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Structural Analysis of Drivers Affecting the Future of Accounting in Iran with an Emphasis on the Role of Technological Innovations

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Abstract
Purpose: In recent years, the dissatisfaction of the beneficiaries and users of accounting information, on the one hand, and the emergence of technological innovations, on the other hand, have made it important to pay attention to the factors influencing the creation of the future of accounting. Therefore, the aim of the current research is to identify and analyze the structure of drivers affecting the future of accounting in Iran from the perspective of new technologies.
Method: In order to identify the drivers affecting the future, semi-structured interviews with 17 experts were used and the most important ones were validated and agreed upon through fuzzy Delphi analysis. It should be mentioned that the structural analysis of the identified drivers was also done by applying the mutual effects analysis method through a questionnaire, using the Mac software. Finally, 72 drivers were accepted as important drivers in exploratory cognitive interviews and after performing fuzzy Delphi, the experts accepted 28 drivers. After the structural analysis of the drivers, the position of each driver in the form of the structural analysis matrix was identified as influential drivers, risk and target, effective and ineffective drivers.
Results: The results show that 13 drivers have the most influence on the future of accounting in Iran.
Conclusion: Conclusion: According to experts, access to the Internet and specialized human resources with interdisciplinary skills are one of the most important drivers that can affect the creation of the future of accounting.
Contribution: The results will be effective and useful in providing a systematic interpretation of the key drivers affecting the future of accounting from the perspective of new technologies and the relationships between them, this will also facilitate the formulation of future scenarios and policies.
Keywords: Drivers, Future Research, Structural Analysis, Fuzzy Delphi.
Research Article

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Introduction

The increasing spread of information and communication technology has caused extensive and profound changes in all aspects of human life (Amini Mehr and Naboi Nejad, 2017, 29). The economic and business environment is no exception to this. Accounting, as an information system, is operating in this turbulent environment. The aforementioned developments and the complexity of the business environment, the emergence of new economic issues, and the lack of accounting changes in line with them have led to dissatisfaction among users of accounting information. Shamszadeh et al. (2017, 128) believe that the changes in business areas and the rapid advancement of technology have led to the information contained in financial statements losing its relevance over time, which endangers the legitimacy of the profession. Therefore, it is essential to pay attention to accounting changes in order to meet the needs of stakeholders with regard to the key issues and drivers of the future from the perspective of emerging technologies. Drivers are a set of forces shaping the future that affect the future of various fields globally, nationally, or locally (Hashmian-Esfahani, 2010, 33). Success in identifying the driving forces, macro trends, and shapers of the future and examining their impact on key factors affecting each future and analyzing the feasibility of the occurrence of specific futures with the aim of creating desirable futures are among the goals of futures studies. It should be noted that futures research is a strategic tool that shows policymakers the most priority areas and helps them prepare for changes by providing an informative insight. Therefore, in the present study, we aim to conduct a structural analysis of the drivers affecting the future of accounting in the field of new technologies and examine what the main drivers affecting the future of accounting in Iran are in the next ten years (1402-1412), what are the interactions between them, which drivers have the most impact? And what are the obstacles and limitations to the use of technologies? The necessity of the subject is that by recognizing future trends and upcoming changes; Strategic drivers are identified and accountants are prevented from being surprised, and with careful consideration and sufficient understanding of changes, appropriate planning is carried out to keep pace with technology.

Materials and Methods

The research was conducted in two stages: interviews with experts and fuzzy Delphi analysis to identify trends and structural analysis to identify the mutual effects of trends on each other using the Meek Meek software. The current research population consists of faculty members of public and private universities, members of the profession, and members of the Certified Public Accountants Association; sampling was judgmental and continued based on the snowball method until theoretical saturation was reached and no new trends were obtained. This process was conducted through in-depth interviews with 17 experts, with sufficient education and experience, who met the necessary criteria such as awareness of the topic and breadth of opinion. The interviews were initiated and analyzed in 5 basic steps including organizing the interviews, identifying key

points, assigning titles to similar concepts, finding patterns, and categorizing patterns. 72 final drivers were identified during the interview phase. Then, the fuzzy Delphi technique was used to reach a consensus on the introduced drivers. The lowest value of each criterion was considered the minimum, the highest value of each criterion was considered the maximum, and the geometric mean of each indicator was calculated. To determine the threshold of this study, since the questionnaire used a 5-point Likert scale, we considered the number 4 as the threshold and calculated the fuzzy mean using the fuzzy mean method for the fuzzy numbers created in each criterion. The main limitation of many forecasting methods, including Delphi, is that events and processes are predicted individually, and their possible effects on each other are not discussed and examined. Therefore, the interaction analysis method is used to overcome this limitation in discovering high interaction effects and identifying important predictors using the cross-effects matrix. Since this matrix is of the intensity type, in each row of the matrix, if experts believe that there is no effect between the drivers, they put the number zero, low effects the number one, medium effects the number two, and strong effects the number three. The resulting matrix is structurally analyzed using the Mic Mac software.

Results and Discussion

Finally, according to the fuzzy Delphi method, 28 drivers were confirmed as future-oriented drivers, and 44 drivers received a score less than the threshold of 4 and were therefore not confirmed. For the structural analysis of the drivers, after completing the questionnaires by 13 experts and entering the information into the MicMac software, it was determined that out of 756 existing relationships, 126 relationships with the number one had little or little impact on each other. 559 assigned themselves a relationship of 2, which indicates a medium impact (influence or influence) on each other, and finally 71 cases assigned themselves a number three, which indicates that this number of relationships had a lot of impact (influence or influence). The final output is a diagram that determines the position of each of the identified variables as influential, bivariate, influential, and unaffected variables, as described in the table below.

Status		Title of Driver
Influential Drivers		Access to the web and internet, public participation in the capital market and the democratization of the economy, automation of tasks, eliminating the need for physical presence of accountants and auditors.
Dual-Impact Drivers	risk Drivers	Specialized workforce with interdisciplinary and IT skills, free flow of information: legal facilitation and support, development of blockchain technology, expansion of social networks, crisis in education and research (failure of universities to fulfill their roles), adoption of stakeholder theory and demand for transparency and accountability.
	Target Drivers	Development of Internet of Things (IoT) technology and the shared economy, introduction of an IT-based accounting discipline, development of robotics and machine learning technology, increase in data volume and reduction of data provision costs, development of AI-based accounting systems and business intelligence, cloud accounting and auditing, and development of big data technology.
Dependent Drivers		Maintaining confidentiality and information security, reducing the need for physical documents for accounting and auditing.
Regulatory Drivers		Elimination of interim reporting and provision of continuous, reliable, and timely information, development of knowledge-based businesses and startups, support from standard-setters for new technologies, cost of implementing IT-based systems, modernization of the tax system, and reduction of tax fraud.
Removable Drivers		Increasing importance of environmental issues and changes in the business environment, complexity of laws and regulations, forward-looking information instead of historical data, user-based relevance decisions and elimination of materiality criteria, improving continuous auditing and increasing its role in organizations.

The dispersion of drivers indicates the instability of the system due to their instability in the future and the uncertainty of the system. For this reason, there are numerous and extensive relationships between the drivers. Therefore, the ranking based on the analysis of direct and indirect effects show that 13 drivers in both analyses obtained the same rank with two shifts, which indicates the most priority drivers in the future. These are: "Access to the web and the Internet", "Expert human resources with interdisciplinary and IT skills", "Free flow of information: facilitating and legal support for new technologies", "Increasing the volume of data and information and reducing the cost of providing them", "Expansion of big data technology", "Applying stakeholder theory and demanding transparency and accountability", "Expansion of accounting systems based on artificial intelligence and business intelligence", "Expansion of personal technologies such as the expansion of social networks", "Expansion of blockchain technology", "Education and research crisis (failure to perform duties properly by universities)", "Expansion of robots and machine learning", "Expansion of Internet of Things technology and the collaborative economy" and "Elimination of interim reporting and provision of continuous information (reliable and timely)".

Conclusions

The findings of the research, based on the conditions of Iran in the ten-year horizon, indicate the need to amend and approve new laws and update them in accordance with the changes that have taken place. In the field of education, a favorable situation cannot be imagined for the future in Iran, but significant reforms are necessary to move towards the best and most successful international practices. Accountants in the new world of business must update their skills and knowledge, because in such an environment that is constantly changing, new needs will replace old needs. The need for accounting to keep pace with changes will push professionals in the profession towards new activities.

Finally, the drivers of access to the web and the Internet were not only introduced as a fundamental limitation according to the experts, but also, along with specialized human resources with interdisciplinary skills, are in a higher priority than other drivers.

As a result, the future of accounting is shaped by the convergence of new technologies that promise a paradigm shift in the way financial information is processed, analyzed, and used, creating unprecedented opportunities for improving the efficiency of accountants. However, the implementation of technologies requires a thoughtful approach based on limitations and addressing the evolving role of accountants in this transformative journey. Finally, it can be claimed that the list of trends identified in the present study and the presentation of the position of each of them in the structural analysis provides useful information to accounting policymakers. Therefore, by using the identified trends, they can assess the future of accounting and provide a favorable response to possible future changes in a way that will contribute significantly to strengthening the position of the profession. Also, the final trends identified in this research can be used to design and develop possible future scenarios.

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