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Investigating the impact of techno-stress on the intention to use blockchain technology and audit quality of audit firms

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Abstract

This study aims to investigate the effect of technostress on the intention to use blockchain technology and audit quality of audit firms. The research method is applicable in terms of its purpose, quantitative in terms of implementation, and descriptive-correlational in terms of nature and method. The population of the present study includes all auditors who are members of the Iranian Society of Certified Public Accountants. The statistical population is members of the Iranian Society of Certified Public Accountants, and the sample size was determined as 436 people based on Morgan table, selected by simple random sampling method. A standard questionnaire based on a 5-point Likert scale was used to collect research data. The content validity of the tool was confirmed by specialists and experts, and Cronbach's alpha and composite reliability were used to measure the reliability of the tool. By distributing the questionnaire, the validity of the tool was measured with three methods: construct validity (external model), convergent validity (AVE), and divergent validity. The AVE value for all variables must be greater than 0.5. SPSS and PLS software were used to analyze the data. The results of the study indicate that technostress has a positive and significant effect on auditors' intention to use blockchain. This study also shows that technostress also has a positive and significant effect on audit quality.

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Extended Abstract

Introduction

The accounting profession, especially the audit field, has been greatly influenced by recent technological developments. Factors such as stakeholder pressure, big data and digital information, automation of entry-level procedures, and the integration of technology into accounting processes have all affected the way the accounting profession performs its tasks (Smith, 2018). Another factor that has recently emerged and has the potential to impact the audit field is blockchain technology (Price, 2016; Smith, 2018). Blockchain technology helps coordinate information and exchange information and facilitates the transformation of accounting information systems functions into a more proactive role (Smith, 2018). Continuously uploading operational and financial information to a blockchain platform helps accounting professionals analyze information in real time (Banham, 2017; Al Shbail, Alshurafat, et al., 2023; Al Shbail, Salleh, et al., 2023; Taha et al., 2023). This continuously uploaded information is also verified by other members of a blockchain network, which increases the credibility of such information (Banham, 2017). Comprehensive integration of blockchain technology allows for the development of the audit process and covers current gaps in audit procedures (aminpoor et al.,2023, Dai & Vasarhelyi, 2017). However, according to studies, if technological tools such as blockchain technology are not properly integrated, the accounting profession can be disrupted (Smith, 2018). In other words, the adoption of new technological tools in the workplace, such as blockchain technology, may cause employees to experience what is called “technostress” (Fischer & Riedl, 2017). Studies on technostress have examined the impact of five related dimensions (technostress triggers) on job outcomes, including: 1) technical invasion, 2) technical overload, 3) technical insecurity, 4) technical complexity, and 5) technical uncertainty (Chandraet al., 2019; Srivastava et al., 2015). These studies have examined how technostress affects employee productivity (Hwang et al., 2018) and end-user satisfaction (Tarafdar et al., 2010). They have also examined the impact of social overload on individuals resulting from the use of social networking services (Alshurafat, Al Shbail, et al., 2023; Jaradat et al.,2022; Maier et al., 2015; Mansour, Alzyoud, et al.,2023; Sbaih et al., 2022) and the impact of technology characteristics, technology dependence, and cognitive elements (such as self-efficacy) on workers experiencing technostress (Ayyagari et al., 2011; Lee et al., 2014). Hwang and Cha (2018) examined the impact of technostress on organizational commitment. Accordingly, the question arises: what effect does technostress have on the intention to use blockchain technology and the audit quality of audit firms?

Theoretical foundations

Technostress and audit quality

Technostress can directly negatively affect audit quality. Auditors in audit firms may be subject to information stress and technological anxiety due to their continuous exposure to advanced technologies such as audit software and blockchain systems, which reduces their ability to accurately analyze financial data and provide accurate reports. In other words, various dimensions of technostress, including technological anxiety, technological uncertainty, and information stress, can reduce accuracy, increase the likelihood of error, and slow down auditors' decision-making speed (Hwang et al., 2018).

Technostress and Blockchain Adoption

The use of technology in supervisory and control systems, including auditing, like other systems in societies, is growing at a very fast pace. Meanwhile, auditing has been, is, and will be significantly influenced by control and information technologies in the past, present, and future. Research conducted in the past shows that today's revolution and change in technology

in the workplace is accompanied by the emergence of professional stress (Alshurafat et al., 2023). The most important of these problems and complications is mental tension and stress caused by the use of technology, which is referred to as technostress .Other similar terms include technophobia and fear of technology. More clearly, technostress is a modern problem caused by the inability to adapt to technology and is actually a combination of performance anxiety, information overload, role conflict, and organizational factors (Sumiyana et al., 2020). Technostress is the result of a new and increased fear related to equipment and can effectively increase stress in auditors. Because in addition to being unfamiliar with it, they are asked to add the use of this new technology to their daily work, which leads to the imposition of double and repetitive stress that is harmful. Technostress has five different dimensions: feeling pressured, engaging with technology, technological complexity and the need to acquire a lot of information, feeling insecure in using technology, and uncertainty in using technology due to constant changes (smith, 2020).

Hartin et al. (2024) in the study "Factors Affecting the Use of Blockchain Technology in Supply Chain Management" using expert interviews and grounded theory analysis found that factors such as trust, efficiency, cost, control, privacy, and scalability affect the potential of blockchain; and knowledge, collaboration, and regulations play a moderating role.

Cader et al. (2024) in the study "The Impact of Blockchain and Artificial Intelligence on Audit Quality: Evidence from Turkey" using data from 300 respondents and the PLS-SEM method concluded that the use of blockchain and artificial intelligence improves audit quality, facilitates fraud detection, and strengthens the trust of investors and regulators.

Research Methodology

This study is applicable in terms of purpose, and descriptive-correlational in terms of method. The population of the present study includes all auditors who are members of the Iranian Society of Certified Public Accountants. The sample size was determined as 436 people based on Morgan's table, considering that the statistical population is 3754 auditors who are members of the Iranian Society of Certified Public Accountants. A standard questionnaire and a five-point Likert scale were used to collect data. The findings from the Cronbach's alpha test and composite reliability to measure the reliability of the research tool are reported in Table 2. To examine the validity of the tool, content validity (expert opinion survey) was used and its validity was confirmed. Then, by distributing the questionnaire, the validity of the tool was measured with three methods: construct validity (external model), convergent validity (AVE), and divergent validity. The AVE value for all research variables must be greater than 0.5. In order to test the research hypotheses, structural equation modeling was used in the context of smart pls2 statistical software.

Research findings

The research findings showed that technostress, as a psychological and organizational factor, plays an important role in the behavior and performance of auditors in audit firms. The results indicate that the pressures arising from new technologies not only affect the intention to use blockchain technology, but also affect the quality of the audit. These findings are consistent with the theoretical foundations presented in previous studies and show that technostress as a key factor can significantly change the motivation and professional performance of auditors.

Discussion and Conclusion

The data analysis of this study showed that technostress as a psychological and organizational factor plays an important role in the behavior and performance of auditors in audit firms. The

results indicate that the pressures arising from new technologies not only affect the intention to use blockchain technology, but also affect the quality of the audit. These findings are consistent with the theoretical foundations presented in previous research and show that technostress as a key factor can significantly change the motivation and professional performance of auditors (Alshurafat et al., 2023; Sumiyana et al., 2020).

The research findings showed that technostress has a negative and significant effect on auditors' intention to use blockchain technology. In other words, the greater the level of pressure and anxiety caused by technology, the more auditors' willingness to accept and use blockchain decreases. These results are consistent with previous studies, such as Taherdoost et al. (2018); Sumiyana et al. (2020), in that it has been shown that technological anxiety and information pressure can reduce individuals' motivation to adopt new technologies.

Auditors under technostress are usually concerned about the complexity of technology and its constant changes, and this concern can cause resistance to learning new technologies. Studies by Hwang et al. (2018) show that technostress leads to a decrease in users' self-confidence and creates hesitation in using technology tools. Therefore, the findings of this study emphasize that technostress management, continuous training, and providing organizational support can reduce the negative effect of technostress on the intention to use blockchain technology and increase auditors' motivation to use new technologies.

In addition, from the perspective of technology acceptance theory (Davis, 1989), negative attitudes towards technology and its associated stress can reduce the behavioral intention to use technology. This finding is also consistent with studies by To et al. (2021), which have shown that technological stress and pressure can affect the behavior of accounting information systems users. The findings show that technostress reduces concentration, increases audit errors, and slows down data analysis speed; which is consistent with the findings of Hwang et al. (2018).