Prioritizing IOT Implications for Innovation in Marketing Mix by Considering Technological, Legal and Market Factors in Iran

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Introduction

According to the literature review, marketing activity and innovation are the main processes to create value for customers. Furthermore, with the advance of digital technologies, many researches have considered application of these technologies to extend marketing activities as a source of innovation in organization (Baumgärtner and Winkler, 2003). The Internet of Things (IoT) that is one the recent and popular technology amongst digital technologies has shown a new direction for doing innovative research in the marketing activities (Mohammadian et al., 2019, Atzori et al., 2010). Since the implementation of innovative applications of IoT in digital marketing are high-priced and time consuming, prioritizing IoT implications is required for policy-making regarding to which IoT implications is attractive for this area. This study propose a framework based on fuzzy multi criteria decision-making (FMCDM) approach for prioritizing innovative IoT implications for marketing mix based on factors including market forces, legal conditions, and technological infrastructures.

Objective

Since market forces, legal conditions, and technological infrastructures heavily influence the development and diffusion of IoT, the purpose of this study is propose a framework to prioritize the application of IoT in marketing mix for policy-makers. Hence, this research aims to answer the following question:

What are prioritizations of innovative applications of Internet of things as one of the most transformative technologies in the marketing mix based on technological, legal and market factors?

Data/Methodology

This study is an applied research in terms of purpose and is a mixed method (qualitative-quantitative) in terms of method research. In the first phase, the initial list of criteria that extracted from literature review are made available to experts for weighting it. Due to nature of problem, Analytic Hierarchy Process (AHP) method is used for weighting criteria. To reduce intuitive bias and deal with incomplete information in subjective environment, fuzzy sets theory and linguistic variables quantified using triangular fuzzy numbers are used to prioritize the application of IoT in marketing mix based on Technique for Order Preference by Similarity to Ideal Solution (TOPSIS) method.

Results/Findings

Since the IoT being at nascent stage, particularly in Iran, prioritizing IoT implications is required to reduce possible risks of its implementation (Mohammadzadeh, et al., 2018). Hence, in this study a framework based on FMCDM are proposed to prioritizing IoT implications for marketing mix. In this regard, IoT implication are categorized on seven marketing mix area including product, location, price, promotion, processes, physical evidence, and human resources. Then, these marketing mix areas are prioritized based on factors including market forces, legal conditions, and technological infrastructures.

Based on the calculations, the results indicate that market factors and user acceptance were determined as the most important main factor and sub-factor, respectively. Finally, IoT implications in different marketing mix domains based on the mentioned criteria respectively include product, promotion, physical equipment, processes, locations, Price and people that have a higher priority for Iranian businesses.

Implications

In order to policy-making in the IoT projects in marketing mix area recommended to:

- Investment in IoT infrastructures in order to persuasion and encouragement of private company
- Provide public education and publicize IoT technology in order to user acceptance and market demands
- Create new laws for privacy protection, data security, ownership protection, trust improvement

Keywords: Marketing mix, Internet of Things, Innovation, Fuzzy multi-criteria decision-making

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