Volume: 10 Issues: 78 Special Issue [November, 2025] pp. 156 – 162
Journal of Islamic, Social, Economics and Development (JISED)
eISSN: 0128-1755
Journal website: www.academicinspired.com/jised
DOI: 10.55573/JISED.107814

TOWARDS A CONCEPTUAL MODEL OF AI ADOPTION IN PUBLIC SECTOR ACCOUNTING

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Article history
Received date : 4-10-2025
Revised date : 5-10-2025
Accepted date : 27-10-2025
Published date : 5-11-2025

To cite this document:
Syed Khadzil, S. A. A., Abdullah, N., Jusop, M., & Endut, W. A. (2025). Towards a conceptual model of AI adoption in public sector accounting. *Journal of Islamic, Social, Economics and Development (JISED),* 10 (78), 156 – 162.

Abstract: *Malaysia is experiencing a significant technological shift, with Artificial Intelligence (AI) increasingly integrated across various sectors, including public administration, healthcare, education, finance, and transportation. Recognizing its transformative potential, the Malaysian government has prioritized raising public awareness of AI to ensure inclusive and beneficial adoption. However, the broad implementation of AI in the public sector presents challenges, particularly around issues of trust, data privacy, and the dissemination of misinformation. This conceptual paper aims to explore the key factors influencing the adoption of AI in public sector accounting. Specifically, it proposes a framework incorporating organizational culture, communication structure, competitive pressure, regulatory support, management support, perceived usefulness, and perceived ease of use as determinants of AI adoption. Additionally, the role of trust is introduced as a potential mediating variable in the relationship between perceived usefulness, perceived ease of use, and AI adoption. By developing a theoretical model grounded in existing literature and relevant adoption theories, this paper seeks to contribute to academic discourse and guide future empirical research.*

Keywords: *accounting, artificial intelligence, public sector*

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Introduction

The research offers a novel perspective on enhancing governance systems by integrating AI into Malaysian public sector accounting. As AI adoption grows, it is crucial to explore the factors that shape its impact on public service delivery. The Malaysian government is committed to implementing AI by providing training in this field. This study aims to provide new insights into this area by specifically investigating organizational culture, communication structure, competitive pressure, regulatory support, management support, perceived usefulness, perceived ease of use, and their influence on AI adoption in public sector accounting. Even though previous academic research has revealed a relationship between the organisational level (Azeem et al., 2021; Yu et al., 2023; Al Wael et al., 2024; Mancini, 2021; Chen et al., 2023) and the individual level (Nouraldeen, 2023; Damerji & Salimi, 2021), only a few studies have examined the extensions of these variables in their research models. For instance, numerous researchers have studied the effects of organizational culture (Azeem et al., 2021; Al Wael et al., 2024; Yu et al., 2023), communication structure, competitive pressure, regulatory support (Al Wael et al., 2024), management support (Chen et al., 2023), perceived usefulness, and perceived ease of use (Al Wael et al., 2024; Damerji & Salimi, 2021; Nouraldeen, 2023) on AI adoption. Nonetheless, these studies have not examined the effect of trust as a mediator variable. Thus, the present study proposes a comprehensive assessment of the consequences of trust, adopting both the Technology Acceptance Model (TAM) and the Technology, Organization, and Environment (TOE) Framework. These frameworks are widely used in technology adoption research and will be used to develop a new research model, particularly on AI adoption in public sector accounting.

Malaysia has successfully transformed digitalisation by implementing AI to deliver public services across government agencies. For example, enforcement agencies such as the Road Transport Department (RTD) and Royal Malaysia Police (RMP) are exploring integrating AI technologies to improve the detection and prevention of traffic offences and enhance security (Razali, 2024). The potential of AI to significantly improve public service delivery is a cause for optimism about the future of public sector accounting. Government agencies can improve service delivery, enhance data management, and foster transparency by prioritising AI implementation. This is expected to result in favourable outcomes, such as strengthening accountability and integrity, thereby improving regulatory frameworks and enhancing people's perception and trust in public administration and institutions. However, adopting AI will be a key challenge for users and the public, as there is a shortage of experts in AI who can evaluate outcomes (Alhosani & Alhashmi, 2024). Public organizations must promote a deeper understanding of AI, including its technical elements and broader ramifications, because the scarcity of such understanding complicates the deployment process. The adoption of AI innovation has a significant impact. It benefits people in many ways (Mansor et al., 2022) across various industries such as financial services (Riedel et al., 2022), mobile banking applications (Lee & Chen, 2022), hospitality (Chen et al., 2023), and healthcare (Swan et al., 2023).

Interest in the potential of artificial intelligence AI is evident in the private sector and growing rapidly in the public sector (Lindgren et al., 2019; Rosemann et al., 2020). The deployment of AI in public sector accounting is essential in delivering the best service to the public. This study intends to verify which independent and mediator variables influence service delivery in public sector accounting. The investigation focuses on public sector accounting. The research model proposed in this study includes seven factors that are correlated with the service delivery in public sector accounting: (i) organizational culture, (ii) communication structure, (iii) competitive pressure, (iv) regulatory support, (v) management support, (vi) perceived

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usefulness, and (vii) perceived ease of use. In addition, the trust will be introduced as the mediating variable in the relationships between the perceived usefulness and perceived ease of use and AI adoption.

The focus of the investigation is on the managerial staff, including accountants and administrative staff, in the public sector accounting, and to verify the effect of the mediating variable (trust) on the AI adoption. Public sector accounting is managed by the Accountant-General's Department of Malaysia (AGD). AGD is a key entity responsible for the establishment of the Malaysian accounting system and plays a crucial role in enhancing public accountability and transparency by developing high-quality accounting standards for use by public sector entities in Malaysia in the preparation of general-purpose financial statements. Understanding the perspectives and practices of the AGD is essential for this study as it provides insights into the current state and potential future of AI adoption in public sector accounting.

Literature Review

Existing studies have primarily concentrated on investigating factors influencing the AI adoption (Al Wael et al., 2024; Rahman et al., 2023). In the denouement of COVID-19 pandemic, a growing number of studies have begun to investigate the determinants of performance of AI adoption in health industry (Chen et al., 2023) antecedents and consequences of AI adoption and application in workplace (Yu et al., 2023) and intention to use AI in services (Flavián et al., 2022) to enhance efficiency, decision making and service delivery.

Many studies have found that factors such as management support, innovativeness, competitive pressure, regulatory support, organizational culture, perceived usefulness, and perceived ease of use positively influence the performance of AI adoption (Al Wael et al., 2024; Chen et al., 2023). These studies highlight the positive effects of AI adoption. A possible explanation is that AI technologies in the hospitality industry, such as delivery robots and contactless devices, may be adopted as a conventional solution to pandemic prevention rather than a booster of performance (Chen et al., 2023). During the pandemic, AI played a critical role in tracking infections, vaccine distribution, and resource allocation. Thus, by addressing all the factors that contribute to AI adoption, the government can harness the full potential of AI to transform public services and improve citizen outcomes. Meanwhile, some studies focus on the negative aspects of AI adoption, such as AI system quality, perceived ease of use, and awareness (Chen et al., 2023; Rahman et al., 2023). Clients may believe that using AI is just as complicated as using other internet technologies, like operating smart devices and online banking. People are accustomed to using smart devices and internet banking; thus, bank customers may feel comfortable utilizing modern technology. Therefore, the use of AI in banking services may not be significantly predicted by perceived ease of use. Notwithstanding these conclusions, AI in financial services ought to be simple to utilize and offer more advantages to customers.

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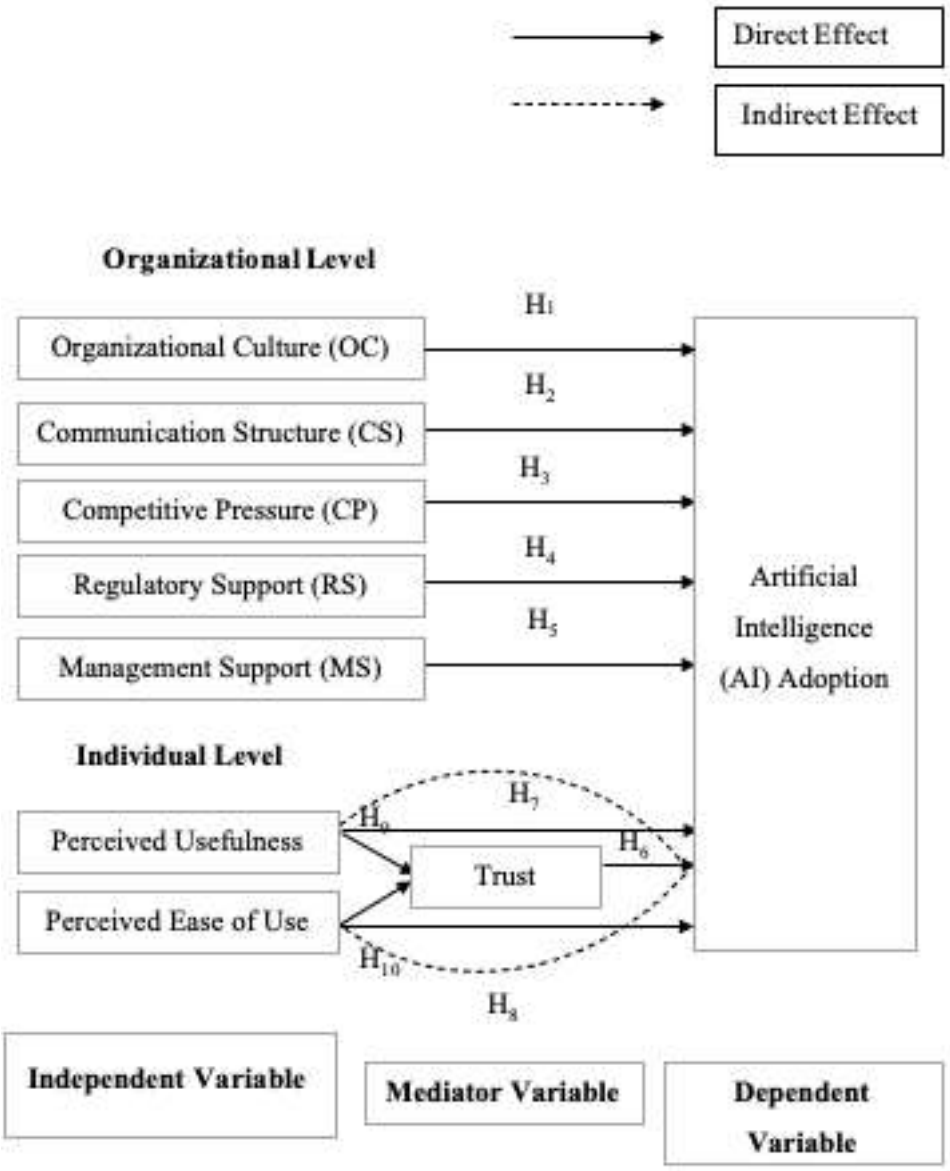

Figure 1: Conceptual model

In this study, the research framework is derived from the TAM and TOE frameworks. In contributing to the existing knowledge, the current study has included one factor to be tested, which is a mediating variable (trust that will mediate the relationship between perceived usefulness, perceived ease of use, and the adoption of AI in public sector accounting. Drawing upon the problem statement, research objective, and research questions, this study develops a research framework incorporating seven component models as independent variables or exogenous variables, and two endogenous variables as mediators and dependent variables. The model is presumed to specify the values of exogenous variables externally. So, the exogenous variables (organizational culture, communication structure, competitive pressure, regulatory support, management support, perceived usefulness, and perceived ease of use) are not justified by other constructs in the model, and there cannot be any arrow pointing at them. On the other hand, endogenous variables (trust, AI adoption) are partially explicated by the model's other

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constructs. Thus, endogenous constructs should have arrows pointing to them (Henseler et al., 2016).

The proposed research framework is supported by Al Wael et al. (2024). The theoretical framework is divided into organizational and individual levels by referring to the TAM and TOE frameworks. At the organizational level, the TOE framework consists of five constructs, while the individual level consists of two constructs related to TAM, as shown in Figure 2.1. By integrating all the variables, the framework helps explain AI adoption in public sector accounting. The determinants were referred to by Al Wael et al. (2024), Chen et al. (2023), and Yudiarti & Puspaningrum (2022), with the integration of the mediating variable (trust) to measure the perceived ease of use and AI adoption in public sector accounting.

Methodological

Based on this study's research questions and objectives, this research is exploratory research that will test the relationship between independent, mediating (trust), and dependent variables (AI adoption). A quantitative approach will be adopted because it saves cost and time, providing an opportunity to investigate a larger sample size compared to a qualitative approach (Sekaran & Bougie, 2013). The descriptive correlation study will be employed as it is the most appropriate method for this study. It is because the details of the research flow and the variables involved will be explained based on the findings of this study (Creswell & Creswell, 2017). For this study, the target population is staff employed in the Accountant-General's Department of Malaysia (AGD). According to the 2023 AGD's Annual Report, the total population of AGD's staff is 2446 (AGD Annual Report, 2024). For this study, the population consists of staff who are from the accountant scheme and the other accountant scheme in AGDA brief acknowledgment of not more than 50 words should be included at the end of the manuscripts, before the list of references. Acknowledgement could be made to funding body, institution/universities/organization or individual/person.

Conclusion

The knowledge and evidence regarding the effects of organizational culture, communication structure, competitive pressure, regulatory support, management support, perceived usefulness, perceived ease of use, and AI adoption in public sector accounting will be documented in a way not previously addressed in the existing literature. Firstly, this study extends the investigation of trust as a mediator variable. Trust will mediate the relationship between perceived usefulness, perceived ease of use, and adoption of AI in public sector accounting. Trust in AI adoption is important in the workplace. In terms of perceived usefulness, the adoption of AI will benefit users by making tasks easier (Lee & Tajudeen, 2020). Regarding perceived ease of use, despite some privacy concerns, the convenience and ease of AI allow users to apply it effectively.
Secondly, previous studies focus on factors affecting AI adoption in different industries, including financial services (Riedel et al., 2022), mobile banking applications (Lee & Chen, 2022), hospitality (Chen et al., 2023), and healthcare (Swan et al., 2023). For this study, the factors of organizational culture, communication structure, competitive pressure, regulatory support, management support, perceived usefulness, and perceived ease of use might significantly contribute to the body of literature from the perspective of the TAM and TOE framework. This study provides insight into the importance of AI, particularly in public sector accounting. The wider implementation of AI is expected to improve the efficiency and effectiveness of accounting while reducing the risk of human error and ensuring a higher standard of compliance.

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