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An analysis of managers' interaction with smart technologies

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Abstract

The purpose of this study is to analyze managers' enthusiasm for interacting with smart technologies. This study is applicable in terms of its purpose, qualitative in terms of its data collection, and meta-synthesis in terms of its research implementation method. This study is based on Sandelowski and Barroso's (2007) seven-step method in meta-synthesis. This study used the meta-synthesis method to analyze managers' enthusiasm for interacting with smart technologies, which ultimately identified 25 articles. By analyzing and coding related texts, 67 open codes were first identified to identify the main applications, and these descriptive codes were placed in 25 main categories. Then, these 25 codes were presented in the form of 12 organizing themes and then 5 overarching themes in the form of a theoretical framework for the research, according to the type of analysis. The results showed that managers' interacting enthusiasm not only contributes to the personal development of managers, but can also lead to cultural and technological transformation in organizations and improve their competitiveness in the market.

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Extended Abstract

Introduction

Today, successfully coping with technology to master everyday life is an important issue. Behavior is a function of the individual and the environment. Therefore, coping with technology is a function of personal resources and system resources. The effect of personal resources on successful coping with technology is that the higher the skills and knowledge regarding interaction with specific systems, the easier it is to cope with similar new systems. Next, users' personality traits also play an important role in general interaction styles. One of the key dimensions of user personality is how people deal with new technological systems, which is considered as interacting enthusiasm with technology, meaning whether users tend to actively approach interaction with technological systems or whether they tend to avoid intensive interaction with new systems. Hence, the enthusiasm for technology interacting can be considered as a key personal resource for technology interacting and therefore quantifying the enthusiasm for technology interacting of users is important for research and development in the field of user-technology interacting (Franke et al, 2019).

By examining the definitions of smart government, fundamental differences such as attitudes towards citizen participation, location-based information collection, metadata processing, smartphones and cloud computing, etc. using e-government or mobile phones can be observed. But there is still no clear model in presenting the concepts and achieving smart government. Gil-García & Luna-Reyes (2016) also explain smart government by introducing 14 dimensions, although the dimensions introduced do not have a clear classification and the results, tools and techniques related to each dimension are not discussed. Anthopoulos & Reddick (2016) believe that smart government is still a very vague and unclear term that lacks a clear definition. Therefore, it needs a precise and scientific definition that expresses the dimensions, results, and tools that can be used in each dimension. With the increasing spread of technologies in the environment of new organizations, it is necessary to pay attention to their effects and determine their acceptability by managers based on useful theories. Many researchers believe that the process of interoperability affects the successful use of technology in an organization. For this reason, examining the factors affecting the interoperability of technologies in the organization has attracted the attention of many researchers (Drudi & Sharafpur, 2017). Given the above explanations, the researcher seeks to answer the question: what is the enthusiasm of managers to interact with smart technologies?

Theoretical Framework

Platform Government Interoperability

The Platform Government Interoperability Framework is a framework for sharing, collaborating, and integrating information and organizational processes using a set of policies, technical standards, and guidelines. This framework is a way to achieve interoperability of government sector information resources, information and communication technology, and e-business processes. This enables any organization to connect its ICT information to any other organization using a predefined framework based on an "open" (i.e. non-proprietary) international standard (Hashemi et al, 2017).

Smart Government, Justice and Trust

With the use of ICT, smart government and people can work together more effectively and governments can solve problems more effectively and create welfare and comfort. ICT can be considered as an efficient tool in enabling smart government, and governments can operate with transparency using this tool, which will increase their accountability and responsiveness and ultimately create justice, trust, efficiency and effectiveness of governments. Smart

government governance is strongly influenced by various dimensions of social justice and trust (Taghva et al, 2017).

Amafi & Mahmoudi (2024) examined the applications of smart technologies in the development of new educational methods. Research findings show that smart technologies such as artificial intelligence and machine learning can help simulate learning behavior and predict student performance. Also, these technologies have been effective in promoting distance learning, teacher-student interactions, and supporting individualized education and special needs. In addition, the use of smart technologies has helped develop interactive and simulated learning environments in various educational disciplines. However, there are challenges such as data security issues, implementation costs, and the need for teacher training to fully utilize these technologies. As a result, the effective use of these technologies requires appropriate planning, technical support, and attention to their social and ethical dimensions.

Akyuz & Balkan (2024) reviewed the literature on smart technologies in service systems. The findings show that the simultaneous use of smart technologies brings tremendous opportunities in terms of efficiency and automation, transforming and changing the operations and business processes of service companies. This study shows that although the main proven applications of smart technologies are in manufacturing, service sector applications are usually lagging behind, promising fundamental improvements in productivity, performance improvement and service quality. Smart technologies lead to improved profitability as well as competitiveness by fundamentally enhancing customer satisfaction to completely new levels and providing unique customer experiences.

Research Methodology

This research is applicable in terms of its purpose, qualitative in terms of data collection, and meta-synthesis in terms of research implementation. This research is based on Sandelowski and Barroso's (2007) seven-step method in meta-synthesis.

Research findings

This study used the meta-synthesis method to analyze managers' enthusiasm for interacting with smart technologies, which ultimately identified 25 articles. By analyzing and coding related texts to identify the main applications, 67 open codes were first identified, and these descriptive codes were placed in 25 main categories. Then, these 25 codes were presented in the form of 12 organizing themes and then 5 comprehensive themes in the form of a theoretical framework for the research, according to the type of analysis. The results showed that managers' enthusiasm for interacting not only helps managers improve individually, but can also lead to cultural and technological transformation in organizations and improve their competitiveness in the market.

Conclusion

The present study was conducted with the aim of analyzing managers' enthusiasm for interacting with smart technologies. The results of this study are consistent with the results of Amafi & Mahmoudi (2024), Akyuz & Balkan (2024), Mohammadzadeh Vanestan & Abedi (2024), Hojjati & Hojjati (2023), Zolfaghari & Heshmatnejad (2021), and Iranmanesh & Iranmanesh (2020). Mohammadzadeh Vanestan & Abedi (2024) showed that AI enablers including technology roadmap, professional expertise, and attitude, as well as AI readiness including infrastructure, technicality, and level of awareness, have an impact on the adoption of AI-integrated customer relationship management systems. According to the research results, business organizations can adopt and deploy AI-integrated customer relationship

management systems consciously and successfully, and enjoy their broad benefits, in order of importance; by strengthening the level of organizational AI readiness, i.e., organizational understanding of the technical level and complexity of systems, creating the required infrastructure, increasing awareness, and by empowering AI, i.e., creating a positive attitude towards technology, drawing a technology roadmap, and acquiring the required professional expertise.

According to the research results, the following suggestions are made:

- 1- Use of big data: Big data analysis and data-driven decision-making to improve organizational performance and predict market trends.
- 2- Artificial intelligence and machine learning: Using AI algorithms to optimize processes, increase efficiency, and improve customer experience.

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Conflicts of Interest

The authors declare that they have no financial or non-financial, personal, professional, or institutional conflicts of interest relevant to this work.

Conflicts of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data Availability Statement

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

AI Use Statement

The authors declare that no generative artificial intelligence (AI) or AI-assisted technologies were used in the preparation, writing, or editing of this manuscript.

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Ethics Approval

All procedures performed in this study were conducted in accordance with the ethical standards of the responsible institutional and national research committee.