

MEASURING KNOWLEDGE SOCIETY: DETERMINING AN APPROPRIATE METHODOLOGICAL APPROACH

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Abstract: Today, there is a general commitment to building an inclusive Knowledge Society, in which everyone has the opportunity to gather and share information, to create and share knowledge, and to participate fully in the economic, political, social and cultural life of their countries. But, the path towards the Knowledge Society is complex, multifaceted, and riddled with difficulties. In order to determine the development of countries toward Knowledge Societies, it is necessary to measure the performance of each country. By presenting the initiatives for developing approaches applied in measuring complex dimensions of Knowledge Society, as well as the approaches for measuring the status of knowledge on global level, we will be able to grasp the developmental tendencies in this area. Culture is often shunned dimension when analyzing the development of a society. However, incorporating the dimension of cultural development will give a more accurate presentation of the success of a country's transition to a Knowledge Society.

Keywords: Knowledge Society, measurement, culture, development

1. INTRODUCTION

Since the middle of the last century, it is obvious that knowledge is increasingly becoming a basic resource for the development of society. Along with this, the idea and concept of a knowledge society emerges in the development of society, in which learning becomes a continuous activity of man throughout his life. Although there are different and highly polarized understandings and views on globalization, starting from its understanding as a necessary historical process in the development of society, or its realization as a legitimate process in the development of human society that has its negative consequences, as well as its presentation as a project of Western domination and Americanization of the world, leading to the fragmentation of the world, however, there are almost no conflicting views on the meaning of knowledge, as a key resource for the development of society. In fact, globalization, as a process of creating a unique economic, political and cultural space of the country, transformation (development) into an information society and affirmation of knowledge as a basic development resource, preserves the unity of three interrelated and widespread social processes. At the same time, the common global living space not only brings peoples and states closer together, but is also filled with many contradictions. Namely, in the globalized society there is a wide range of questions and problems that knowledge needs to answer. It should enable the establishment of an appropriate position for specific societies in the world civilization process and offer solutions for communication with people from other societies, in which they would transfer their experiences to others, while critically adopting their experiences. In addition, advances in communication technology, the Internet, and the rapid expansion of optical networks are necessary, but not sufficient. People need to be educated, trained, collaborated and innovated. The justification for this claim does not only stem from the need for economic development, it is confirmed by the fact that natural resources are overused, biodiversity is alarmingly destroyed, and the planet is undergoing significant climate change.

Ivo Slaus¹ points out that knowledge-based society is constantly changing and maintaining a long-term and global perspective. But determining the development of societies towards knowledge societies is a complex task. It is particularly difficult to measure the ability of all society members to participate in the process of knowledge production and diffusion, their personal growth and their individual creativity. Given that knowledge is a basic resource in knowledge societies, it is also necessary to perform accurate evaluation of knowledge, identification of the challenges, as well as identifying strengths and weaknesses within that sector.

2. THE EMERGE AND DEVELOPMENT OF THE IDEA FOR 'KNOWLEDGE SOCIETY'

Since the emerge of the term 'knowledge society'² and recognition of its potential, there has been radical change in the meaning of knowledge. First, it's inevitable to define 'knowledge', which is one of the most difficult terms to

¹ Slaus, I. "Entering Global Knowledge Society: Role of Education", Donald School Journal of Ultrasound in Obstetrics and Gynecology, 2013 vol.7 no.3 pp.239-247

² The term 'knowledge society' was first used by Peter Drucker in "The Age of Discontinuity, Guidelines to our Changing Society", Harper & Row, 1969

define since it has a wide range of definitions. Many authors follow the definition of knowledge given by Davenport and Prusak:” Knowledge is a fluid mix a framed experience, values, contextual information, and expert inside that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the mind of knowers”.³ According to Kerstin Fink⁴ this definition tries to capture almost all characteristics of the term knowledge. Knowledge is close to action and is referred to as knowledge-in-action⁵. Synonymous with the word knowledge are tacit knowledge used by Nonaka and Takeuchi⁶ or implicit knowledge used by Polanyi⁷. The term tacit knowledge is subjective and content specific; it is the experience based on the knowledge that cannot be expressed in words, sentences, or formula. Tacit knowledge is stored in the heads of people. Explicit knowledge in contrast, is codified knowledge, and it can be transmitted in systematic and formal ways such as documents, manuals or databases. The term knowledge can be defined as the tacit or implicit knowledge that an innovative and creative person possesses and their ability to turn the learned skills or experience into a knowledge-in-action.

The present meaning of term ‘knowledge society’ emerged in the 1990s, with detailed studies by researchers such as Robin Mansell⁸ and Nico Stehr⁹. In UNESCO World Report “Towards Knowledge Societies” is highlighted that knowledge society identifies, produces, processes, transforms, disseminates and uses information and knowledge for human development.¹⁰ According to Ivo Slaus, knowledge is the main resource in a knowledge-based society, and the fundamental feature of the knowledge society is the knowledge-development link. Knowledge includes science, humanities and technologies, research and development, inventions and innovations, education—all forming the culture of knowledge.¹¹ It is important to note that the idea of the knowledge society is inseparable from studies on the information society, whose premises appeared with the development of ICT.

The potential of knowledge-based society as one of the most efficient method for achieving goals formulated through various political processes was recognized by EU leaders, whereby in March 2000 they launched the Lisbon Agenda¹². It was an action plan for new strategic goal for the Union to ‘become the most competitive and dynamic knowledge-based economy in the world, capable of sustainable economic growth with more and better jobs and greater social cohesion’ by the year 2010. The key elements of an overall strategy for achievement of this goal were: transition to a knowledge-based economy and society by better policies for the information society and, research and development; investing in people and combating social exclusion; liberalization to create a single market and entrepreneurial culture, and favorable growth prospects.

In 2003 UNESCO published the report ‘Double Helix of Learning and Work’¹³ prepared by two distinguished European academics Orio Giarini and Mircea Malitza to the Club of Rome, in which they stress the unity of education and work as a crucial requirement of “knowledge society”. The ‘Double Helix of Learning and Work’ advances fundamental paradigm-changing ideas in the field of education. Drawing inspiration from the double helix genetic structure of DNA discovered by James Watson and Francis Crick, the authors propose vast modularization of curricula linked to a massive plotting of human knowledge and employment possibilities. They seek to strengthen the relationship between education and employment in order to bring “knowledge society” within

³ Davenport, T. H. & Prusak, L. “Working Knowledge: How organizations manage what they know”, Harvard Business School Press, 2000

⁴ Fink, K. “Knowledge Potential Measurement and Uncertainty”, Springer Science & Business Media, 2012

⁵ Davenport and Prusak use the term "knowledge-in-action" to express the characteristics of the term knowledge in a way it is valuable for the company and to capture it in words because it resists in the minds of the humans and their actions

⁶ Nonaka, I. & Takeuchi, H. “The knowledge creating company: how Japanese companies create the dynamics of innovation”, Oxford University Press, 1995

⁷ Polanyi, M. “The Tacit Dimension”, University of Chicago Press, 1966

⁸ See Mansell, R. & Wehn, U. “Knowledge Societies: Information Technology for Sustainable Development”, Oxford University Press, 1998

⁹ See Stehr, N. “Knowledge Societies: The Transformation of Labour, Property and Knowledge in Contemporary Society”, Sage Publications, 1994

¹⁰ UNESCO World Report “Towards Knowledge Societies”, UNESCO Publishing, 2005
<<https://unesdoc.unesco.org/ark:/48223/pf0000141843>> accessed 10.03.2020

¹¹ Slaus, I. “Entering Global Knowledge Society: Role of Education”, Donald School Journal of Ultrasound in Obstetrics and Gynecology, 2013 vol.7 no.3 pp.239-247

¹² Lisbon European Council 23-24 March 2000 Presidency Conclusions
<https://www.europarl.europa.eu/summits/lis1_en.htm> accessed 12.03.2020

¹³ Giarini, O. & Malitza, M. “Double Helix of Learning and Work”, UNESCO-CEPES Publications, 2003

reach, noting that:” distinction between work and education would blur, as credits for both would become increasingly interchangeable”.

In order to meet the challenges for ‘knowledge society’, in 2005 UNESCO prepared the Report “Towards Knowledge Societies”¹⁴, in which is emphasized the need to renew an ethic for the guidance of emerging knowledge societies. It is noted that there is fresh international interest in the growth and development paradigm that bears within it the idea of ‘knowledge societies’”, which imposes the need for clarification of its aims as a project of society.

The report states that in the face of these challenges, the international community, including governments, international governmental and non-governmental organizations and the private sector, should focus on three sets of initiatives that could be viewed as the pillars on which genuine knowledge societies for all can be built:

- a better valuation of existing forms of knowledge to narrow the knowledge divide – this should involve assessing skills and turning all available assets, no matter how modest, to good account in the areas of education, scientific research and technological development;

- a more participatory approach to access to knowledge – creating opportunities for the greatest possible number of individuals to become knowledge producers rather than mere consumers of already available knowledge.

- a better integration of knowledge policies - definition of end goals and formulation of a project of society, which will make it possible to confront the challenges of globalization, to meet the needs of knowledge-based development and to achieve the Millennium development goals.

The end of the Report proposes 10 recommendations that will throw into relief the ethical dimension of knowledge societies and propose specific initiatives to spur their growth. Measurement of knowledge through determination of knowledge society indicators is the last recommendation that could contribute to establishing a better definition of priorities with the aim of narrowing the digital divide on the national and international levels. So the authors of the Report conclude that reliable measuring instruments are indispensable for any policy and action, whether they involve the public sphere, the private sector or civil society. It is therefore advisable to forge statistical tools that can be used to measure knowledge by gathering data that involve not only economic variables. Successful implementation of this activity would require partnerships between governments, international governmental and non-governmental organizations, private businesses and civil society to arrive at a quantitative and qualitative improvement of statistical capacities.

3. MEASUREMENT FOR KNOWLEDGE SOCIETIES

Index of knowledge societies

In the same year in which the UNESCO World Report “Towards Knowledge Societies” was presented, UN’s Department of Economic and Social Affairs prepared the Report “Understanding Knowledge Societies”. This report introduces the Index of Knowledge Societies, as a summary measure of the performance that countries register in the three dimensions: assets, advancement and the “foresightedness” a country displays in its quest to become a Knowledge Society¹⁵. It is the first attempt of the United Nations to capture and measure this complexity through a set of objective and comparable indicators. The authors point out that it has been extremely challenging to identify measures able of capturing the critical dimensions of the Knowledge Society, because they are not internationally measured by any existing inter-governmental organization; or when they are, this is done in a very incomplete way that makes broad international comparisons difficult. These difficulties were reflected in the final ranking which includes only 45 instead of the 191 countries with which it was started, due to the availability of data for them in all of the chosen categories.

The Index of Knowledge Societies represents a synthetic measure that aims at capturing a country’s achievement as far as the conditions fundamental for the development of a Knowledge Society are concerned. Such conditions are grouped into three main dimensions: assets, advancement and foresightedness, each of which is measured by a number of underlying indicators. Assets are represented by: a large pool of young and educated people (as measured by expected schooling and proportion of people below age 15); and the development of the means through which information can flow (as measured by the diffusion of newspapers, the Internet, main phone lines and cellular phones). Advancement is the degree to which a country nurtures and advances its human and informational resources, as measured by: public health expenditure, research and development expenditure, military expenditure, pupil/teacher ratios in primary education, and a proxy of the “freedom from corruption” indicator. Foresightedness is the degree to which a state grows and develops along its path to a Knowledge Society, while minimizing the impact

¹⁴ UNESCO World Report “Towards Knowledge Societies”, UNESCO Publishing, 2005

¹⁵ “Understanding Knowledge Societies”, United Nations, 2005 <https://publicadministration.un.org/publications/> accessed 24.03.2020

of negative externalities on people and the natural environment, as measured by: low child mortality rates, equality in income distribution (GINI Index), protected areas as percentage of a country's surface, and CO₂ emissions per capita.

The listed indicators are expressed in different units and may have different impact on a Knowledge Society. Therefore, for the calculation of Index of Knowledge Societies, the authors tried to express each indicator in a homogeneous and comparable way. To achieve this goal, performance in each indicator was expressed as a value between 0 and 1 by applying the following formula:

$$\text{Index Value} = \frac{\text{Actual Value} - \text{Minimum Value}}{\text{Maximum Value} - \text{Minimum Value}}$$

According to this formula, the country with the lower performance will get an Index value of zero; the country with the best performance will be assigned a value of one; while all other countries will have values reflecting their relative distance from the best and worst performer. But, some indicators have different interpretations with respect to the IKS. That is, in some cases a high value represents a positive outcome, as for example, expected years of schooling, or research and development expenses, while in other cases a high value is detrimental, as emissions of CO₂ or military expenditure. In those cases, authors have reversed the Index value to make the interpretation of the value the same as that of all other indicators. The formula used to express those indicators as a value between 0 and 1 was the following:

$$\text{Index Value} = 1 - \frac{\text{Actual Value} - \text{Minimum Value}}{\text{Maximum Value} - \text{Minimum Value}}$$

With this approach all indicators bear the same meaning: the higher the value, the better; and the same interpretation is given to the Index. Once the single indicators have been standardized according to the formulas described above, authors calculated the Index corresponding to each dimension by averaging the values of the underlying indicators.

At the end of the Report is emphasized that all the measurement has been done on an experimental and illustrative basis. Experimental, as while the Report is based on the belief that measurement of the three dimensions would be crucial for the discussion of the subject; and illustrative, as the existing international statistical databases do not provide comparable information.

4. GLOBAL KNOWLEDGE INDEX

In 2017, the Executive Report: Global Knowledge Index was published, which resulted from the joint initiative between the United Nations Development Programme (UNDP) and the Mohammed bin Rashid Al Maktoum Knowledge Foundation (MBRF). In the Report is emphasized the importance of developing systematic and scientific tools to measure and monitor progress towards knowledge-based development. Hence, in view of the correlation between knowledge and sustainable development, the authors point out that Global Knowledge Index intends to measure the status of knowledge in various countries of the world, as this may represent a critical base for development choices and pathways. Due to the multidimensional nature of knowledge, a composite index was constructed consisting of six sectoral indices. According to them, the advantage of this type of structure is that composite indices allow for a single value that gives a fuller picture of the phenomenon being measured, and for the reason that composite measurements also better reflect possible connections between different dimensions and their internal interactions, and allow for standard comparisons between countries.¹⁶

The sectoral indices that form the pillars of the Global Knowledge Index are: Pre-University Education; Technical Vocational Education and Training (TVET); Higher Education; Research, Development and Innovation (RDI); Information and Communications Technology (ICT); and Economy. A seventh pillar 'General Enabling Environment' was added to support the sectoral indices, as these sectors do not operate in isolation from their surroundings, but rather in a space governed by a range of contextual factors - political, socio-economic, health-related and environmental. Hence, it is assumed that the more these sectors interact with each other and are integrated in a given country, the more the level of knowledge in that country increases, rendering it more capable of achieving sustainable human development. The Index is structured with a hierarchy of five levels: index, constituting (sectorial) indices, pillars, sub-pillars and variables. Each of the six sectoral indices has a weight of 15 percent, while the general enabling environment has a weight of 10 percent.

¹⁶ "Global Knowledge Index : Executive Report", UNDP & MBRF, 2017
<https://knowledge4all.com/uploads/files/KI2017/Summary_en.pdf> accessed 02.04.2020

The selection of variables (individual variables) included in the construction of each of the seven indices was based on a well-defined scientific methodology drawn from an extensive review of relevant local and international literature, as well as the experiences and concepts of international organizations and agencies. It also relied on an intensive consultation process that engaged experts from different countries. The 2017 GKI was calculated for 131 countries, using the most recent and best available data to calculate the variables for each country, with 2007 as a cut-off year and 2006 being exceptionally a systematic measuring tool is required to gauge and track progress in achieving the optimal conditions for both knowledge and development used for specific countries that required additional data to qualify for inclusion in the Index. The values of the composite sub-index were calculated by applying a series of successive aggregations starting with the (more detailed) variables and ending with the production of the index.

The arithmetic aggregation formula was used to calculate all composite indicators of the Index. The composite indicator (CI) is calculated by aggregating its sub-components (SI_j) as follows:

$$CI = \sum_{j=1}^n w_j \times SI_j$$

CI is the proposed composite indicator to be computed; w_j is the relative weight of the sub-component SI_j ; and n is the number of sub-components aggregated to form the composite indicator.

The joint initiative of the UN and MDPL for the Global Knowledge Index continued in 2018 and 2019, but the 2019 edition was accompanied by a second edition of the baseline study ‘The Future of Knowledge: A Foresight Report’¹⁷. This report uses an innovative knowledge measurement tool to analyse big data and evaluate awareness of skills and technology in 40 countries, which allows measuring and comparing countries’ readiness for further knowledge development in view of rapid technological developments and their impacts on key knowledge sectors. The authors point out that Global Knowledge Index assesses knowledge infrastructure through a stand-alone metric, so they devise a knowledge metric that combines online and social media analytics with traditional statistics to capture variations in technological awareness across countries and time. In doing so, they identify five key future fields of knowledge: artificial intelligence (AI), cybersecurity, blockchain, biotechnology and future skills. The future field awareness indices complement the Global Knowledge Index by providing a robust and up-to-date estimate of the present situation at country level in terms of the availability of the technological awareness necessary for technological uptake.

5. RELEVANCE OF CULTURE FOR KNOWLEDGE SOCIETY

In the mentioned methodological approaches for measuring the progress of the countries towards their transition to Knowledge Societies, is immediately apparent the determination and correlation between the knowledge and economic development. But, in the recommendations of UNESCO Report “Towards Knowledge Societies” it is stated that in addition to the production of science and technology indicators, in particular in developing countries, measuring effort should focus on the other constituent dimensions of knowledge societies, such as education, culture and communication.¹⁸ Also, the representation of a country's development only through economic indicators has long since been surpassed, with culture being recognized as an integral element for sustainable development.¹⁹ Another particularly important feature of cultural development is that it involves several segments of society, such as stakeholders involved in the public or private sector, and different types of organizations - for-profit companies or non-profit organizations. This is noted in numerous declarations, reports from experts, international institutions, national and local governments, civil society organizations, and other stakeholders.

Given that the term “culture” is utterly complex to define and its semantic field of meaning is so broad, that it inevitably leads to misinterpretations or misunderstandings, Jordi Pascual²⁰ summarizes the meaning of culture as: a

¹⁷ “The Future of Knowledge: A Foresight Report”, UNDP & MBRF, 2019
<<https://www.knowledge4all.com/en/129/Pages/The-Future-of-Knowledge--A-Foresight-Report-2019>> accessed 11.04.2020

¹⁸ UNESCO World Report “Towards Knowledge Societies”, UNESCO Publishing, 2005

¹⁹ The first conceptualisations of sustainable development were made in the field of the environment and were marked by the need to reduce the ecological impact of human actions. Nowadays, understanding of sustainability includes a wide range of cultural, ecological, social, and economic factors that are closely interconnected.

²⁰ “Culture and sustainable development: examples of institutional innovation and proposal of a new cultural policy profile”, UNESCO & UCLG, 2009
<http://www.agenda21culture.net/sites/default/files/files/documents/en/z_report_4_full_report.pdf> accessed 14.04.2020

number of activities related to the arts and the heritage, the way of life of a community and a dynamic (individual) process of cultivation. Similarly, the term ‘development’ has a wide range of definitions, but for the purpose of this study, I would mention the concept introduced by the authors of UNESCO Culture for Development Indicators²¹. Drawing from ‘Our Creative Diversity’, the 1996 UNESCO Report of the World Commission on Culture and Development, the authors refer to development as “...the process of enlarging people’s choices [that...] enhances the effective freedom of the people involved to pursue whatever they have reason to value.”²² In the existing scientific and research literature that study the concept of culture, there is certain ambivalence about the approaches used for examining the developmental contribution of the culture sector. Depending on the theoretical standpoint of the authors, they emphasise different processes and relationships when defining concepts and analysis of the culture sector’s contribution. There are different scientific and research schools of thought in this area, for instance: those that consider the role and contribution of culture sector review and analysis to be a sociological phenomenon; then those who see this as an urban phenomenon; or as an economic phenomenon.²³ Among the large number of studies on the impact of culture on development, for the aim of this study noteworthy mentions include several UNESCO reports and projects.

In 2009 with support of the Spanish Agency of International Cooperation for Development (AECID), UNESCO has developed the pilot project The UNESCO Culture for Development Indicator Suite (CDIS)²⁴, which concept is conceived as advocacy and policy tool that assesses the multidimensional role of culture in development processes through facts and figures. CDIS was developed as a comprehensive set of 22 quantitative and qualitative indicators grouped under 7 dimensions (each dimension is comprised of at least 1 indicator, while some of them may include as many as 5 indicators) which set out to illuminate the role of culture in development, particularly in low- to middle-income countries. The proposed dimensions: economy, education, governance, social participation, gender, communication and heritage, follow the recommendations of ‘Our Creative Diversity’, the 1996 UNESCO Report of the World Commission on Culture and Development. According to the authors, CDIS dimensions have been chosen because of their particular relevance and explanatory power in addressing the central question of how culture contributes to growth, and helps individuals and communities to expand their life choices and adapt to change. While some of these dimensions are directly related to the impact of culture on development processes, others concentrate on the role of culture in creating an enabling environment for development or have their focus on the required processes to fully exploit the potential of culture. Between 2009 and 2014 through collaborative applied research process, the Methodology manual for Culture for Development Indicators Suite²⁵ was completed. The authors of the Manual propose a hierarchical categorization of indicators to address the different levels of data availability. The priority category is the core indicators, and will be the basis for the national Culture for Development DNA²⁶. Among its 22 core indicators, the CDIS includes: Benchmark and descriptive indicators (a benchmark indicator suggests that there is an ideal to be achieved, allowing for comparability; a descriptive, or contextual, indicator assesses a variable without a clear target or ideal to be achieved); Individual-level and national-level indicators; Objective and subjective indicators; Cultural indicators and non-cultural indicators. Nevertheless, if a country has additional data on a particular topic that could add value to the overall understanding of that dimension, authors point out those additional indicators may be proposed. Moreover, if a country does not have data sources for the core indicator, but other relevant data sources exist with similar objectives, alternative indicators may be proposed.

²¹ “Culture for Development Indicators: Methodology Manual”, UNESCO, 2014

<https://en.unesco.org/creativity/sites/creativity/files/cdis_methodology_manual_0_0.pdf> accessed 20.04.2020

²² The authors of CDIS point out that Mahbub Ul Haq and three other human development pioneers – Keith Griffin, Terry McKinley and Paul Streeten – were members of the World Commission and had a strong influence on the vision of development the runs through ‘Our Creative Diversity’.

²³ “Measuring the economic contribution of cultural industries”, UNESCO, 2012

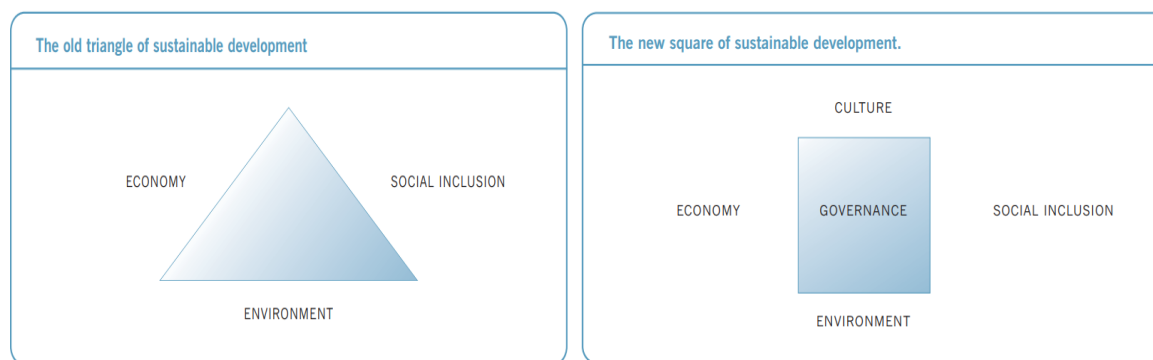
<http://www.lacult.unesco.org/docc/2012_Measuring_economic_contribution_cult_industries_UNESCO.pdf> accessed 29.04.2020

²⁴ UNESCO Culture for Development Indicator Suite, <https://en.unesco.org/creativity/activities/cdis> accessed 10.05.2020

²⁵ “Culture for Development Indicators: Methodology Manual”, UNESCO, 2014

²⁶ The Culture for Development DNA is a data visualization device created to facilitate a transversal analysis of indicators and a synthesis of the inclusive and multidimensional contribution of culture to development at the national level. The Culture for Development DNA resembles a bar code, where 22 bars summarize the results obtained at the national level for the 22 core indicators. See “Culture for Development Indicators: Methodology Manual”, UNESCO, 2014

Another important study within ‘Agenda 21 for culture’²⁷ was prepared by United Cities and Local Governments Organization and UNESCO in 2009²⁸. In this study entitled ‘Culture and sustainable development: examples of institutional innovation and proposal of a new cultural policy profile’, culture is introduced as the fourth pillar of sustainable development. The authors note that policies for development are generally built on three pillars: the economic pillar has to do with creating wealth; the social pillar redistributes this wealth; whilst the third pillar, the ecological watches over responsibility for the environment. They make the “virtuous triangle” of sustainable development. But, here they emphasize the need to structure a new “pillar” for sustainability, formulated by the Australian researcher Jon Hawkes²⁹. In doing so, the authors point out that:” the fourth pillar neither neglects a certain degree of overlap, nor the complementarity with each one of the other pillars. In a society with a growing diversity (not only ethnic diversity), that needs to value knowledge and life-long learning, that is connected (at least potentially) to all the societies of the world... You, he, she, I, we... need to build a cultural pillar that helps us to understand the world, by discovering that our roots, our traditions, our cultures, are not self-evident, by building on our human development through the access to, and practice with, cultural activities.”



In the same year UNESCO developed the Framework for Cultural Statistics³⁰. It is a first attempt towards the establishment of a methodology and standard for organizing cultural statistics that will allow for the production of internationally comparable data. According to the authors, the Framework was inspired by a definition of culture based on the cultural cycle model³¹. In accordance with this model, the culture sector covers the following domains: cultural and natural heritage, performance and celebration, visual arts and crafts, book and press, audio-visual and interactive media, design and creative services, and transversal domains, such as intangible cultural heritage, education and training, archiving and preservation. The list of cultural domains also includes related domains like tourism, sports and recreation, as well as equipment and supporting materials for cultural domains. Based on the 1986 Framework for Cultural Statistics, this revised version takes into account new concepts that have emerged

²⁷ ‘The Agenda 21 for culture’ is a commitment of a local government with the citizenry to elaborate and implement cultural policies and programmes. It can also be considered as a declaration of cities for cultural rights. The Agenda 21 for culture aims to reinforce the cultural pillar of cities. The contents of Agenda 21 for culture can also be summarised thematically: (a) culture and human rights; (b) culture and governance, (c) culture and territory, (d) culture. <http://www.agenda21culture.net/sites/default/files/files/documents/multi/ag21_en.pdf> accessed 03.05.2020

and social inclusion, (e) culture and economy.

²⁸ “Culture and sustainable development: examples of institutional innovation and proposal of a new cultural policy profile”, UNESCO & UCLG, 2009

²⁹ Hawkes, J. “The fourth pillar of sustainability. Culture’s essential role in public planning”, Cultural Development Network, 2001

<<http://www.cultureandheritage.govt.nz/cwb/pdfs/Jon%20Hawke%20%20Fourth%20Pillar%20of%20Sustainability.pdf>>, accessed 16.03.2020

³⁰ “Framework for Cultural Statistics”, UNESCO, 2009 <http://uis.unesco.org/sites/default/files/documents/unesco-framework-for-cultural-statistics-2009-en_0.pdf> accessed 07.05.2020

³¹ The culture cycle lays out in five stages or linkages : creation; production; dissemination; exhibition/reception/transmission; and consumption/participation.

<http://www.unesco.org/new/en/culture/themes/cultural-diversity/cultural-expressions/programmes/global-alliance-for-cultural-diversity/culture-cycle/>, accessed 22.04.2020

since 1986 in the field of culture, including those related to new technologies, defining them as cultural or partially cultural domains. Also, the issue of the creative – cultural debate was addressed by allowing the inclusion of some specific creative industries (design and advertising) as a separate culture domain.

In 2012 UNESCO Institute for Statistics published the report “Measuring the economic contribution of cultural industries: A review and assessment of current methodological approaches”³². According to the authors, the growing interest in cultural industries and their rapid acceptance as a fairly general model for addressing development problems at the economic and political level, have contributed for cultural industries to become an important component of the modern economy and knowledge-based society due to their impact on the enrichment of development. The term “cultural industries” is used in accordance with UNESCO’s view “as a set of activities that produce and distribute cultural goods or services, which at the time they are considered as a specific attribute, use or purpose, embody or convey cultural expressions irrespective of the commercial value they may have”. Authors point out that there is a lack of a unique and common platform for discussing the classification of cultural industries, the measurement of their economic impact, and the potential of linking and upgrading multidisciplinary approaches. This lack not only has a negative impact on research in this field, but also makes it difficult to build a comprehensive scientific and practical framework for measuring the economic contribution of cultural industries to development. This report examines two different types of core methodological approaches currently in use: those ones dedicated to measure economic contribution of cultural industries and those dedicated to measure economic impact of cultural industries. In the conclusion, the authors introduce ‘Basic model for measuring the economic contribution of cultural industries’, which lists several indicators and measures.

Indicator	Measure	Description	Policy relevance, analysis and interpretation
Gross value added	Gross value added/GDP of cultural industries or sub-sectors	Gross value added/GDP of cultural industries or sub-sectors in absolute terms (and per capita)	Can be used for measuring economic value and level of activity in cultural industries, importance of cultural industries in generation of economic macro aggregates; identifying type of relationship between cultural industries and the overall economy and cultural industries development model (e.g. growth model, welfare model, etc.); and for identifying structural change in economy towards creative economy.
	Gross value added/GDP of cultural industries in relative terms	Share of cultural industries value added/GDP in GVA/GDP of total economy (%)	
	Distribution of gross value added/GDP by sub-sectors	Share of cultural industries sub-sectors in total gross value added/GDP of cultural industries in absolute and relative terms	
Turnover	Turnover of cultural industries or sub-sectors	Turnover of cultural industries or sub-sectors in absolute terms (and per enterprise)	Can be used for indication of economic value and level of activity in cultural industries; indication of environment for cultural industries, market penetration of cultural industries, economic strength of cultural industries, and for assessment of economic contribution of cultural industries to development.
	Turnover of cultural industries in relative terms	Share of cultural industries turnover in overall economy's turnover	
	Distribution of turnover by cultural industries sub-sectors	Share of cultural industries sub-sectors in total turnover of cultural industries in absolute and relative terms	
Employment	Contribution of cultural industries employment to total employment	Share of cultural industries employees in total employment (%)	Can be used for measuring importance of cultural employment in overall employment, potential for job creation, etc.
	Distribution of employment in cultural industries sub-sectors	Share of cultural industries sub-sectors employment in total employment in cultural industries in absolute and relative terms	
	Volume and share of self-employment	Number of self-employment jobs/share of self-employment in total self-employment jobs in economy	
	Labour productivity in cultural industries	GVA in cultural industries per employee	
Business activity	Stock of business	Number of businesses by size in cultural industries	Can be used for indication of cultural diversity and level of supply of cultural products and services; start-up and mortality indicators can be used for measuring turbulence in enterprise life-cycle, sub-sector maturity; for modelling cultural industries support programmes; for indication of business structure, concentration or diversification; and for analysing similarity and differences between cultural industries and rest of economy, etc.
	Distribution of businesses by sub-sectors	Number of businesses by size in cultural industries sub-sectors	
	Business start-ups	Number of new businesses in cultural industries per 10,000 population	
	Business mortality	Number of closed businesses in cultural industries per 10,000 population	
	Distribution of start-ups by sub-sector	Number of new businesses in cultural industries sub-sectors per 10,000 population	
	Distribution of business mortality	Number of closed businesses in cultural industries sub-sectors per 10,000 population	

Due to the high correlation between value added and turnover or sales revenues, they point out that these indicators can be used as proxy indicators and alternative measures of economic size and contribution of certain cultural industries sub-sectors. There is also a possibility to estimate the economic contribution of non-marketable production of cultural industries by using expenses as a proxy indicator for market value. The authors are aware that when each measure is critically reviewed, certain limitations will appear. But, they suggest that measuring the economic contribution of cultural industries should start at a broad level of economic measures and data, and with a certain level of flexibility. They also propose that measures presented in the model can be tested as subindicators

³² “Measuring the economic contribution of cultural industries: A review and assessment of current methodological approaches”, UNESCO, 2012

with the aim of constructing a ‘Cultural Industries Development Index’ in the future. This index should be constructed as a composite index – a combination of single indexes which can be used for measuring how countries are making progress with cultural industries policies and strategies for economic development, and how these strategic initiatives are stimulating or restricting the development of cultural industries. The first stage of development of the index could be the elaboration of its theoretical base (sub-indicators, correlation between subindicators and economic and policy dimensions, which should be measured). The next step would be to test each sub-component of the index on a sample group of countries to see how well the different components correspond to the practical situations in various countries. Indexes can be constructed in two ways: as a simple arithmetic average of the scores of the index’s subcomponents or as a normalisation of the value of variables/indicators, combined with equal weight and averaged to provide a score for the whole index; or this can be done with ranking. Also, they point out that several variables can be grouped together and used in the construction of a Cultural Industries Development Index: the first cluster of a the index should contain basic information on the economic dimension of cultural industries, as commonly reported by countries (number of enterprises, number of businesses by size, number of self-employed, etc.); the second cluster should contain information on the economic activity of cultural industries (GVA/VA, turnover, sales revenue, etc.); the third cluster should contain information on employment (number of employees, number of self-employed, average earnings, etc.).

6. CONCLUSION

The emergence of the Knowledge Society has raised many hopes for overcoming the challenges facing modern society. In order to determine a point at which one can determine that a society has successfully completed a transition to the Knowledge Society, it is necessary to establish appropriate methods for measuring the development of countries toward Knowledge societies. The aim of this study was to present an overview of the initiatives for developing approaches applied in measuring dimensions of Knowledge Society. Through analysis of the reports about measuring instruments which will enable dimensions that are critical for the Knowledge Society to be internationally measured, it is apparent that quantification of knowledge in a way that allows for comparisons across countries and timeframes is exceedingly difficult. It seems that the Knowledge Society implies a transformation in our approach to measuring what is important in development, while countries transit into the Knowledge societies. In the presented measuring instruments, it is obvious that each approach has its advantages and disadvantages, while the relation between the economic development and the development towards Knowledge societies is common to them. Due to the complexity of the measurement of cultural development, as well as for many other reasons, researchers have tended to avoid getting too closely involved with the concept of culture and the role it may play in moving a country forward. But cultural development is a process aimed at expanding opportunities for expression and access to knowledge. In this regard, there is a growing tendency in many countries to include different aspects of cultural development in measuring national developmental performances. In addition, a number of researches and projects have been initiated to analyze the impact of culture on development, as well as initiatives to establish a methodology for organizing international data from cultural statistics. Hence, in the conclusion of this paper is the proposal to consider the possibility of implementing cultural development amongst the dimensions for measuring the development of countries towards Knowledge societies.

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