

A Study on the evaluation of the ICT development indexes and some results

Narantuya Erkhembaatar*, Otgonbayar Bataa**

* Department of Communications engineering, Mongolian University of Science and Technology, Ulaanbaatar, Mongolia

** Department of Communications engineering, Mongolian University of Science and Technology, Ulaanbaatar, Mongolia

narantuya@must.edu.mn, otgonbayar_b@must.edu.mn

Abstract— The ICT Development Index (IDI) functions as an established tool for assessing the digital divide and facilitating comparisons of ICT performance within and between countries. Information entropy, representing the level of uncertainty in a random variable, can be applied across various fields, including information and communication technology (ICT). When designing data analysis using information entropy, it is essential to observe, evaluate, and utilize metrics derived from this method. The proposed methodology aims to allocate weights to the indicators within the ICT Development Index for country ranking. To assess the efficacy of this methodology, we explored its potential applications in evaluating indexes. Our model incorporates an innovative approach that combines the entropy weight coefficient method with the correlation coefficient weighting method. We present the evaluation results of the integrated calculation method in Mongolia.

Keywords— ICT indicators, entropy weight, IDI, correlation coefficient weight, ICT development index



Narantuya Erkhembaatar received a bachelor's degree in telecommunications engineering from the Polytechnic Institute of Mongolia in 1989, and in 2002 she earned a master's degree in technology from Andhra University in India. Her bachelor's thesis focused on investigating electronic exchange in the telecommunication network of Ulaanbaatar city, while her master's thesis involved the development of CBT for satellite communication. Her doctor degree thesis was centered on researching the determination of ICT development indicators based on entropy.



Otgonbayar Bataa, in 1978 graduated from the Polytechnic Institute of Mongolia majoring in Radio communication engineer. Bachelor degree thesis: Feasibility study of improving the efficiency of discrete information system. Master degree thesis (M.Sc) in 1995: Some issues of speech synthesis. PhD degree thesis in 1996: Study of Mongolian speech synthesis and applying it in telecommunication technics, in 2003, post Ph.D program thesis: Optimal version of OFDM system frequency and time-distortion. Professor. Consulting engineer of Mongolia. Research topic: Broadband, high speed integrated services technologies (WiMAX, WiBro, Mobile IPTV, LTE etc).