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Sustainability in Place Marketing

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Changing consumer habits and social and economic changes have led most local authorities to rethink their marketing strategies to meet new challenges. However, marketing strategies often encourage overconsumption, so an ill-conceived marketing campaign can be fatal for a local authority. One of these is the cluster of literature dealing with the environment, environmental awareness, the impact of tourism, and the ecological footprint. The focus of this paper is to examine the cluster covering the topic of sustainable development. A prominent element of the SDGs is sustainable cities and communities, on which tourism can have a very significant impact, for instance, through transport emissions. The research examines the relevant indicators of the UN SDG 11 tracker (Our World in Data) and the OECD Better Life Index, systematically comparing the indicators covered by the study. The research results will show the inconsistencies, advantages, and disadvantages of the indicators in terms of sustainability and quality of life, which can help develop local marketing strategies.

1. Introduction

In the previous phase of the authors' research, a systematic literature review of Scopus, WoS, and Sage databases identified three well-defined clusters in place marketing, which formed a distinct entity within the field (Reicher et al., 2023). A systematic literature review on place marketing identified 6 clusters. One of them is the cluster of literature dealing with the environment, environmental awareness, the impact of tourism, and ecological footprint. Although the concept of sustainability was not identified as a separate cluster, the terms sustainability, sustainable, sustainability destination, etc., were found in all clusters when examining the number of occurrences of keywords. It leads to the conclusion that sustainability is also essential in place marketing. One of the concerns of the 2010 Stiglitz report (Stiglitz et al., 2010) is the economic measurability of the impact of housing on well-being. According to the report, "[t]he commonly used statistics may not be capturing some phenomena, which have an increasing impact on the well-being of citizens. For example, traffic jams may increase GDP as a result of the increased use of gasoline, but obviously not the quality of life" (Stiglitz et al., 2010), p. 307. Other researchers also dispute the suitability of economic indicators as a measure of well-being. Macroeconomic indicators do not give a complete picture of an individual's or a society's quality of life (Clark, 2018). The World Bank reports that strong economic growth in a country can also improve quality of life (QOL) over time, but this cannot be extended to the entire population (World Bank, 2020). GDP does not provide comprehensive information on the quality of the environment, the safety of housing, and the availability of leisure time for social participation and education (Guliyeva, 2022). Velazquez points out that quality of life is a more complex concept since it considers cultural, social, economic, and environmental dimensions (Velázquez, 2016). Affordable and sustainable transportation is also a key factor (Kwak et al., 2022). It can be assumed that good physical conditions do not necessarily lead to a liveable environment. Among the set of global targets, the SDG11 guidelines apply to municipalities. These targets are a universal call to action to end poverty, protect the planet, and ensure that by 2030, all people will enjoy peace and prosperity.

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2. Relevance of the problem under study

For urban development practitioners, the challenge is to measure, quantify, and create change metrics. In almost every field, the question is how to measure the impact of these changes and what is the best metric to describe the processes that have taken place and the future ahead.

The conceptual framework within which the issue of sustainability is addressed and the thematic areas in which it is given prominence are crucial. One possible shortcoming of this topic is the divergence of the idea of a city-level evaluation methodology and the country-level data used, and as is known, within a country, there can be quite significant differences between individual cities, even within a city with characteristics of a metropolis. In order to avoid this ambiguity, we focused on the country-level indices and characteristics.

2.1 Databases examined

The United Nations (UN) has adopted a set of global indicators (SDGs), refined and comprehensively reviewed annually. Indicators at regional and national levels complement the Global Indicator Framework. Among the SDG targets, the SDG11 guidelines apply to municipalities. According to the literature that draws on SDG11 data, the use of SDG indicators raises questions about what is being assessed by SDG indicators, and some researchers argue that the change needed for sustainability is not reflected in the current understanding of SDG indicators (Kopnina, 2016). Limited data availability and reliability issues make conducting thorough research difficult (Arfvidsson et al., 2016). Some publications suggest no new data sources or innovative ways of measuring SDG 11 targets (Satterthwaite, 2016). Critical comments on data and data reporting are valid, but the data officially provided for the SDG indicators can only be used. The analysis looks at the figures for the five priority areas and does not address the other SDGs. These targets are fully supported by the Organisation for Economic Co-operation and Development (OECD), whose database includes country data and indicators related to the SDG targets.

Among the dimensions of well-being, the environment (current and future conditions) is given a prominent place, as reflected in the Better Life Index (BLI) maintained by the OECD (2023) as a possible indicator of well-being. The BLI is a composite index in which data from 38 member countries reflect altogether 11 themes that the OECD has identified as relevant to well-being in terms of material living conditions (housing, income, jobs) and quality of life (community, education, environment, governance, health, life satisfaction, safety, work-life balance). Each of the 11 themes in the index is currently based on one or four indicators. Within each piece, indicators are averaged with equal weights. The scores are primarily calculated based on data collected by the national statistical office of each country (using a standard unit of measurement, mostly with ratios).

OECD	SDG11			
Dwellings without essential	Indicator 11.1.1 Proportion of urban population living in slums, informal			
services (%)	settlements, or inadequate housing			
Rooms per capita	Indicator 11.1 This measures the proportion of the urban population living in slum households. A slum household is a group of individuals living under a roof who lack one or more conditions: improved water supply, sanitation, sufficient living space, and housing durability			
Quality of support network (%)	Indicator 11.3.2 Percentage of cities where civil society is directly involved in urban planning and management and which operate regularly and democratically.			
Air pollution (micrograms per m ³)	Indicator 11.6.1 is the annual average level of fine particulate matter (e.g., PM2.5 and PM10) in cities (weighted by population).			
Stakeholder involvement in the development of regulation (Average score)	Related to 11.3.2. see as above			
Feel safe walking alone at night (%)	Indicator 11.7.2 is the proportion of persons who have been victims of physical or sexual abuse by sex, age, disability status and location of occurrence in the last 12 months.			

Table 1: OECD Indicators SDG11 equivalents

In a detailed review of SDG11 (Sustainable Cities and Communities), for which ten sub-goals and 15 indicators have been identified, it has been found that measurement data are unavailable for 6 of the 15 indicators. Only 4 have some proportion of published data for the remaining nine indicators, allowing comparisons between countries. Still, even for these, there is little overlap between countries, which could allow for comparisons or clustering of countries on several criteria. Examining the OECD Better Life Index database, several indicators related to SDG11 targets among the other indicators have been found. The analysis was conducted only for

countries in the OECD database, and only the indicators associated with SDG11 in the OECD database were used. These are summarised in Table 1.

On its website, the OECD allows visitors to declare where they live, so the site makes it visible how users rank welfare issues worldwide. The interactive map also shows which variables are the most important. Based on this, the OECD indicators that respondents emphasised have been selected, assuming that, for them, a positive score on this indicator represents satisfaction. It should be stressed that not all categories were included in the selected indicators, and not all indicators from one category were included (see Table 2).

Table 2: Selected OECD indicators

Category	Indicator and unit of measurement
Income	Household net adjusted disposable income, USD
Jobs	Labour market uncertainty, %
Education	Education level, %
Health	Life expectancy, y
Life satisfaction	Life satisfaction - Average score
Work-life balance	Time spent on leisure and personal care, h

3. Methods

The selected indicators were classified into two groups: the so-called hard indicators (upper part of Table 3) and the soft indicators (lower part of Table 3). The hard calculators are those that ensure the basic level of everyday life (living), mainly adapted from SDG 11. While the soft indices include labour-related well-being and quality-life values, those sourced from the OECD BLI. The latest available values (between 2015-2022) for 38 OECD and 3 non-OECD countries were considered. The average aggregated values for each country are listed in the last column. It is important to underline the importance of the sign and unit of measurement of each indicator (e.g. zero values for other indicators such as Life satisfaction may indeed indicate greater levels of satisfaction). The average values are calculated by the OECD and reflect the arithmetic means of all data (i.e., all countries). This value provides a deeper insight into each value's meaning.

Indicator		Unit	Average
			value
Housing	Dwellings without basic facilities	%	3
	Rooms per person - Ratio	(1)	1.1
Community	Quality of support network	%	91
Environment	Air pollution	µg/m³	14
Civic engagement	Stakeholder engagement for developing regulations	Average score	2.1
Safety	Feeling safe walking alone at night	%	74
Work-Life Balance	Time devoted to leisure and personal care	h	15.07
Income	Household net adjusted disposable income	USD	3,490
Jobs	Labour market insecurity	%	5.1
Education	Educational attainment	%	79
Health	Life expectancy	у	81
Life Satisfaction	Life satisfaction	Average score	6.7

Table 3: Table of merged indices Source: OECD database and SDG Tracker (Our World in Data team, 2023)

It is assumed that where physical conditions are ensured, they do not clearly lead to a more liveable, pleasant living environment. The physical environment is going to be detected through the hard indicators, while wellbeing and a pleasant environment are through the soft ones. The indicators selected from SDG11 and OECD BLI (see Table 3) are going to be compared. The sample countries may be clustered, and different clusters are assumed based on hard and soft indicators. Two groupings may be set up: one based on the sustainability aspect linked to the SDG11 target and the other based on indicators focusing on well-being. In sum, the two clusters can be merged where each sample country may be identified by sustainable characteristics. To construct the clusters, first, a so-called clustering technique was used with principal component analysis, and then the countries were clustered with K-means cluster analysis using SPSS. Since the values are adapted from statistical databases, assumptions are granted, and a parametric procedure was used for testing. Here, observational methods were used with secondary empirical data sources from the above-mentioned indexes and theories, which were selected from statistical databases. Finally, different tests of independence were implemented. Consequently, the results of various countries can be observed by principal component analysis so that the countries may be clustered, and cluster analysis can be conducted. Both methods are so-called unsupervised, which means that they are based on simple statistical data; no external information about groups (or clusters) are used in order to obtain the clusters. The first one is a merging technique where group members are jointly based on their correlation (or closeness) towards observed indicators. Then, the countries are grouped through cluster analysis based on their similarities.

4. Results

First, a descriptive statistical analysis of the variables selected above was carried out (see Table 3). It can be seen that the SDG11-based hard indicators differ from the soft indicators (both in meaning and values). In order to handle the different units of measurement, so-called standardised indicators (z-scores) were used. A principal component analysis was performed with the two sets of indicators for the countries included in the study.

For the hard indicators, based on the correlations between the variables and the corresponding KMO value (KMO 0.730 and Bartlett's test p <.001), the explanatory power of the model is adequate (70.909 %), with a minimum of 2 large clusters. For the soft indicators, the KMO is lower (close to the threshold; KMO 0.578 and Bartlett's test p <.001), but here, 2-3 clusters can be assumed, with an explanatory power of 74.295 %. The first time, i.e., by hard factors, the Gower's similarity scores, which is more reliable than the Silhouette score in the case of mixed-type variables, were every time 0.5 or higher, proving a reasonably good clustering. In the second case, i.e., by soft factors, these values were higher over 0.6.

Afterwards, so-called nearest neighbour hierarchical clusters were constructed, where dendrograms are shown in Figure 1. The dendrogram clearly reveals that the second cluster formed by the hard indicators has only one element, Mexico.



Figure 1: Dendrograms of hierarchical clusters based on hard (left side) and soft indicators (right side) Source: The authors' elaboration

The hard indicators (left side) include more countries, while the soft indicators include fewer countries due to the lack of data. In the next step, 3-3 clusters were formed for both sets of indicators (using a K-means cluster analysis) that provided further investigations. The clusters were chosen to maximise the differences among cases in different clusters. In the first case, the observed significance level of "Stakeholder engagement for developing regulations" indicator did not show a significant impact, while "Time devoted to leisure and personal care" and "Life expectancy" from the soft indicators had the same weak impacts.

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In the case of the hard indicators, countries can be classified into three clusters. The second classification also contains three clusters. Table 4 shows the average values of the clusters formed by the hard and soft indicators and the corresponding standard deviation values. For the clusters according to hard indicators, the third cluster performs best, with the most positive indicators. In this cluster, mainly Western European countries can be found. The situation is less clear for the soft indicator clusters. Here, the second and third clusters have similar positive scores. Spain and Greece belong to this cluster.

		1 (n=12)		2 (n=1)	3 (n=22)		Total (n=35)	
Hard Cluster Number of Cas	se	Mean	Std.	Mean	Mean	Std.	Mean	Std.
		D	eviation		D	eviation		Deviation
Dwellings without basic facilities		5.230	4.600	25.900	0.830	1.715	3.050	5.374
Rooms per person		1.290	0.261	1.100	1.900	0.264	1.670	0.399
Quality of support network		87.167	6.058	77.000	93.409	2.667	90.800	5.561
Air pollution		19.125	5.483	20.300	9.986	3.346	13.414	6.095
Stakeholder engagement developing regulations	in	2.050	0.633	3.200	2.100	0.544	2.114	0.591
Feeling safe walking alon night	e at	64.667	12.879	42.000	80.682	7.587	74.086	13.378
Coff Chuster Number of	1	(n=12)	2	(n=2)	3 (r	า=6)	Total	(n=35)
	Mean	Std.	Mean	Std.	Mean	Std.	Mean	Std.
Case		Deviation	า	Deviation		Deviation		Deviation
Time devoted to leisure and personal care	14.98	3 0.48	5 15.390) 0.50	9 15.373	0.762	15.141	0.585
Labour market insecurity	2.92	5 0.89	8 18.750) 4.17	2 4.800	2.114	5.070	5.019
Life expectancy	81.91	7 1.09	1 82.800) 1.55	6 80.500	3.136	81.580	2.002

Table 4: Cluster characteristics (mean and standard deviation) Source: The authors' elaboration

In sum, hard and soft indicators can be merged results in a merged classification (see Figure 1), where ten different combinations can be observed in the case of the studied countries. Table 5 shows a summary representation of both clustering methods and the merged clusters for some countries.

Table 5. Cluster hierarchies in both indicators and merged clusters for some countries Source: The authors' elaboration

Country	Hard	Soft	Group		
Austria	3	1	2		
Belgium	3	1	2		
Canada	3	1	2		
Finland	3	1	2	Custoinship and	
Germany	3	1	2	Sustainable and	
Ireland	3	1	2	liveable countries	
Netherlands	3	1	2		
Norway	3	1	2		
United Kingdom	3	1	2		
United States	3	1	2		
Hungary	1	3	5		
Italy	1	3	5	Less sustainable but	
Korea	1	3	5		
Poland	1	3	5	countries	

Without being exhaustive, Table 5 only shows cluster pairs from the ten different variations where the pairings grouped more than three countries and data are known for both indicators. There are two larger clusters of countries, where one cluster contains countries rated as sustainable by the SDG11 targets and liveable by the OECD indicators, while in the other cluster, the SDG11 targets are not being met, but the soft indicators show that the countries are currently performing at more sustainable and moderately liveable levels.

The analysis could find a group of countries where only hard or soft indicators were scored. There were also groupings where countries scored medium on both indicators. Finally, there were some countries that were not similar to any other countries, forming a cluster group of their own. These included Spain, Mexico and Greece.

5. Conclusions

Researchers use numbers to describe the environment they are studying, so numbers, measurements and indicators are almost indispensable in research. However, it is essential to interpret these indicators well, explain them adequately, and understand the human being behind them. With the help of artificially produced indicators, it is possible to make different groupings and classify areas, social groups and characteristics.

Some researchers assign chemical indicators, substantial numbers, to various measurable variables to describe the social, economic and natural environment. Other research focuses on softer indicators, where people's personal feelings play a more significant role in their perception of a region or country.

Both paths are possible. This paper wanted to find out what similarities and differences there are if a specific area, urban development, is chosen and examined along both lines. The cluster analysis showed whether countries grouped by the hard indicators also belonged to the same group or not based on the soft indicators.

The results show that there can be differences between countries classified as 'good' or 'fair' based on hard and soft indicators, as only a small number of the countries examined scored excellent on both indicators. This result highlights two points. One is that hard indicators should be treated and interpreted with caveats. But it also shows that people's perceptions might need to change because a country with positively rated soft indicators might not be sustained in the long term.

Limitations of the research are that all results depend on statistical data reporting methods and methodology. Since SDGs aim to bear a comparable and uniform evaluation system, the creation of the metrics was intended to serve this single measurement option. Understandably, however, their interpretation can vary widely between countries and cultures. Agglomeration and infrastructure within a country are also important, as it is not possible to treat a whole country as a single area, e.g. within a country, there are also university towns, spa tourism centres, cultural sites, etc., so well-being is much more diverse.

The second finding of the research is that complex (mainly environmental) indicators differ from welfare indicators, partly because factors other than environmental and economic (sustainability) elements may be necessary when choosing where to live, so a different scoring system may be used (see OECD BLI index). In SDG11, mainly environmental indicators are used, but the current research shows that characteristics such as education (in another SDG), job opportunities, etc., are also important in place marketing in terms of sustainability.

References

- Arfvidsson H., Simon D., Oloko M., Moodley N., 2016, Engaging with and measuring Informality in the proposed urban sustainable development goal. Afr. Geogr. Rev., 36, 100-114, DOI: 10.1080/19376812.2015.1130636.
- Clark A.E., 2018, Four Decades of the Economics of Happiness: Where Next? Review of Income and Wealth, 64(2), 245-269, DOI: 10.1111/roiw.12369.
- Guliyeva A., 2022, Measuring quality of life: A system of indicators. Economic and Political Studies, 10(4), 476-491, DOI: 10.1080/20954816.2021.1996939.
- Kopnina H., 2016, The victims of unsustainability: A challenge to sustainable development goals. Int. J. Sustain. Dev. World Ecol., 23, 113-121, DOI: 10.1080/13504509.2015.1111269.
- Kwak J., Jo J., Ku D., Lee S., 2022, The Relationship between Green Transportation and Leisure Travel Based on Social Media Data. Chemical Engineering Transactions, 97, 115-120.
- OECD Better Life Index, 2023, <www.oecdbetterlifeindex.org/responses/>, accessed 15.07.2023.
- Our World in Data team, 2023, Make cities inclusive, safe, resilient and sustainable. https://ourworldindata.org/sdgs/sustainable-cities, accessed 27.10.2022.
- Reicher R.Z., Kádár B., Pecze K., Majláth M., 2023, Place marketing as a research topic secondary research results on international publications, Challenges in the Carpathian Basin. Proceedings of the 16th International Conference on Economics and Business, Romania, ISBN 978-973-53-3038-5, 243-253.

Satterthwaite, D., 2016, Where Are the Local Indicators for the SDGs? Blog of the IIED. 2016. www.iied.org/where-are-local-indicators-for-sdgs, accessed 24.07.2023.

- Stiglitz E.J., Sen A., Fitoussi J., 2010, Report by the Commission on the Measurement of Economic Performance and Social Progress. <ec.europa.eu/eurostat/documents/8131721/8131772/Stiglitz-Sen-Fitoussi-Commission-report.pdf>, accessed 08.07.2023.
- Velázquez G.A., 2016, A New Index for Study Quality of Life (LQI), Argentina: Combining Socio-economic and Environmental Indicators. In Indicators of quality of life in Latin America. Springer, Cham, Switzerland, 57-77, DOI: 10.1007/978-3-319-28842-0_3.
- World Bank, 2020, The World Bank Annual Report 2020: Supporting Countries in Unprecedented Times. worldbank.org/bitstream/handle/10986/34406/9781464816192.pdf>, accessed 19.06.2023.

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