

Analysis of Knowledge Base Units within Standardized Electrical Engineering Subfields

Živadin Micić, Momčilo Vujičić, Vera Lazarević

Faculty of Technical Sciences, University of Kragujevac

Svetog Save 32, Čačak, Serbia

micic@kg.ac.rs, momcilo.vujicic@ftn.kg.ac.rs, vera.lazarevic@ftn.kg.ac.rs

Abstract: The paper presents a comparative and multicriteria statistical analysis of knowledge base units as shown on the examples of standardized subfields of electrical engineering. A number of objectives have been realized on knowledge pathways, both globally and locally, and initial hypotheses have been confirmed. Ranking/clustering among standardized fields and subfields has been carried out based on time-frequent innovations presented by knowledge base unit quantities and values. Web applications for analysis and singling out of samples from the entire Web-population of local (SRPS) and global (ISO) standardization have been developed and implemented. These applications represent a significant contribution to authenticity, particularly the authenticity of statistical research methodology.

Original regression equations with accompanying indices of quantity, knowledge base unit values and ranking have been developed on the examples within the field of electrical engineering. Results of this study enable the realization of some higher practical objectives, i.e., (1) modification of teaching subjects and improving educational and financial resources for the quality of knowledge, (2) ranking of both narrow and broad standardized technologies and scientific fields.

Keywords: electrical engineering; knowledge; standardization; SRPS; ISO; subfield

1 Introduction

1.1 What Problem Does the Paper Look at?

The paper looks at the comparative and multicriteria analysis and evaluation of the international (ISO/IEC) and local (SRPS – designation of standard in Serbia, [1]) knowledge in the subfields of electrical engineering. In this particular field, knowledge pathways differ from other standardized fields of human endeavour. In this field more importance is given to local and individual rather than collective knowledge. According to the international classification of standards (ICS_1),

