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A model for measuring and valuing technical knowledge in halal food industries

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Abstract

The purpose of this research is to design a model for measuring and valuing technical knowledge in the halal food industry. The present research is applicable in terms of purpose, and a mixed research (qualitative-quantitative) exploratory. The statistical population of the research in the qualitative part included 20 scientific experts and executive experts of the halal food industry, who were selected by non-probability judgmental and purposeful sampling. The statistical population of the quantitative part included 250 people from the food industry experts of Tehran province, among whom 152 people were selected using the Cochran formula and selected as the sample size by cluster random sampling method. The data collection tool in the qualitative part included a semi-structured interview, and in the quantitative part, a researcher-made questionnaire. The validity of the interviews was confirmed through retesting. And the content validity of the quantitative part of the questionnaire was also confirmed by the experts. In order to analyze the data of the qualitative part, the theme analysis method was used, and SPSS and PLS software were used for the quantitative part. The results showed that the measurement and valuation model of technical knowledge in the food industry consists of four main dimensions including: factors related to the company/organization, factors related to the extra-organizational environment, factors related to the nature of technology, and factors related to the technology market; along with 15 components and 72 indicators. The results of the research in the quantitative part also confirm the significant relationship between the dimensions, components and indicators of the final research model.

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Extended Abstract

Introduction

According to the Holy Quran, having a healthy body and soul is one of the requirements to achieve happiness in this world and the hereafter. In addition to that, the increasing development of the market of halal food products in the world, its globalization and the share of global markets in this field have made it necessary to design a model for measuring and valuing technical knowledge in the halal food industry. The subject of halal and paying attention to the culture of its use is a subject that is emphasized by the religion of Islam. By reflecting on the verses and narrations, we can clearly understand that this issue is extremely important in the view of Islam, and Islam has paid a lot of attention to it, and has mentioned many effects and consequences for observing or not observing it (Destmarad & Ghaibi, 2022). Valuating phenomena is a difficult task, but it is one of the most important activities of the present era. The rapid expansion of knowledge-based businesses in the last century has also made it necessary to examine conceptual points in the valuation of the entire business and the resources used (Zhou, 2021). So far, a standard and certain formula for valuing technical knowledge and technology of halal food industry has not been developed; but there are different methods that take into account the variables affecting the value of technology to some extent and provide acceptable solutions (Samuel et al, 2018). In valuing a technology, several factors such as environmental conditions, existence of suitable markets, etc. are influential; but in most cases, the final price of technology is determined through negotiation and depends on the negotiation skills and bargaining power of the parties to the transaction (Ghazinoory et al, 2016).

Based on this, the current research is looking for an answer to this question: What is the model of measuring and valuing technical knowledge in the halal food industry?

Theoretical Framework

Valuing technical knowledge

Today, knowledge and information is an important and vital factor for managing ambiguity and environmental complexities (Hsu et al, 2013) and technical knowledge is one of the most important intangible assets of companies, which the rapid changes in knowledge-based economies in the 21st century has increased its determination rate day by day (Gou et al, 2019). Technical knowledge is a collection of useful, confidential, innovative and valuable industrial information, along with it there is a collection of technical and non-technical knowledge and skills useful in the design, construction and other operations of an industrial unit used to produce a product or provide the required materials (Bahrami et al, 2022).

Al-shami & Abdullah (2023) examined the challenges of certification issiuing and exploitation of halal food industries and the opportunities of implementing the production system in Malaysia. The food and beverage sector, whose end products are consumed by humans, must face stricter and more extensive quality and safety standards.

Hervani et al, (2022) reviewed blockchain technology and sustainable supply chains from a social-valuation point of view. The results of this study showed that economic market valuation and non-market valuation can be used for blockchain technology.

Research methodology

The present research is applicable in terms of purpose, and a mixed (qualitative-quantitative) exploratory research. The statistical population of the research in the qualitative part included 20 scientific experts and executive experts of the halal food industry, who were selected by non-probability judgmental and purposeful sampling. The statistical population of the quantitative part included 250 people from the food industry experts of Tehran province,

among whom 152 people were selected using the Cochran formula as the sample size, selected by cluster random sampling method. The data collection tool in the qualitative part included a semi-structured interview, and in the quantitative part, a researcher-made questionnaire. The validity of the interviews was confirmed through retesting. And the content validity of the quantitative part of the questionnaire was also confirmed by the experts.

Research findings

In order to analyze the data of the qualitative part, the theme analysis method was used, and SPSS and PLS software were used for the quantitative part. The results showed that the measurement and valuation model of technical knowledge in the food industry consists of four main dimensions including: factors related to the company/organization, factors related to the extra-organizational environment, factors related to the nature of technology, and factors related to the technology market; along with 15 components and 72 indicators. The results of the research in the quantitative part also confirm the significant relationship between the dimensions, components and indicators of the final research model.

Conclusion

The current research has been conducted with the aim of designing a model for measuring and valuing technical knowledge in the halal food industry. The results obtained from this research has alignment with the theoretical foundations and findings of previous research such as Al-shami & Abdullah (2023), Hervani et al, (2022), Arefi et al, (2022), Destmarad & Ghaibi (2022), Liu et al, (2021), Yousefi (2021), Zhou (2021), Nikbakht et al, (2021), Bayat et al, (2021), Valdivia et al, (2020), Vaezi et al, (2020), Woo et al, (2019), Gooran et al, (2019), Samuel et al, (2018), Ghazinoory et al, (2016), Jang & Lee (2013), Bandarian & Bandarian (2013), and khatami firoozabadi et al, (2017). Since the valuation of technical knowledge has a decisive role in realizing the commercialization of knowledge, in this direction, it seems necessary to know the model of measurement and evaluation of technical knowledge and to try to develop it; and this issue reveals the role and the contribution of the present research in this field. The obtained results can provide a useful insight to the managers of the organization in the direction of how to value technical knowledge for use in the process of knowledge management and its commercialization.

-It is suggested that, with regard to the knowledge-based economy evolution in the country and changing direction from value creation of traditional methods based on physical assets toward intangible knowledge and the importance of technical knowledge measurement, technical knowledge attachment should be considered for all technology transfer contracts.

- It is suggested that the senior technology manager, in coordination with the managers of the technical and engineering and R&D units, continuously monitor and measure the organization's technical knowledge and the organization's need for technical knowledge, and remove the obstacles related to data and information limitations. In this regard, the strategies that can be adopted for the formation of coherent and integrated databases at the company level, the implementation of database management systems related to technical knowledge, and the monitoring of the validity, transparency, accuracy and adequacy of data should be given special attention.