





International Sustainability Indices¹

Şirin Gülçen Eren^a , Seema Mehra Parihar^b 

^a Department of City and Regional Planning, Faculty of Architecture, Süleyman Demirel University, Isparta, Turkey.
ORCID: 0000-0002-2038-3905

^b Department of Geography Kirori Mal College, Faculty of Social Studies, University of Delhi, India.
ORCID: 0000-0002-3113-754X

Abstract

‘Sustainability’ and ‘Sustainable Development’ have been on the urban planning agenda since the Brundtland Report (1987). In order to make cities and regions sustainable, there is a need to assess their current situations and their progress with respect to the Sustainable Development Goals (SDGs). Various indices have been designed which use sustainability indicators to measure and monitor the current situation and the performance of strategies and action plans. This will make it possible to structure future actions and interventions and adjust existing ones. The contents of these indices vary due to the country, the development strategies adopted by different cities and regions, the aims and objectives of policy and decision-makers, their evaluation criteria, indicators and the ingenuity of the drafters of the indices. Few evaluations, however, have been made of these indices. Consequently, the question arises as to which index constitutes the best basis for the sustainability efforts of urban developers and planners. The present article explores the range of international sustainability indices and the contributions they may make to sustainable urban development. A descriptive analysis method is adopted and supported by a survey of the literature and an internet search. The objective is to create awareness about the indices and to contribute to the effective implementation of decisions and strategies for achieving the SDGs. The study argues that although such indices need to be standardised and reliable, the data collected may in practice be non-standard, the indicators may be invalid for all cities or geographies, and the indices may prove to be short-lived.

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Corresponding Author

Ş.G. Eren:
sirirenen@sdu.edu.tr



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1. Introduction

Urbanization has always been an important issue in history. It refers to the spatial growth of rural or natural land in the periphery into urban area or urban infill as a result of population increase (through migration or births) living in that urban settlement (Eren, 2021, p. 222). The urbanization level is determined directly by the urban population concentration and the quantity and quality of urban services and facilities provided in that area.

Urban population is increasing globally from 36.6% to 46.7% in 1970 and 2000, respectively. Global urban population projection is estimated to reach 58,3% in 2025 and 68,4% in 2050 (United Nations, Department of Economic and Social Affairs [UN DESA], Population Division, 2019). The Organisation for Economic Co-operation and Development (OECD), notes cities to house 55% of the world population in the year 2050 (OECD, 2020, p. 3).

United Nations Agenda 2030 has been created to contribute to ‘Sustainability’ and ‘Sustainable Development’. Sustainability idea was first used in the Brundtland Report (World Commission on Environment and Development [WCED], 1987), “Our Common Future” accepted by the World Commission on Environment and Development (WCED). The UN Department of Economic and Social Affairs (UN DESA) determined 17 Sustainable Development Goals (SDGs) for the 2030 Agenda, to be adopted by the Member States till 2015.

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Sustainability and sustainable development gained priority for the nations and the cities. The above mentioned figures present us how important urbanization and sustainable urban development (European Union (EU), 1998; Wheeler & Beatley, 2004) will be in the near future. However, the meaning of sustainability differs by nation and economic strata of that society (Verma & Raghubanshi, 2018, p. 282). On the other side, there is a general ignorance about meaning and understanding of these two concepts.

Daly (1990, p.25) and Ajiboye (2021, p. 145) note the considerable confusion of concepts related to sustainability. Eren (2021, p. 217) also states that sustainable development, sustainable urban development, sustainable urban growth, sustainable urbanism, and sustainable urbanization concepts have different meanings. Economic, political, and epistemological dimensions of each concept create this differentiation and needs further attention.

For Zhilin et al. (2020, p.1), one of the key scientific issues of sustainability is the development of effective approaches to clarify related concepts and explanation of the status and trends in SDG measures. This is vital to determine the current position of the nations, regions and cities and to present the results achieved to public, decision-makers and related actors. Evaluation of sustainability is also needed for further actions and interventions of decision makers and urban planners to be adopted for achieving sustainability on the basis of the feedback obtained from measurements. Sustainability concept requires a certain number of economic, social and environmental factors (Ahmed, 1998) and indicators for measurement with compatible methods of analysis (Allen, 2009). Studies on sustainable development led the way to the determination of measurement sets (indices) for the evaluation of sustainability (Eren & Parihar-Mehra, 2021, p. 248).

Various factors and indicators are implemented and presented through reports (Wheeler & Beatley, 2004, p.10), indices and GIS and web-based analysis, visualization systems and databases. These have the objective to explore sustainable development (Maclaren, 1996), inclusiveness, and resilience as a concept analysed for a nation or a city and as a proposal for supporting sustainability and livability. These can also be used during policy making and planning processes.

Indices are an important mean to address global urban and national sustainability trends like rapid urbanization, demographic change, social conflict and climate change and response to natural disasters. Indices are the measurements in different levels and are prepared with differing aims and objectives (Resilience, sustainability (meeting SDGs), quality of life, safety, risk, land amount, etc.). Standardized indicators are needed to measure a city's performance, implement trends and achieve developments, and support collaboration of cities (Bhada & Hoornweg, 2009, p.3). The same is valid for the sustainability level of nations.

Development factors and indicators are analysed, searched and determined in the academic and professional fields to meet sustainable development objectives on city or country basis. Sustainability indices can be in international, regional, and national scale. Their sets can be designed and created by supranational, international, national institutions or private bodies or non-governmental organizations (NGOs). Tuğaç (2018) also classifies indices as measurement sets created by international organizations, international institutes and unions, the nations and other institutions.

Classification is made on the basis of the status of the body making the analysis and preparing the index with reference to time, geography, circumstances, scale, objectives, targets, attributes and priorities. This is the reason for the emergence of different sustainability indices with various weighted indicators and time periods. From here onwards, all the related indices will be termed as sustainability indices.

In time, there appeared the problem of reliability of indices, data standardization and their continuity (Mori & Christodoulou, 2012, p.97). In the recent years, the problem shifted from measuring of sustainability to what the indices should be based upon, their indicators and their comparability with standardized data. Comparability of indices can be made vertically or horizontally: Vertical comparison refers to comparison of index data with the data of other indices. Horizontal comparison means comparable data of an index.

There is the need to determine two major problem areas: The initial one is; what are the sustainability indices and which indices can be the basis for comparing cities in different geographies, and for any administrative decision

about urban development, urban space and urban planning that is shaped by urban neoliberalism (Korkmaz, 2021, p.85) and paradigm shift of urban planning (Eren, 2007, p. v, 80; Schubert, 2019, p.12). The second one is; what are their content and data. Based on this problem, this paper aims to analyze the context of available international indices. This research is expected to clarify the contextual difference the indices have.

To consider their applicability, this study addresses international indices. To define priorities and to develop strategies for reaching SDGs, the status of the indices must be pictured. It is important to note that international indices cover figures that can be taken for the comparability of regions, nations and cities. Therefore; international indices are used as the subject of study.

United Nations (UN) Habitat (2012, p.4) declares that the UN Development Agenda should point out the main challenges and opportunities that are structuring today's human settlements, including their impact and contribution to sustainable development efforts of a nation. Sustainable development concept is closely linked and generally parallel to the sustainable urban development concept. Both concepts cover physical build-up, social justice, sustainable economies, environmental sustainability and resilience issues (See; the Charter of ESC&T, Aalborg Charter (2021) and Aalborg+10). These concepts are also defined to achieve a balanced development.

In the Commission of the European Communities COM (1998) 605 Communication, aims of sustainable urban development are mentioned EU (1998):

- To strengthen economic welfare and employment,
- To support equality, social participation and urban renewal,
- To protect and develop urban environment,
- To contribute to urban governance and increase of local capacity.

Sustainable development is the development sustaining the demands of today's society by allowing future generations to meet their own needs (World Commission on Environment and Development [WCED] Brundtland Report, 1987, p.16). This understanding has three principles: Economic welfare, social justice and environmental Compactness. However, sustainable urban development implies a process improvement where progress and positive change can be achieved.

To make cities sustainable, their existing situations must be clear. Development and planning visions and strategies must be set. And, action plans must be established compatible to SDGs. Subsequently, the performance of strategies and action plans should also be measured.

Indicators of the indices should be open, simple and scientific, scalable, measureable and reproducible (Mega & Pedersen, 1998). Indicators define and quantify the rank and score of any development and impact of sustainability interventions. Indicators provide information to the public and decision makers on and monitors the current situation of the nation, the city, the region or the urbanization, growth and development levels. Most of them concentrate on urban indicators or projects. In the recent years, sectoral or subject based indices related to environment, risks and pollution are also developed.

The context of these indices differ relative to country, development strategies of cities and regions, aims and objectives of decision makers and the intelligence level of the index drafters.

2. Material and Method

Urban sustainability indices present a series of challenges for cities seeking ways to improve their performance and to realize a digitally-driven transformation for sustainable, resilient, smart and livable cities. It is important to figure out the ability of the cities to maintain services as they advance and to sustain and to use innovation to meet societal needs and demands. Secondly, the way new resources are located to meet changing citizen requirements by prioritizing initiatives must be set forward. And finally, how cities sustain themselves for the future should be explained. Resources must be preserved and changes in business models and economic circumstances must be responded.

Therefore; the major question emerges as: 'what are the international indices?' This research focuses on international indices that gives us the ground for meeting SDGs and stating the differences of upper level policies. The major contribution of this study will at the point of determination. Even though there is limited academic studies on indices, in contextual terms there is no other study like this carried out before with a holistic approach.

Within the above stated problem area and reasons of study, this research aims to analyze the context of international indices that could be reached out. The objective here is to explain the context of indices and to contribute to the efforts in meeting SDGs. In this context, first the material and method of the research, and then the International indices will be explained. The final section evaluates the ability of indices to contribute and to monitor sustainability.

As the world is evolving into the electronic culture (Bağcı & Aycan, 2021, p. 54), sustainability indices are generally published online. Therefore; the search had to be made via indices published on the internet. In other words, the material of this study is the online published indices. Therefore; the study has been structured by a descriptive analysis. Literature survey and internet search regarding indices on sustainable urbanization and development, green urbanization and smart urbanization or cities have been performed.

It should be stated that there may be other international indices other than those stated here.

3. International Sustainability Indices

International indices are composed of supranational system indices, international organizations' indices and indices of international companies, organizations or NGOs. These indices are different than regional and national indices. Sustainability indices also cover sustainability, smart city and resilience indices.

3.1. Indices of the Supranational System

3.1.1. UN Habitat Urban Indicators Guidelines (2004) and Database

United Nations Habitat has developed the Urban Indicators Guidelines. The guidelines focus on quality of life and sustainability. Indicators have been given to monitor universal development to reach SDGs and UN Habitat Agenda (UN Habitat Urban Indicators Guidelines, 2004, p.3-4). Indicators are clustered based on the data on shelter, social development, eradication of poverty, environmental management, economic development and governance. The data is gathered from international institutions and NGOs (UN Habitat, 2004). The Data and Analytics Section (DAS) has created Global Urban Indicators Database (See: UN Habitat, 2022a) for monitoring and reporting activities on SDG 11 and urban SDG indicators under UN Habitat's custodianship (UN Habitat, 2012; 2021; 2022b).

3.1.2. UNDP Human Development Report (HDR) 2020

The 2020 UNDP Human Development Report (HDR) covers development issues, trends and policies (UN Development Program Human Development Report [UNDP HDR], 2022). This research is not mainly in the form of an index, but covers statistics from various countries on inequalities exercised today in human development. It explains failures to mark systemic challenges which define inequalities and strengthen the power and political hegemony of a certain group (UN Development Program Human Development Report [UNDP HDR], 2019, p.4; UNDP HDR, 2022).

3.2. Indices of International Organizations

3.2.1. World Bank (WB) Working Paper On Sustainability

World Bank (WB) working paper on sustainability "What Makes a Sustainable City?" is formed by several case studies. This booklet covers cities in developing countries that try to achieve environmental, economic and social sustainability. Case studies also presented that many cities have achieved certain satisfactory outcomes (Santos et al., 2015, p.4).

3.2.2. World Bank (WB) the Global City Indicators Program (GCIP)

The Global City Indicators Program (GCIP) of the World Bank is a city-led initiative, which favors decentralization. This Program contributes selected cities' capacity of measuring, reporting, and improving performance and life quality, easing capacity building, and presenting best practices through a web portal (Bhada & Hoornweg, 2009, p.1). It is a program rather than an index, but must be mentioned due to its content. City Services (12 Themes, 22 core and 27 supporting indicators), Indices (10 Themes), Quality of Life Themes (6 Themes, 5 core and 9 supporting indicators) are defined within the program. 27 core and 36 supporting Global City Indicators are determined within the program. Standardized definitions and detailed methodologies have been developed for 63 indicators (World Bank [WB], n.d.a) Indicators are mainly on human well-being, energy use, water quality, governance, urban accessibility etc.

3.2.3. World Bank (WB) Eco2 Cities Initiative 2009

The World Bank started the Eco2 Cities Initiative (World Bank [WB], n.d.b, p. 1). The Initiative supported by the Cities Alliance, contributes with an analytical and operational framework. Local conditions and needs of each city are taken into account in order to develop environmental and economical sustainability. This research based also on best practices enables cities to gain access to financial resources for their strategic infrastructure investments. There are several principles of the initiative: A city-based approach, an expanded platform for collaborative design and decision-making, a one-system approach and an investment framework that values sustainability and resiliency (World Bank [WB], n.d.b, p. 1; Tuğaç, 2019, p. 718). The Bank has also prepared the Eco2 Cities Guide.

3.2.4. Economic Development and Cooperation (OECD) Better Life Index (BLI)

OECD Better Life Initiative has two major elements: Better Life Index (BLI) and How's Life? Publication. The BLI was developed by the OECD in May 2011. BLI of the OECD countries is calculated and ranked annually. BLI covers 11 topics of well-being: Housing, income, jobs, community, education, environment, governance, health, life satisfaction, safety and work-life balance (OECD, n.d.). How's Life? 2020 charts present the life conditions in 316 regions, 37 OECD countries and 4 partner countries. Over 80 indicators are declared. These indicators cover well-being outcomes, inequalities, and resources for future well-being (OECD, 2012).

3.2.5. Economic Development and Cooperation (OECD) Compact City Policies

According to OECD, compact city policies can enable urban sustainability in many ways such as economic, social and environmental benefits. Between 2009 and 2011, compact city policies of OECD countries are evaluated comparatively and the results of this project were published in 2014. Compact City Policies Index covers the policy practices of 30 countries. The Report mentions 18 compact city indicators for governments to measure their outcomes and advance their policy actions (OECD, 2012).

3.3. Indices of International Companies, Organizations or NGOs

3.3.1. The Rockefeller Foundation 100 Resilient Cities (100RC) Program

100 Resilient Cities (100RC) Program is activated in 2013. The program aims to achieve resilience through activities. These activities include the assignment of a City Resilience Officer (CRO) and creation of a Resilience Strategy. Share of knowledge and best practice via a global network of cities and service providers is another ingredient. This Program has the objective to help cities to become more resilient in terms of physical, social and economic challenges. The 100 Resilient Cities organization is closed on July 31, 2019.

3.3.2. ARUP ID The City Resilience Index (CRI)

The Rockefeller Foundation and ARUP International Development (ARUP ID) have jointly prepared the City Resilience Index (CRI). The Index aims to help cities to understand and to measure their capacity to react, implement and transform. The CRI is based on three years of research contributions (150 references), 14 case studies, data of 6 cities, consultations with experts and pilot schemes conducted in many cities. This index covers 22 search cities and 5 test cities (ARUP, 2014, p.5; 2022, p.16).

According to this Index, city resilience has four dimensions: Health and well-being; economy and society; infrastructure and environment and strategy (ARUP, 2022, p.9). It is noted that 12 goals must be met in order the city to maintain resilience. The CRI describes characteristics (and indicators) of resilience and presents the information analysis gathered from the fieldwork of this Index.

Only selected cities are evaluated. City Briefings during fieldwork have provided the contextual data. City strategy, asset management, social enablers, and survival and well-being are the themes discussed. As a result of these efforts, CRI Exploring Resilience Toolkit is designed and, Cities Qualitative Resilience Profile is prepared. This profile is based on responses from city stakeholders to 156 questions (metrics) that comprehensively cover urban systems in a city. This profile helps reveal the strengths and weaknesses of a city analysed through 4 dimensions, 12 goals, and 52 indicators (ARUP, 2022, p.9).

3.3.3. The Economist Intelligence Unit - The Safe Cities Index (SCI) 2021

The Economist Intelligence Unit prepares and publishes the Safe Cities Index (SCI) 2021 as a report. The NEC Corporation is the sponsor of this activity. The SCI reflects the various dimensions of urban safety. The report ranks 60 cities based on 76 indicators in terms of digital, health, infrastructure and personal security (Economist Intelligence Unit, 2022). New indicators specifically related to resilience are included in the SCI 2021. Resilience categories are noted as damage and multipliers, relevant assets and preparedness.

3.3.4. Kearney 2020 Global Cities Index and Outlook

2020 Global Cities Index and Outlook prepared by Kearney analyzes 151 cities (Kearney, 2020). As a result of this analysis 2020 Global Cities Report is prepared upon three key issues (Urban value creation, global city connectedness and the transformation of urban space) (Kearney, 2020; Nasr et. al., 2020) Global Cities Index 2020 measures 29 metrics upon five dimensions in 24 cities. Dimensions set by the Index are business activity, human capital, information exchange, cultural experience, political engagement (Kearney, 2020, p.7). The index is on the future potential of cities and has 13 indicators having 4 dimensions: Personal wellbeing, economics, innovation and governance. Metrics use data from the past five years. This data is projected out to 2030. Kearney has also published 2021 Global Cities Report (Kearney, 2021).

3.3.5. Circles of Sustainability

Circles of Sustainability is a method (a part of Circles of Social Life approach). This method is developed by Metropolis, the UN Global Compact Cities Program, the Senate Chancellery for the governing Mayor of Berlin and other organizations (the International Real Estate Federation (FIABCI), the Cultural Development Network, and the World Vision) (Circles of Sustainability, 2022). Circles of Sustainability supports cities, communities and organizations to help them contribute to sustain a better social life. The social life approach presents a social life supported by a holistic perspective. This is achieved by an intersecting four-domain model: Economics, ecology, politics, and culture.

Qualitative and quantitative indicators are used (Circles of Sustainability, 2022). The cities evaluated are Johannesburg, Liverpool, Melbourne, New Delhi, Port Moresby and Valetta. Global organizations (the UN Global Compact Cities Programme, the World Association of Major Metropolises and World Vision) use this method to support their collaboration with cities. Studies on this method were completed in 2019. No website or reference is available at the moment.

3.3.6. Numbeo Index

The system provides data on cost of living, property prices, quality of life. It also provides data on housing indicators, perceived crime rates, healthcare quality, transport quality, and other statistics. It is the global internet user contributed database. Data is collected at the city or country level. Numbeo Cost of Living Index, Quality of Life Index and Safety Index by City 2020 are the major indices. Safety Index by City 2020 is the safety index of 374 city data entries (Numbeo, 2020). Not much information is provided. Ranking of these cities are available online (Numbeo, 2022a, 2022b, 2022c).

3.3.7. Savills Prime Index: World Cities Index 2021

The Savills Prime Index: World Cities 2021 presents the sustainability level of 30 world cities. This index explains the impact of COVID-19 on capital values, residential values and rent values in the first half of 2021 (Savills, 2021a).

3.3.8. Savills Tech Cities Index 2019

Savills Tech Cities Index is prepared for 30 cities with 100 individual metrics. Metrics on housing and rent ranges in a wide spectrum. This Index provides a ranking of different metrics like hottest tech locations, capital investments, houses for tech and start-up companies worldwide. Savills launched Tech Cities Programme 2021 by December 2020. Twelve world cities were announced as top 'Tech Lifestyle Cities' (Savills, 2020).

3.3.9. Savills Global Farmland Index 2021

Savills Global Farmland Index 2021 is a demonstration on long-term growth and stability of farmlands in the World. It has also been published in 2020. This Index presents capital value performance for crop/arable land types. It is on content basis and all comments are not covered. Data has been gathered and recorded for the past 18 years (2002-2020) (Savills, 2021b).

3.3.10. The Sustainable Development Solutions Network (SDSN) and bertelsmann-stiftung The Sustainable Development Report, 2021

The Sustainable Development Report 2021 (formerly the SDG Index & Dashboards) is the first study to assess the performance of the UN members in achieving the SDGs. The Index defines standards for emerging, developing and industrialized countries. The Report sets forward the priorities for action in order to achieve the SDGs by 2030 (Sachs, et al., 2020, 2021). The SDG Index and Dashboards results are on country basis and are not directly comparable from one year to another as slight adjustments are made. Three Scandinavian countries (Denmark, Sweden and Finland) have the highest scores. In the year 2020, top 20 countries are OECD members (Sachs, et al., 2021, p.9).

This report frames the progress in implementing the SDGs across six major transformations: Education, gender, and inequality; health, well-being, and demography; energy decarbonization and sustainable industry; sustainable food, land, water and oceans; sustainable cities and communities; digital revolution for sustainable development. It also draws specific attention to the impacts of the recent pandemic on achieving the SDGs, particularly for low-income countries and vulnerable populations, and how to approach recovery from COVID-19 (Sachs et al., 2019; 2020).

3.3.11. ARCADIS Citizen Centric Cities - The Sustainable Cities Index 2022

Arcadis Sustainable Cities Index (SCI) analyses the sustainability level from the citizen's view. How cities allow their citizens to encounter their particular needs is questioned. The Index evaluates and ranks 100 global cities on three pillars of sustainability: People, planet and profit. The Arcadis Index uses 51 metrics and 26 indicators. The index searches progress of commitments in meeting SDG. The top 20 sustainable cities are the metropolises in Europe (Arcadis, n.d., p.19).

3.3.12. IMD-SUTD Smart Cities Index 2021

The Smart City Index 2021 is the third edition presenting how inhabitants perceive the level of help of technology to address urban challenges and its the impact on digital transformation. In other words, the Index ranks cities on the basis of economic and technological data and present the level of being "smart" for their citizens. The Institute for Management Development (IMD) World Competitiveness Center's Smart City Observatory, Switzerland and Singapore University for Technology and Design (SUTD), has published the 2020 Smart City Index online (Institute for Management Development [IMD], 2020; 2022).

Index has key findings on the role of technology in human society. Data also shows that urban populations started to give importance to health and environmental-related issues such as better air quality and access to health

services since the emergence of the pandemic. Citizens from 118 cities were surveyed in the year 2020 and were asked several questions about technological provisions based on five areas: Health and safety, mobility, activities, opportunities and governance. Economic and social data is taken from the UN Human Development Index (HDI). The Index explains how citizens perceive the efforts to make a city 'smart' (Institute for Management Development [IMD], 2019).

Ratings for each city are calculated on their performance relative to other cities. Around 15,000 inhabitants were surveyed globally in July 2021 (Quantumescio, n.d.). Survey respondents (120 people) from each city are asked to select 5 the most urgent issue for the city from a list of 15 indicators. Smart city rating, factor rating and groups are defined. Singapore, Zurich and Oslo are the first three advanced group of cities. The Index presented that richer cities have higher environmental concerns.

3.3.13. Cities in motion (smart cities) Index 2020

Statista is a private company based in Germany. Statista Research Department has been preparing the Smart Cities index. Nine dimensions are evaluated: Governance, urban planning, technology, the environment, international projection, social cohesion, human capital, mobility and transportation, and the economy (Thormundsson, 2022a). Detailed data on provision of smart parking and mobility, recycling rates, and block chain ecosystem are also included. The data collected should be improving the living standards. Statista has also published Global Smart City Index Score 2019 (Thormundsson, 2022b). The company is ranking global cities using an index score (top score is 10). According to this Index, Zurich, Switzerland was ranked first, achieving an overall index score of 7.75 (Thormundsson, 2022b).

3.3.14. Smart Cities Index Report 2022

Yonsei University, DTTM (Center of Digital Transformation Technology Management), ISI (Information Systems Intelligence), University of Cambridge Department of Engineering, IfMEngage are the partners taking part in the preparation of the index. The Index analyses 31 cities. The performance dimensions evaluated are service innovation, urban intelligence, urban sustainability, urban openness, infra integration, urban innovation, collaborative partnership and smart city governance.

3.3.15. The Digital Cities Index (DCI) 2022

The Digital Cities Index (DCI) is created by the Economist Impact. NEC supports the database. DCI considers four key pillars which are digital connectivity, services, culture and sustainability. The Index evaluates the extent and impact of digitization in 30 cities. A white paper is published. The index is constructed upon 48 qualitative and quantitative indicators (Economist Impact, 2022).

3.3.16. IESE Cities in Motion Index 2020

IESE Business School University of Navarra Center for Globalization and Strategy has Cities in Motion Index 2020 (IESE, 2022). This Index covers 174 cities across 80 countries (IESE, 2022).

4. Conclusion

Critical factors of urbanization define the new global agenda at the Age of Turbulence (Greenspan, 2006). These cover the arising uncontrolled urban growth and sprawl; emergence of mega cities and ecumenopolis (Doxiadis, 1967), increasing metropolitanization (Dumont, 2015), rise of technological corridors and regions, shrinking cities. All cities have varying degrees of demands and needs, institutional capacity and migration. New factors like Pandemics stress the importance of SDGs. The status of each country and city to reach these goals are evaluated, measured and monitored through different tools and methods. Sustainability indices are one of these.

Countries and their cities are very different in size and have differing levels of economic development. Indices emphasize their critical needs with a priority. Strengthening the capacity of societies and enabling decision-makers and urban planners to manage sustainable development could only be possible by determining the current situation. How cities prioritize own needs, demands and themes and how they do it so vary in time.

Indices can be prepared on international, regional and national scales by different institutions, authorities and organizations over the last few decades. SDGs are implemented by different countries or cities with non-identical processes. The related processes have been defined by top-down commitments, plans, methods and tools. A vertical and horizontal comparison of international indices is impossible as each has a different content and data structure.

Each index has a different hypothesis or various indicators, indicator descriptions, data sets, main source(s), weighting and rationale of preparation. They even are based on various indicators some of which are indirectly related to the sustainability issue. The approach and method of international sustainability indices also differ. Some indicators measure the existence of policies while their quality may remain untested.

Standards, indicators and factors differ vertically between international indices and horizontally within international indices. None of the international indices analyze the same cities or have the same objectives. Many are introduced to be linked to sustainability, but a few are directly related to define the status in reaching SDGs on urban level.

Different actors and decision makers prioritize different themes. According to ARUP (2014), "A large amount of factors (39%) are identified by consultees as absent from their city. This is surprising given that the research was designed to collect evidence of what had worked (what was existing, or present), rather than what could work (what was missing, or absent)."

Indices can be unique or may not be sustainable or not standardized. Some are prepared annually and some can be realized in the previous years with a different content. This is why, indices taking into account the same indicators for a relative periodical comparison is hard to make. And if, the indices have the same data on countries or cities than the indices are comparable. Even in that case, as the basis of data collection or indicators differ, the comparison of indices may also be unreliable.

In the globalizing and competing world, technological and digital developments emerge together with social and cultural transformations. Countries are experiencing this process of change with differing levels and consequences and have different levels of development capacity to meet SDGs. Several index figures present that nations or their cities are close to each other. But, several indices do cover the same countries.

If geographies are incomparable, measuring the sustainability of cities or countries loses meaning. This research argues that the robust data collected across geographies should support interoperable indices, well adhered to and accepted by those countries and cities that prioritize sustainability. For this reason, from the past, the current or the future, to achieve sustainability; reliable and horizontally and vertically comparable indices must be created based on the same or similar factors and sectors and standardized data in a way to cover more cities or countries and must be prepared by the same consensus and indicators aiming to achieve sustainability. This will allow the responsible actions to put objectives, targets and to design strategies. New designs of indices must be made for achieving comparable grounds. Otherwise it will be nothing more than reports or lists mainly prepared by the consultancy companies to create a market for their own profit and interest.

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