عنوان مقاله:

Key Success Factors to Implement IoT in the Food Supply Chain

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خلاصه مقاله:

In the Industry ۴.۰ era, many pioneering industries are leveraging emerging technologies such as the Internet of Things (IoT) as solutions in the digital age. One of the largest and most active industries in Iran is the food industry, which stands to benefit significantly from these advancements. Achieving a sustainable competitive advantage is often possible at the level of the supply chain, where companies use information and communication technologies, such as IoT, to coordinate information, finances, and materials among supply chain actors. This research aimed to identify the key success factors (KSFs) for implementing IoT in the food supply chain. Firstly, through a systematic literature review, the KSFs for IoT implementation in the food supply chain were identified. To develop a measurement model, confirmatory factor analysis using structural equation modeling was employed, making the research applied-descriptive. A questionnaire was designed and completed by ۱۴۲ members of the "Amadeh Laziz" supply chain (a case study), who were selected using a stratified random sampling method. Confirmatory factor analysis and LISREL ۸.۸۳ were then used to validate the proposed model. Finally, the cause-and-effect relationship between KSFs in IoT implementation in the food supply chain was analyzed using Grey DEMATEL. Based on the confirmatory factor analysis findings, the KSFs in implementing IoT in the food supply chain were identified as technical, economic, legal, cultural and social, security, applicability of IoT throughout the supply chain, and implementation of IoT applications. Thus, the measurement model included eight factors and ۲۷ measures. According to the cause-and-effect relationship findings, "Implementation of IoT applications" and "Economic" factors were found to be mostly influenced, while "Applicability of IoT throughout the supply chain" and "Technical" factors were recognized as the most influential. The results of this research can guide food producers and technology policymakers in their supply chains and help avoid trial and error in IoT implementation by leveraging global and national experiences.

کلمات کلیدی:

Internet of Things (IoT), Food Supply Chain, Key Success Factors (KSF), Structural Equation Modeling (SEM), Grey DEMATEL