MCDM for Candidate Selection in E-Voting

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ABSTRACT

E-voting is one of the most important components of e-democracy and forms the basis of a democratic governance system. Voting results always lead to a broad debate in terms of candidate selection and whether the candidate elected to a position is suitable for that position. At present, the selection of qualified personnel and their appointment to responsible positions in public administration is one of the topical issues. In this article, an MCDM model is proposed for selection of candidates in e-voting. Criteria for the candidates' selection are determined and the relation of each candidate to other candidates is assessed using a binary matrix. Candidate rating is calculated according to all criteria. A numerical experiment is provided for candidate evaluation on the base of the selected criteria and ranked according to the importance of the criteria. The proposed model allows selecting a candidate with competencies based on the criteria set out in the e-voting process and making more effective decisions.

KEYWORDS

E-government, E-democracy, E-voting, MCDM, Candidate Selection, Election, E-Government Maturity Model, Governance

INTRODUCTION

The efficiency in the governance concept can be achieved with the close participation of citizens, as well as civil societies in the process of politico-administrative decision-making. E-government forming a new environment in this regard. According to some researchers, a transition must be made from e-government term to e-democracy (Williams, 2006; Meier, 2012; Taghavifard, Fadaei & Ebrahimi, 2014).

Describe the general perspective of the article. End by specifically stating the objectives of the article. The strengthening and development of democratic institutions, the use of information-communication technologies (ICT) and information infrastructure for the expansion of civil participation of public and political processes reflects the essence of e-democracy (Anttiroiko, 2003; Carrizales, 2008; Strielkowski et al., 2017).

At present, the study of the role of e-voting in the countries which have adopted the formation of e-democracy as a priority is deemed as an integral part of investigations in the field of e-democracy.
The dynamic development of ICT and the enhancement of social media tools have resulted in significant changes in the functioning of modern countries and societies. ICT has started to play practically an important role in all fields of human life including the political processes. As one of the important components of e-democracy, e-voting encompasses interesting research topics such as participation mechanisms in elections, the provision of legitimacy, technological solutions and the efficient application of those in e-voting process. In this regard, e-voting can be considered as one of the forms of e-democracy (Musial-Karg, 2014). In the study approaches regarding the development of new e-voting mechanisms are analyzed.

At present, human resources are considered as the main strategic resource of the government. The selection of qualified personnel at the government level and their appointment to the responsible positions are important issues in economic and political processes and globalization in the world. Candidate selection is understood as a process in which a particular position is selected by the best candidates for the vacancy. Different methods and technologies that help the decision makers to predict how successful a candidate will be in the future workplace are applied in the recruitment and selection process. (Dursun & Karsak, 2010; Kabak et al., 2012; Tuan, 2017; Afshari et al., 2017).

In literature MCDM is widely used in various fields, such as selection of appropriate personnel in the recruitment process, choice of equipment in production, selection of projects, etc. (Dursun & Karsak, 2010; Kabak et al., 2012; Kazana et al., 2015; Tuan, 2017). There are research studies on the comparison and review of MCDM (Stanujkic et al., 2013; Zavadskas et al., 2014; Mardani et al., 2015, Khorami & Ehsani, 2015).

Literature analysis has few research studies on the application of MCDM for the candidates’ selection in the election process. Royes & Bastos (2001) is dedicated to the use of fuzzy multi-criteria decision-making in the election prediction. As the practical result of the research was proposed computational system for election forecasting According to the decision maker (system user) the proposed flexible system allows to select the fuzzy weights and fuzzy evaluation functions of the criteria. Kazana (2015) showed in research totally 15 criteria are taken into account when selecting deputy candidates for political parties. The weight of the criteria is evaluated by the party representatives by the method of the analytical hierarchy process (AHP), using the FARE (Factor Relationship) method. Candidates are assessed based on the criteria selected by applying the MCDM. An empirical assessment is carried out in the research work and the candidates to the deputies are ranked by the MCDM.

Obviously, the effective government functioning is directly depending on human resources, and the participation of qualified, personnel with competencies in governance is an issue of national importance. From this point of view, the candidates’ selection with the appropriate competencies in the appointment of the elected candidates to administrative positions as a result of e-voting, which criteria and factors that should be considered in the selection process is referred to topical issues. The article considers the application of MCDM for the candidates’ selection in e-voting.

**E-DEMOCRACY AS THE LATEST STAGE OF E-GOVERNMENT DEVELOPMENT**

The development of ICT has an impact on social, economic and political life. In particular, the development of ICT, e-government building and the formation of e-government mechanisms have substantially changed the public governance and political processes. Nowadays, advanced technologies and the requirements posed to government services are transforming the functions of e-government. The transformation of citizens’ rights, their close participation in social processes and decision-making allows to achieve the effectiveness in public administration and democracy.

The concept of e-democracy emerged in 1990’s has started to be perceived as an evidence of changes taking place against a backdrop of democratic principles in government. The support of ICT application in political arena has facilitated the emergence of e-democracy which encompasses new methods of governance of democratic government. Political institutions,
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