A Fuzzy TOPSIS Method for Selecting An E-banking Outsourcing Strategy

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ABSTRACT

Selecting the appropriate IT outsourcing (ITO) strategy is important for firms in general and banking institutions in particular to achieve expected benefits, but it remains complex, risky and lengthy process for clients to select the appropriate ITO strategy. Previous academic efforts to support ITO decision incorporated a limited number of factors, which is over-simplification of multi-faceted real world problems. In this paper, after doing in-depth literature review for identifying influencing factors on such ITO decisions, a model with an application of Fuzzy TOPSIS based approach is proposed to rank and prioritize the alternatives. Throughout this study, the authors use data from a real banking case to run the model for supporting outsourcing decision for five ATM, POS, tele-banking, mobile, and internet-banking services. The proposed model can help ITO decision makers advance their decision making process, especially where parameters involve uncertainties and hardly can be assessed by human judgment.

KEYWORDS

E-Banking Service, Fuzzy TOPSIS, IT Outsourcing Decision, Multi-Criteria Decision-Making (MCDM), TOE Model

INTRODUCTION

IT Outsourcing (ITO) is crucial as organizations seek to achieve ITO promised benefits (e.g., cost saving benefits, focus on core competencies). Recent trends such as globalization, consumers demand volatility, business restructurings (mergers, acquisitions, joint ventures, etc.) and advances in IT tools and technologies have been important facilitators of ITO (Gerbl, McIvor, Loane, & Humphreys, 2014). Notwithstanding ITO benefits, ineffective ITO efforts in which clients failed to realize the expected benefits are broadly reported; meanwhile, 25% of outsourcing projects fail to deliver promised goals (Ishizaka & Blakiston, 2012). Deloitte Consulting reported that in a survey, 64% of respondents had brought outsourced services back in-house and 44% did not realize cost savings (Landis, Mishra, Porrello, & Landis, K.M., Mishra, S., Porrello, 2005). Another Deloitte survey also found that only 34% of 300 business executives as the research sample were satisfied with their vendors’ provided service quality level; while 61% had confronted serious problems within the first year of the contract (Robinson et al., 2008). Regardless of the significant failure rate, it is expected that ITO trend is

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developing worldwide with a remarkable speed (Mann, Folch, Kauffman, & Anselin, 2015). However, in Iran’s marketplace where IT situation is generally considered quite diverse from those of Western countries, ITO rate is still low. Then, the question arises as: What are the main drivers and hindrances that impact upon the level of IT outsourcing in Iranian firms?

Some previous research have highlighted the ITO benefits and risks (e.g., dos Santos & da Silva, 2016; Gewald & Dibbern, 2009) as well as the success or failure of several outsourcing projects (e.g., Delen, Peters, Verhoef, & van Vlijmen, 2016; dos Santos & da Silva, 2015). Making the right ITO decision is an important problem to a degree which wrong ITO decision has been cited as one of the most critical reasons led to ITO final failure (e.g., Wang & Yang, 2007). Therefore, the precise decision process is of crucial importance to enhance the ITO success rate. Consequently, it is imperative to examine the various factors associated with the ITO decision. Then, in this paper we address the following research questions in the context of e-banking services outsourcing decision:

**RQ1:** What are the factors for evaluating e-banking services outsourcing strategies?

**RQ2:** How can banks evaluate and select their e-banking services outsourcing strategies?

The rest of the paper is structured as follows. Next section summerizes the past ITO decision research followed by reviewing the related factors on the evaluating ITO strategies. After that, the stages of evaluation process: the fuzzy multi-criteria decision-making (MCDM) technique and proposed approach in this research is explained. Subsequently, an actual application of the proposed method in a banking case is provided for validating the model. Finally, the last section concludes the research and its findings and proposes future research.

**RELATED WORK**

Some previous research have already addressed ITO decision making problem. Buck-l ew (1992) proposed that technical, project management, business and organization factors should be considered for ITO. Ketler and Walstrom (1993) proposed an ITO decision model including personal, economic, risk, characteristics of outsourced data, organizational characteristics, and vender and contract issues. The strategic grid framework has been proposed by McFarlan and Nolan (1995) to support ITO decision. Lacity et al. (1996) proposed a decision matrix guiding the selection of outsourcing candidates based on the business, economic, and technical factors.


Sebesta (2013) proposed SOURCER framework for ITO decision-making in SMEs context with the aim of helping clients manage their IT service portfolio, effectively. Finally, Gerbl et al. (2014) proposed a framework for business process outsourcing (BPO) decision with a focus on location
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