, underlining the importance of emotional decision making. Therefore brands underpin the emotional part of

decision-making and must be strongly influencing the rational part too.

Also places - nations, regions, cities and other spatial entities – are among those concerned with “battling” for the superior place in the minds of target customers. Inspired by the recent shift from managerialism to entrepreneurialism, city makers are turning to product or corporate marketers to adapt their methods provoking global fever of place marketing and in extension thereof, place rankings.

In the last 20 years of increasingly large real world activity and relatively little rigorous theory-building city marketing took on a new form named by Kavaratzis (2004) as “city branding”. He suggests that the object of city marketing is the city’s image, which in turn is the starting point for developing the city’s brand. Zenker and Braun (2010) define place brands as a network of associations in the consumers mind based on visual, verbal, and behavioral expressions of a place, which is embodied through the aims, communication, values, and general culture of the place’s stakeholders and overall place design. Place branding is a specific marketing-instrument that implies a more hedonistic approach to places whereas place marketing is demand-driven approach seen as broader term (Boisen, *et al.* 2011). The goal of place branding therefore is to affect the emotional part of decision making which is expected to result in added attraction to the place.

City branding thus is evolving as new and rapidly growing internationally recognised research domain based on tree main perspectives: (1) producing (how to brand), (2) consuming (how to evaluate) and (3) criticizing city branding (Lucarelli and Berg, 2011). Place brand is a complicated multi-facetted construct that consists of many dimensions and elements where many of them are out of the control of place managers. This probably is the main reason for absence of consensus on how a city is to be branded, let alone how to measure and rank such branding efforts. Better progress on scientific discussions is with the construct itself. It has been agreed that city brands exist. More contradicting is the term of “city branding”. There is no fully adapted theoretical framework for brand management of a city. Some authors (Rainisto, 2003; Kavaratzis, 2004; Hankinson, 2004; Anholt, 2007b; Hankinson, 2007) have suggested different city branding frameworks but they are yet to meet around a common consensus. In early research stages it was believed that place is a spatial product and could be branded on the same way as products. Later authors (Caldwell and Freire, 2004; Trueman *et al.* 2004; Kavaratzis, 2007) found that corporate identity theory is a better match for what we nowadays understand as place branding. City branding is

understood as the means both for achieving competitive advantage to increase inward investment and tourism, and also for achieving community development, reinforcing local identity and identification of the citizens with their city and activating all social forces to avoid social exclusion and unrest (Kavaratzis, 2004).

3. City Brand Index VS Population Size

3.1. Gathering the Data

Latvia is a comparatively small country in north-eastern Europe, whose population is 2.2 million, inhabiting a land area of 65,000 km². Two thirds of the population is concentrated in cities, especially in the capital, Riga. In few European countries is the capital as dominant as it is in Latvia in a country with 76 cities of different sizes. For our study we used two data categories - the official Latvian city size index (Ministry of Environmental Protection and Regional Development, 2009) and our the city perception index.

For band rankings we used structured methods to get the opinion of Latvian citizens about Latvian cities with a sample frame of 426 people. The measurement covered tree main aspects of city use – as a *place to live*, *place to invest*, and as a *place to visit*. Our place characteristics match those defined by Zenker (2011) trying to determine the most fitting factors to “catch a city”. Zenker (2011) suggested combined place categories summing previous findings proposed by Anholt (2007b); Grabow, *et al.* (1995); Zenker, (2009), these are: *place characteristics* (tourism factor), *place business* (investment factor), *place quality* (stay and live factor), *place familiarity*, *place inhabitants* and *place history*. We presented the list of 76 Latvian cities and asked respondents to answer four main close-ended questions: Which three cities are the best/most (1) to live in, (2) to study, make a career and business and (3) to visit. In each question respondents were asked to choose 3 cities and rank them in approximate order of importance. Number 1 was representing the highest and number 3 the lowest level of importance. Each level got its figural score: 1st place was equal to 3 points, 2nd place to 2 points and 3rd place to 1 point accordingly. Hence, a city perception index was formed by counting the total score respondents had given to each city (table 2). Further details on methodology and the research can be found in Brencis and Stancika (2011).

Table 2. Perception index of Latvian cities (source: by author)

Number of respondents (n=426)						
Pos.	City	Perception index		Pos.	City	Perception index
1	Riga**	2435		25	Saldus##	11
2	Ventspils**	2108			Kandava	11
3	Sigulda##	683		26	Kraslava##	9
4	Jurmala**	675			Lielvarde#	9
5	Liepāja**	575			Cesvaine	9
6	Cesis##	360		27	Salaspils##	7
7	Valmiera**	249			Subate	7
8	Kuldiga##	198			Mazsalaca	7
9	Daugavpils**	191		28	Ludza#	6
10	Jelgava**	178		29	Valka#	5
11	Jekabpils**	73			Aluksne#	5
12	Ogre*	70			Grobina	5
13	Rezekne**	59			Lubana	5
	Bauska##	59		30	Ainazi	4
14	Talsi##	44		31	Olaine##	3
15	Tukums##	38			Plavinas	3
16	Saulkrasti	33			Ikšķile	3
17	Līgatne	28			Rūjiena	3
18	Balozi#	24			Sabīle	3
19	Pavilosta	21		32	Aizkraukle#	2
20	Gulbene#	19			Vilaka	2
21	Salacgrīva	16			Aloja	2
	Smiltene#	16			Brocēni	2
22	Madona#	15		33	Auce	1
23	Preiļi#	14			Skrunda	1
	Balvi#	14			Varakļāni	1
24	Dobele##	12			Durbe	1
	Limbazi#	12				

The local size typology (Ministry of Environmental Protection and Regional Development)

*Large cities (over 25, 000) ##Average large cities (10 – 25, 000) #Average cities (5 – 10, 000) Small cities (below 5000)

Rankings (table 2) show obvious tendency that the larger cities like Riga, Ventspils, Jurmala to fill the top positions. It is also clear that smaller cities Sigulda, Cesis, Kuldiga to a certain extent are capable to cut into positions of larger opponents. But these are just obvious conclusions at first sight lacking substantive analysis and explanation.

3.2. Comparison of Rankings - Size and Brand Index

For further analysis we marked off 20 cities (table 3). An additional five cities serve for cross referencing to contra-distinguish population size and perception. The choice of 20 cities is explained by the small, similar or non-existing numerical score in perception index for cities below the 20th position, causing problems in mathematical calculations of the given data. Secondly, our selection of 20 plus 5 cities is assumed adequate to test the main questions of this paper.

The first determinant while confronting perception index versus population size is positive or negative correlation between both criteria - size and perception. If a city is on the first place by its population, ideally it is expected to show the same results in brand rankings. In Latvia's case only Riga has equal standings on both criteria. Other cities have either positive or negative correlations. Positive city (*PC*) is when city's population size rank (*SR*) is equal or lower than the brand rank (*BR*). The best example here is Sigulda. The city is 18th by size and 3rd by its perception index (table 3). Daugavpils on the other hand is the second largest but only 9th in the brand rankings. The coherence for Daugavpils thus is negative. The negative city (*NC*) is when a city's population size rank (*SR*) is higher than the brand rank (*BR*). The grey column in the table 3 shows the positional difference between size and brand rank, both in positive and negative aspects.

Table 3. City size rank VS city brand rank (source: by author)

Size rank	City	Population size	Differ. in size and brand rank	Brand rank	City	Perception index
1	Riga	710 600	0	1	Riga	2435
2	Daugavpils	103 053	-7	2	Ventspils	2108
3	Liepaja	83 884	-2	3	Sigulda	683
4	Jelgava	64 748	-6	4	Jurmala	675
5	Jurmala	56 147	+2	5	Liepaja	575
6	Ventspils	42 657	+4	6	Cesis	360
7	Rezekne	34 912	-6	7	Valmiera	249
8	Valmiera	27 217	+1	8	Kuldiga	198
9	Jekabpils	26 378	-2	9	Daugavpils	191
10	Ogre	26 167	-2	10	Jelgava	178
11	Tukums	19 961	-5	11	Jekabpils	73
12	Salaspils	18 159	-15	12	Ogre	70
13	Cesis	18 021	+7	13	Rezekne	59
14	Kuldiga	12 755	+6	14	Bauska	59
15	Olaine	12 667	-16	15	Talsi	44
16	Saldus	12 306	-9	16	Tukums	38
17	Talsi	11 201	+2	17	Saulkrasti	33
18	Sigulda	11 168	15	18	Ligatne	28
19	Dobele	11 152	-5	19	Balozi	24
20	Kraslava	10 160	-6	20	Pavilosta	21
21	Bauska	10 060	+7	24	Dobele	12
34	Balozi	5665	+15	25	Saldus	11
44	Saulkrasti	3299	+27	26	Kraslava	9
69	Ligatne	1239	+51	27	Salaspils	7
71	Pavilosta	1134	+51	31	Olaine	3

The difference coefficient (*DC*) is calculated by subtracting the city brand rank (*BR*) from the city size rank (*SR*) which is then positive or negative. The highest positive difference is 51 places (Ligatne and Pavilosta) and the highest negative difference is within 16 places (Olaine). The average mean between positive and negative cities in size and index is 11.4, the median is 6, telling that the most frequently recurring coefficient between both rankings is within 6 places.

3.3. Comparison Size and Perception Index

The comparison by city standings recognises the difference in size and/or perception index and enables the separation of negative and positive cities but it tells little of the regularity between both coefficients. The comparison by city standings cannot express the predominance in terms of the perception index between a negative and a positive city. As seen in table 3 the size of Latvian cities decline quite smoothly (except Riga city) which cannot be said about city perception index which drops faster.

3.3.1 The Methodology

Compared to a negative, the positive cities can differ by their size, by perception index, or by size and perception index. The perception indexes of Ventspils and Liepaja for instance differ for 3.67 times, but size difference is just 1.97 times. Sigulda represents the opposite example; it differs only 1.19 times by its brand, but compared to Liepaja, Sigulda's index is 7.51 times smaller. The *size index difference (SID)* thus shows the extent of comparative advantage by size while the *brand index difference (BID)* shows the extent of comparative advantage by the brand. The spread (*S*) shows the total gap between sizes and index value (figure 1).

The spread represents the total earned handicap of positive cities over the negative ones. In figure 1, Liepaja a larger city compared to three smaller ones - Ventspils, Jurmala and Sigulda represent various comparative aberrations in terms of their size and brand. The largest spread thus belongs to Sigulda fully earned by its size difference. Ventspils' spread on the other hand mainly results from the difference in its perception index.

Figure 1. Spread in the differences of city size and perception index (source: by author)

To calculate the spread the first step is to take a negative city and select cities which stand lower by their size but higher in brand rankings (table 3).

Table 4. Example of calculations: Larger city VS smaller cities with higher brand index (source: by author)

	City	Popul. size	Percept. index			
NS=1	Liepāja	83 884	575	SID	BID	SPREAD
	Ventspils	42 657	2 108	1,97	3,67	5,63
PC=3	Jurmala	56 147	675	1,49	1,17	2,67
	Sigulda	11 168	683	7,51	1,19	8,70

As said before in case of Liepāja we have one negative city (*NC*) and several positive cities (*PC*). By dividing population size of a negative city (*Pnc*) with the population size of *n* positive cities (*Ppc*) we get the size index difference (*SID*) in times. Then dividing the brand index of positive cities (*Bpc*) and the brand index of negative city (*Bnc*), we get brand index difference (*BID*). Finally to the size difference (*SID*) we add the brand index difference (*BID*) and get the spread (*S*) - the total difference value in terms of size and perception index (equation 1).

$$1. SID = \frac{Pnc}{Ppc} \quad 2. BID = \frac{Bpc}{Bnc} \quad 3. S = \left(\frac{Pnc}{Ppc} \right) + \left(\frac{Bpc}{Bnc} \right)$$

3.3.2. Analysis and Results

To calculate the spread (*S*) and derive the averages we took seven negative cities (*NC*) and opposed them against 33 positive cities (*PC*) (table 5) believing that such a selection will provide an objective notion about the fluctuation patterns between size and perception index. Each case has one negative city versus several positive cities depending on their rankings in table 3. It must be acknowledged that in some cases positive cities can reoccur. The amount of repetitions depends on the spread between size index and perception index of a city. The most frequently recurring city is Sigulda, being small by size, but doing great in perception.

Table 5. City size index VS city perception index within 7 cases and their averages (source: by author)

Case 1						Case 2					
City	Size index	Perception index	SID	BID	S	City	Size index	Perception index	SID	BID	S
Daugavpils	103053	191				Liepaja	83 884	575			
Liepaja	83 884	575	1,23	3,01	4,24	Ventspils	42 657	2108	1,97	3,67	5,63
Jurmala	56 147	675	1,84	3,53	5,37	Jurmala	56 147	675	1,49	1,17	2,67
Ventspils	42 657	2108	2,42	11,04	13,45	Sigulda	11 168	683	7,51	1,19	8,70
Cesis	18 021	360	5,72	1,88	7,60						
Sigulda	11 168	683	9,23	3,58	12,80						
Valmiera	27 217	249	3,79	1,30	5,09						
Kuldiga	12 755	198	8,08	1,04	9,12						
		AVG	4,61	3,63	8,24			AVG	3,66	2,01	5,67
		MAX	9,23	11,04	13,45			MAX	7,51	3,67	8,70
		Median	3,79	3,01	7,60			Median	1,97	1,19	5,63
Case 3						Case 4					
City	Size index	Perception index	SID	BID	S	City	Size index	Perception index	SID	BID	S
Jelgava	64 748	178				Rezekne	34 912	59			
Jurmala	56 147	675	1,15	3,79	4,95	Ogre	26 167	70	1,33	1,19	2,52
Ventspils	42 657	2108	1,52	11,84	13,36	Valmiera	27 217	249	1,28	4,22	5,50
Valmiera	27 217	249	2,38	1,40	3,78	Jekabpils	26 378	73	1,32	1,24	2,56
Cesis	18 021	360	3,59	2,02	5,62	Cesis	18 021	360	1,94	6,10	8,04
Kuldiga	12 755	198	5,08	1,11	6,19	Kuldiga	12 755	198	2,74	3,36	6,09
Sigulda	11 168	683	5,80	3,84	9,63	Sigulda	11 168	683	3,13	11,58	14,70
		AVG	3,25	4,00	7,25			AVG	1,96	4,61	6,57
		MAX	5,80	11,84	13,36			MAX	3,13	11,58	14,70
		Median	2,99	2,91	5,90			Median	1,64	3,79	5,80
Case 5						Case 6					
City	Size index	Perception index	SID	BID	S	City	Size index	Perception index	SID	BID	S
Jekabpils	26 378	73				Ogre	26 167	70			
Cesis	18 021	360	1,46	4,93	6,40	Cesis	18 021	360	1,45	5,14	6,59
Kuldiga	12 755	198	2,07	2,71	4,78	Kuldiga	12 755	198	2,05	2,83	4,88
Sigulda	11 168	683	2,07	9,36	11,42	Sigulda	11 168	683	2,34	9,76	12,10
		AVG	1,87	5,67	7,53			AVG	1,95	5,91	7,86
		MAX	2,07	9,36	11,42			MAX	2,34	9,76	12,10
		Median	2,07	4,93	6,40			Median	2,05	5,14	6,59
Case 7						Averages from all cases 7 negative VS 33 positive cities					
City	Size index	Perception index	SID	BID	S						
Tukums	19 961	38									
Cesis	18 021	360	1,11	9,5	10,58			AVG	2,9	4,6	7,5
Kuldiga	12 755	198	1,56	5,2	6,78			MAX	9,2	18,0	27,2
Talsi	11 201	44	1,78	1,2	3,02			Median	2,0	3,5	5,5
Sigulda	11 168	683	1,79	18,0	19,76						
Bauska	10 060	59	1,98	1,5	3,43						
		AVG	1,6	7,1	8,7						
		MAX	2,0	18,0	19,8						
		Median	1,8	5,2	6,8						

Summing the results from 7 cases (table 5) we can draw fluctuation corridor where maximum size index difference (SID^{max}) between negative and positive cities is equal to 9.2 times (case 1). It shows the probability of a city being 9 times smaller than the opponent to overtake it by its brand. The maximum brand index difference (BID^{max}) is higher, reaching 18 times (case 7), telling that being smaller a city can be 18 higher on perception. These however are the most extreme cases where in certain circumstances a small famous city happens to outdo a large nameless city. In the case of Latvia these are likable small tourism cities such as Sigulda and the larger post-industrial cities like Salaspils and Olaine established during the Soviet era to house the workforce employed in the nearest plant.

Compared to the average figures, such extreme cases are more theory than reality. The overall average size index difference (SID^{avg}) is 2.9 times and the average brand index difference (BID^{avg}) is 4.6 times where average spread (S^{avg}) is 7.5 showing the total difference between SID and BID . We believe that the main determinant to suggest a coefficient to classify the cities by size is the median of spread (S^m) as it shows numerical values separating the higher half of a sample, from the lower. The median shows that lower half is dominating in this study and the highest half is more coincidence than realism. Median of the spread (5.5) suggests that in countries similar to Latvia, on average every city can be two times smaller, but at the same time have 3.5 times higher brand index, providing total handicap by 5.5 times - the most frequent gap that separates two cities ever happening to be brand indexed. Putting it more clearly means a city of 10,000 can achieve brand perception of a city of 55,000, but clearly not of a city of 100,000. We suggest introducing city size classes within 4 - 6 size times while creating consumer-based city brand rankings to provide more objective results for large and small cities.

4. Conclusion and Discussion

The original aim of this paper was to confront population size with a consumer-based city perception index and to determine the head of an index for city size classification. This has been carried out by confronting city population size index versus perception index of Latvian cities. Within seven cases the extent of predominance of positive city in size and brand was calculated. The size index difference shows the extent of comparative advantage by size while the brand index difference shows the extent of comparative advantage by the perception value. The spread is the sum of the size the brand difference total handicap of positive cities over the negative one.

This study proved that in general population size does not matter exclusively – a small city can “punch” well above its weight and vice versa. But this “jump” compared to a large city is limited to an average within the certain *fluctuation corridor* where the maximum size differences between brand ranked cities might be high - up to 10 times. It means that

theoretically Riga as metropolis can be an opponent to London as a megalopolis. We found out that in average a city can be 2 times smaller, but at the same time have 3.5 times higher brand index with the total handicap of 5.5 times. It means that in human perception cities are equal opponents only if their size difference is not higher than 4 to 6 times. If this average is exceeded the probability to be an equal opponents is just theoretical.

In this paper we cannot claim to have a universal fluctuation formula for every city, as city size is not a single determinate of city brand success. We can manipulate only with maximum figures and the averages from multiple cases. We also do not claim that our city perception rankings are methodically perfect picture of rankings of Anholt and Saffron. What connects them is the fact that they are consumer based and by using different tools they measure and represent the positions of the cities in mental maps of particular sample frame. As size difference was problem in our research disabling us to provide adequate results for small cities, we believe other scholars might encounter the same issue. Above conclusions enable us to suggest them introducing city size classes. We recommend to use the size difference coefficient within 4 - 6 size times which as we believe will provide a more objective representation of cognitive data especially if dealing with brand rankings in a country like Latvia where we struggled to get representative rankings for average and small cities. Beside a categorized version if possible we suggest presenting overall brand rankings to depict extraordinary cases. We also suggest calculating per capita brand index x by using simple formula $x=n/m$ where n is city brand index and m population size. A per capita index is abstract, but it shows the value city brand index gains from one population unit. Using per capita indexes we can create alternative city brand rankings where top places then belong to the cities with conditionally the most efficient utilization of human capital. Touching upon further research and commercial avenues from here on, it would prove highly interesting to explore how cities make use of funding and efforts on city branding relative to the constraints and opportunities our survey and modeling has brought forward.

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