Investigation into the Reliability of Liveability Indices

Georgia Harford-Mills

City rankings and various aspects of liveability have been a key reference for government bodies, private organisations and the wider community, and are now captured throughout a number of instruments that place cities in ranked order based on certain attributes.

Common attributes that are continuously applied when defining liveability include economic viability, amenity, environmental sustainability, health and wellbeing, education and leadership, public service and transport, business activity and political engagement. In order to understand further the applicability of these city rankings, this bulletin undertakes an enquiry into the rankings achieved by each Australian capital city and the variability between the final listings.

For the purpose of this report the following surveys were investigated:

- Economist Intelligence Unit (EIU) Global Liveability Survey 2014
- Monocle Quality of Life Survey 2014
- Mercer 2012 Quality of Living Worldwide City Rankings Survey
- Numbeo Quality of Life Index 2014 Mid Year
- A.T. Kearney 2014 Global Cities Index and Emerging Cities Outlook

This research was initially conducted to understand how Perth fares in each of these studies and also to gain insight into the relationship between the various rankings and the population sizes of each of the top cities. However, an initial investigation gave cause to question the validity and utility of liveability indices given the level of variability in rankings across Australian capital cities. This report highlights some of these concerns.

About the Surveys

The EIU released its most recent Global Liveability Survey 2014 in August, which provides a score for each of 140 cities based on five broad categories: Stability; Healthcare; Culture and Environment; Education; and Infrastructure. The five Australian cities included in this ranking are Perth, Sydney, Melbourne, Adelaide and Brisbane.

Lifestyle magazine Monocle’s Quality of Life Survey 2014 highlights its top 25 cities globally based on Safety and Crime; Healthcare; State-funded Education; Business Stability; Urban Design; Green Space Provision; and City Vibrancy. Of the 25 cities Monocle included, only 3 of these are Australian – Sydney, Melbourne and Brisbane.

The Mercer 2012 Quality of Living Worldwide City Rankings Survey examines 221 cities on 39 factors that fall into the categories of Availability of Consumer Goods; Economic Environment; Housing; Medical and Health Considerations; Natural Environment; Political and Social Environment; Public Services and Transportation; Recreation; Schools and Education; and Socio-cultural Environment. Mercer includes six of Australia’s capital cities in their index: Perth, Sydney, Melbourne, Adelaide, Brisbane and Canberra.

The Numbeo Quality of Life Index 2014 Mid Year is available publically from their website. This index ranks a total of 113 cities based on Environmental Pollution; Safety; Health; Traffic Congestion; Property Prices; Purchasing Power; and the Consumer Price Index. Numbeo’s geographical convergence is the same as Mercer above, incorporating a total of six Australian cities – Perth, Sydney, Melbourne, Adelaide, Brisbane and Canberra.

Finally, the A.T. Kearney 2014 Global Cities Index and Emerging Cities Outlook lists a total of 84 cities across 26 factors which sit in the broad dimensions of Business Activity; Human Capital; Information Exchange;
Cultural Experience; and Political Engagement. Within this index only two Australian cities are featured, both Sydney and Melbourne.

**Liveability Measurement Techniques**

The results of these surveys are based on a range of sources and techniques to determine liveability rankings. A.T. Kearney uses a purely quantitative analysis of data available in the five categories considered significant to the creation of a global city. This is achieved through a panel of academic experts and corporate executives who inform and test this data.

Mercer uses an annual Quality of Living Survey questionnaire in order to rank cities, with its purpose to calculate hardship allowances for expatriate employee’s. This suggests that this survey would be targeted at single, employed residents, thereby possibly overlooking a large proportion of the population that don’t fall into this category.

The purpose of the EIU Global Liveability Survey is identical to Mercer in that it determines hardship allowances for employee’s. Their qualitative measurements however, are taken through a single field correspondent based in each city, along with in-house expert country analysts. The lack of broad consultation, and the potential for inconsistency if the field correspondent changes, has the potential to affect results, and in particular the level of direct comparability between cities.

The Numbeo Quality of Life Index is calculated using quantitative data, estimating each ranking using an empirical formula. The specific weighting of each category is determined by Numbeo, who currently place environmental pollution as the most important quality of life aspect in each city – over those attributes listed above. This measurement technique could be considered subjective as Numbeo decides the most important criteria based on their opinion, which may differ with varied perspective.

Monocle magazine bases their top 25 cities upon a set of indicators that they argue are essential ingredients to the make up of a city – reliable public transport, good schools and low crime. Included are less tangible elements such as convenience of services and features like cultural vibrancy, which ‘light up a community’. Monocle does not state their collection and measurement techniques, neither do they highlight each specific category used to determine the final index, which makes it less valuable as a tool for use in policymaking and planning.

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Australian Cities Comparison

Table 1 compares the ranking that Australian capital cities were given in each of the surveys investigated.

There is a high degree of variability between how each of the cities perform within the rankings. Perth features in three of the five surveys and has a variability of 20 rankings between its highest and lowest position. The largest variability between ranking values was Canberra with a gap of 25 positions, while Sydney, Melbourne and Adelaide all had a variation of 24 points between their highest and lowest ranking. Brisbane was the lowest of these with a difference of only 17 rankings. Of all the Australian capital cities, Sydney and Melbourne were the only two that featured across every survey examined.

Such large degrees of variability are dependent on how liveability is defined, the specific indicators chosen to measure liveability, and the technique(s) used to construct the respective index.

Pert (2013) describes some of the drawbacks of liveability surveys, and notes that one of the most problematic aspects of operationalising the concept of liveability is that it means very different things to different people depending on factors such as age, gender, socio-economic status, health, ethnicity and income. It can also vary between single, young urban professionals wishing to live close to work, to families seeking to cater for their children’s needs.

Moreover, it is linked to particular cultural values in a given location, and therefore are not readily transferable from place to place.

This gives some insights into the difficulty of both defining and measuring liveability and provides an awareness of the large variability in the rankings cities achieve across different indicators.

Table 1. Australian city rankings for each liveability survey examined.

<table>
<thead>
<tr>
<th>City</th>
<th>EIU</th>
<th>Monocle</th>
<th>Mercer</th>
<th>Numbeo</th>
<th>A.T. Kearney</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perth</td>
<td>9</td>
<td>21</td>
<td>29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sydney</td>
<td>7</td>
<td>11</td>
<td>10</td>
<td>31</td>
<td>14</td>
</tr>
<tr>
<td>Melbourne</td>
<td>1</td>
<td>3</td>
<td>17</td>
<td>18</td>
<td>25</td>
</tr>
<tr>
<td>Adelaide</td>
<td>5</td>
<td>29</td>
<td>21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brisbane</td>
<td>20</td>
<td>25</td>
<td>37</td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>Canberra</td>
<td>26</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Figure 1. Australian city rankings as given in table 1


A Close Look at the Top 10

In addition to the above, one of the noteworthy characteristics of liveability survey outcomes are the very small differences between city scores.

The EIU Global Liveability Survey is globally recognised and referenced, which is why it was chosen for the purpose of further investigation. Comparing the top 10 cities in the EIU Survey provides an insight into just how little separates each city in terms of Stability, Healthcare, Culture and Environment, Education, and Infrastructure.

Each of these factors is given a score from 1-100 and the weighting of these categories is shown in the top column. Interestingly, comparing Perth with Melbourne in all 30 categories the only differences lie in the Culture & Environment measure, which gives Melbourne a rating of 95 and Perth a rating of 89 (see table 2).

Investigating this further the only difference within this category falls in Climate, giving Perth a tolerable rating for ‘humidity/temperature’ and an uncomfortable rating for ‘discomfort to travellers’, compared with Melbourne’s rating in these categories of acceptable and tolerable respectively.

As Climate is the only category that separates Melbourne as first on the EIU liveability index and Perth as ninth – and it is a factor that is a purely geographic issue – it gives rise to question the value of relying too heavily on these surveys as a measurement of “liveability success”.

From the discussion above it is clear that these index ranking systems produce unconvincing and potentially biased results. Given that such minor variations in individual categories that make up the indices influence the position of cities so significantly, there is the need for a greater degree of critical reflection as to their real value. Indeed, rather than rely on such indicators, there should be broader policy debates about the performance and qualities of cities so as to ensure long term prosperity, infrastructure provision, sustainable growth, services and community well-being to name a few.

The uniqueness of cities and different cultural perspectives contribute to giving these indices little meaning, for example one person may value above all Perth’s climate and its mild winters, while others might place emphasis on factors unique to Melbourne. Taking all of this into account, it is clear that decision makers should rethink the emphasis and incorporation of such indices when considering future growth and development of cities.

Table 2. Comparison of top 10 EIU liveable cities.

<table>
<thead>
<tr>
<th>Rank</th>
<th>City</th>
<th>Score</th>
<th>Stability Rating (25%)</th>
<th>Healthcare Rating (20%)</th>
<th>Culture &amp; Environment Rating (25%)</th>
<th>Education Rating (10%)</th>
<th>Infrastructure Rating (20%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Melbourne</td>
<td>97.5</td>
<td>95</td>
<td>100</td>
<td>95</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>2</td>
<td>Vienna</td>
<td>97.4</td>
<td>95</td>
<td>100</td>
<td>94</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>3</td>
<td>Vancouver</td>
<td>97.3</td>
<td>95</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>93</td>
</tr>
<tr>
<td>4</td>
<td>Toronto</td>
<td>97.2</td>
<td>100</td>
<td>100</td>
<td>97</td>
<td>100</td>
<td>89</td>
</tr>
<tr>
<td>5</td>
<td>Adelaide</td>
<td>96.6</td>
<td>95</td>
<td>100</td>
<td>94</td>
<td>100</td>
<td>96</td>
</tr>
<tr>
<td>6</td>
<td>Calgary</td>
<td>96.6</td>
<td>100</td>
<td>100</td>
<td>89</td>
<td>100</td>
<td>96</td>
</tr>
<tr>
<td>7</td>
<td>Sydney</td>
<td>96.1</td>
<td>90</td>
<td>100</td>
<td>94</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>8</td>
<td>Helsinki</td>
<td>96</td>
<td>100</td>
<td>100</td>
<td>90</td>
<td>92</td>
<td>96</td>
</tr>
<tr>
<td>9</td>
<td>Perth</td>
<td>95.9</td>
<td>95</td>
<td>100</td>
<td>89</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>10</td>
<td>Auckland</td>
<td>95.7</td>
<td>95</td>
<td>96</td>
<td>97</td>
<td>100</td>
<td>93</td>
</tr>
</tbody>
</table>

(Source: Economist Intelligence Unit 2014).
Population Correlation

Figure 2 below shows simple correlations between the liveability score of the top 25 most liveable cities according to the EIU in 2014 and their corresponding estimated populations. This was calculated to determine the extent to which population sizes and the rankings received by each city might be linked. The working hypothesis was that a less populated city would score higher on the liveability survey rankings.

The formula imposed onto the graph provides the ability to calculate the $R^2$ value, which gives an indication of the level of correlation between these two statistics ranging from 0 (no correlation) to 1 (perfect correlation). A value of 0.0355 is calculated, which suggests that smaller populations do not necessarily indicate a higher ranking on the index. Notwithstanding the limitations of liveability indices, the result suggests that population size alone does not necessarily explain performance on the index.

Figure 2. Comparison of EIU Liveability score with population size in 2014 for the top 10 most liveable cities

\[
y = 0.2546x - 22.284 \\
R^2 = 0.02735
\]

(Source: Economist Intelligence Unit 2014 and various).
Conclusions

Despite liveability surveys providing useful insights into how cities fare in different categorical indicators, caution must be applied when placing high emphasis on these studies to guide policy development and decisions based on focus areas for government. This report has highlighted some of the shortcomings and inconsistencies with such liveability surveys including the methodologies, the final ranking outcomes and the differences between highly ranked cities. Liveability indices, as examined in this Bulletin are highly subjective with large differences between selection of indicators, methodology and final outcomes.

There was also cause to investigate the relationship between population and ranking, as there is a common misconception that a lower population size will generally mean a higher liveability rating. Comparing the two, it was understood that there is in fact, little correlation between these values. Relying too heavily on such ranking indices to guide policy development gives cause for concern as the complexity and local context of cities cannot easily be captured.

References


About FACTBase

FACTBase is a collaborative research project between the Committee for Perth and The University of Western Australia to benchmark the liveability of Perth and its global connectedness through an examination of Perth’s economic, social, demographic and political character.

The FACTBase team of academics and researchers condense a plethora of existing information and databases on the major themes, map what is happening in Perth in pictures as well as words, and examine how Perth compares with, and connects to, other cities around the world.

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