ABSTRACT

Most contributions that have analyzed the information society complain about the lack of a more standardized and elaborated operationalization. In this article, a methodology is presented to extract the indicators that attempt to appropriately measure the information society and serve as the basis and standard for internationally comparable information society statistics. These indicators, which are called core indicators of the information society, are extracted by studying and analyzing 39 reputable information society and digital divide models and using content analysis, entropy method, Scree test, and Pareto analysis. The proposed methodology is developed as a reaction against the limitation of the non-existence of numerical values for some indicators in the majority of countries. Finally, comparing the global core indicators of the information society and the proposed ones, it reveals that the global core indicators of the information society have ignored two important dimensions: e-learning and networked world enablers. [Article copies are available for purchase from InfoSci-on-Demand.com]

Keywords: Core Indicators; Digital Divide; Entropy Method; Information Society; Pareto Analysis; Scree Test

INTRODUCTION

The 20th century witnessed the rise of the perception of a major social transformation, called the “information revolution.” Managing the transition towards an information society yielded the potential to benefit from the multiple positive effects generated to a substantial extent by its core component, information and communication technology.
moving towards an information society requires the continuous process of monitoring and evaluating progress in achieving the goals of such a society, which, in turn, needs the application of indicators, particularly in the developing world, where the digital divide is a prominent political issue. In addition, the comparable statistics on the access to and use of ICTs are crucial to formulating policies and strategies concerning ICT-enabled growth, and social inclusion and cohesion, and monitoring and evaluating the impact of ICTs on economic and social developments (UN, 2005a).

Unfortunately, internationally comparable information society statistics are very limited, particularly in developing countries. Therefore, it is necessary to propose indicators whose statistics can be obtained by the majority of countries; they can serve as the basis and standard for internationally comparable statistics and properly assess the information society of countries (UN, 2005a).

To overcome the existing statistical divide, and to improve the availability, quality, and comparability of statistical information for analyzing the information society, a number of key stakeholders—including several United Nations agencies and regional organizations—proposed core indicators of the information society. However, the list of core indicators is by no means exhaustive; countries can exploit the list as a basis for comparing information society statistics. But it might need to be modified and customized to fit with national policy needs, which may be only partially covered by the core list.

Due to technology’s rapid changes in different ICT aspects and the need for assessing novel ICT applications, the current set of core indicators of the information society is not intended to constitute a final list (UN, 2005a, p. 2). Additionally, the set of indicators demands a continuous improvement process and periodic reviews. In other words, as countries gain experience with the collection of data on the indicators, and policy needs evolve, indicators must be modified, discarded, or added (UN, 2005a, p. 2). In this article, a methodology is presented to extract core indicators owing to the non-existence of data on some indicators in most countries. It is noteworthy to mention that the topic of core ICT indicators is so novel that little work has been done on it. Therefore, studies on core ICT indicators are very scarce, and only some international organizations such as the UN and the European Commission have addressed such a topic, as mentioned in the review of literature.

The advantage of the proposed methodology over the previous ones is that information and knowledge of information society and digital divide models were used by experts to extract the core indicators of the information society without using questionnaires. Thus, problems and limitations of questioning, such as lack of access to international experts, can be avoided.

## RELATED WORK

A prerequisite to international comparison of indicators is that the underlying statistics must adhere to certain standards. In the field of ICT indicators, Organization for Economic Cooperation and Development (OECD) countries have been discussing standards since 1997, mainly through the Working Party on Indicators for the Information Society (WPIIS), and substantial progress has been made during this...
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