

Cluster Analysis of Knowledge Sources in Standardized Electrical Engineering Subfields

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Abstract: The paper presents a cluster analysis of innovation of knowledge sources based on the standards in the field of Electrical Engineering. Both local (SRPS) and global (ISO) knowledge sources have been analysed with the aim of innovating a Knowledge Base (KB). The results presented indicate a means/possibility of grouping the subfields within a cluster. They also point to a trend or intensity of knowledge source innovation for the purpose of innovating the KB that accompanies innovations. The study provides the possibility of predicting necessary financial resources in the forthcoming period by means of original mathematical relations. Furthermore, the cluster analysis facilitates the comparison of the innovation intensity in this and other (sub)fields. Future work relates to the monitoring of the knowledge source innovation by means of KB engineering and improvement of the methodology of prediction using neural networks.

Keywords: Electrical engineering, Increment analysis, Innovation, Knowledge Source (KS)

1 Introduction

Innovations in the field of Electrical Engineering bring changes that directly affect the quality of products and life. Innovations at local and global levels vary depending on the economic, human, social, institutional, and other circumstances. This difference results in the need for a systematic and comparative review of innovations at local and global level, through the standardized knowledge sources (knowledge source (KS) in [1], term 28.04.03) as a measure of innovation. The local level is analysed on the examples of local sources (SRPS: designation of a standard in Serbia [2]), while the global level refers to ISO/IEC KSs.

According to the International Classification of Standards (ICS) [3], the field of “electrical engineering” is the 29th field (ICS_1 = 29) and consists of 19 subfields (ICS2).

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