

Adoption of Artificial Intelligence and Robotics in Organisations: A Systematic Literature Review

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Abstract: *Organisations have increasingly used artificial intelligence (AI) to innovate and compete successfully. Therefore, knowing the factors that affect the adoption of AI is crucial. This study aims to investigate the theories and models utilised in studying the adoption of AI among organisations and identify the factors influencing AI adoption among organisations across countries. Hence, a systematic literature review (SLR) and the PRISMA framework were used. This SLR contains eleven earlier studies that uncovered a growth in research focusing on AI adoption among organisations. Furthermore, this SLR discovered that the TAM, TOE, and UTAUT models are the most common ones. Three factors influencing organisations' adoption of AI across countries are perceived usefulness, perceived ease of use, and intention. In developed countries, 30 factors have been discovered as having a significant influence on AI adoption while in developing countries, 27 factors have been identified. There is a lack of prior literature using SLR to analyse the technological adoption frameworks and models for AI adoption among organisations. Studies on identifying the crucial factors influencing AI adoption among organisations are limited. Therefore, the findings of this study contribute to the current body of knowledge on AI adoption among organisations. The results of this SLR can also help managers make the right decisions and build effective strategies for adopting AI among organisations.*

Keywords: Artificial intelligence, adoption, acceptance, factors, AI, organisations, developed countries, developing countries

1. Introduction

Ever-increasing scholarly attention has been paid to the development of technological innovation among organisations over the past few decades since organisations have rapidly realised the necessity of using technology to improve their innovativeness and performance (Bai & Li, 2020). Artificial Intelligence (AI) currently holds a prominent position among the technologies and has drawn the attention of both academic and business organisations (Borges et al., 2021). Furthermore, AI is advancing rapidly and can facilitate the daily operations of organisations now (Boustani, 2022; Hmoud, 2021). Therefore, it is considered a disruptive technology (Dinh & Thai, 2018). Consequently, AI implementation entails substantial investment and risk, requiring managers to ensure the effects, outcomes, and possible changes before AI adoption (Lee et al., 2023). AI refers to machines or computerised systems with the power to learn, respond, and perform various human-like tasks (Malik et al., 2022). AI enables robots to complete essential tasks. The increasing popularity of collaborative robotics has created new opportunities for individuals to work together with robots to maximise efficiency

(Li et al., 2019). Existing AI research has mainly concentrated on information technology techniques (Basit et al., 2021), whereas management researchers are more interested in AI adoption or acceptance (Cheng et al., 2023).

1.1 Research Gap

According to Scopus database analysis, scientific research on artificial intelligence first appeared in indexed journals in 1878. There are 29,798 English final articles published in journals, which include the keywords artificial intelligence or AI within the publication titles indexed in the Scopus database from 1878 to 13 August 2023. Among them, 23,750 articles have been published since 2015, with an increased number of publications in the last five years, see Figure 1. The bibliometric network analysis results with the VOSviewer software showed that the most common keyword in the selected databases was artificial intelligence ($f = 14,283$), adoption ($f = 91$), technology adoption ($f = 99$), organisation ($f = 64$), organisation and management ($f = 41$), and systematic review ($f = 211$). Figure 2 shows the main focus of studies on AI. Two research gaps were discovered after a thorough review of the literature. Firstly, AI is spreading its roots and increasing across various industries. However, it is still in its early phases among organisations, and much more research is needed to adopt this technology. Secondly, theories and models relevant to technology users are not equally applicable in all contexts (Straub et al., 1997). Therefore, there is insufficient research on identifying the factors impacting AI adoption among organisations by categorising them as developing or developed.

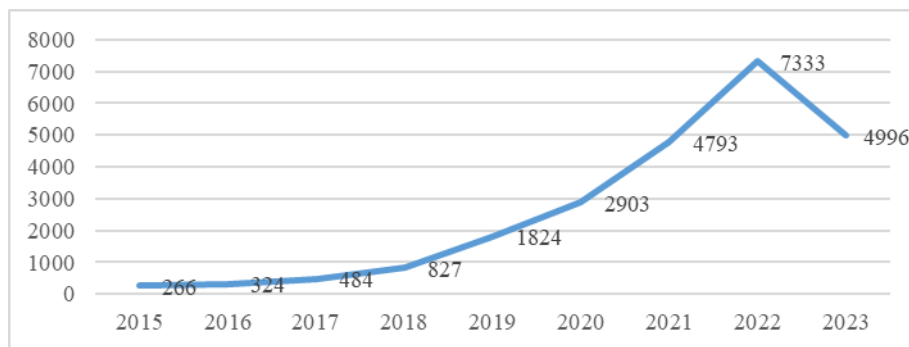


Figure 1: Number of AI articles published from 2015 to 2023

1.2 Contribution and objectives

This SLR is to provide scholars and practitioners with an up-to-date review of AI adoption among organisations. Hence, this study analyses previous studies to examine their contributions, find gaps, and give future insights. This study also explores the technological frameworks and adoption models to determine the main factors influencing AI adoption among organisations. To the best of the researcher's knowledge, the originality of this SLR is in conducting an SLR to uncover the technological adoption models employed in the field of AI in organisations. Furthermore, it is critical to identify the most essential factors with significant effects on the acceptance of AI among organisations across different countries. Earlier SLRs on AI adoption among organisations failed to address this. Accordingly, this SLR has five contributions:

- RO1.** To find out the key contributions of previous studies done in the field of AI adoption in organisations.
- RO2.** To identify the theoretical and conceptual frameworks used in the field of AI adoption in organisations.
- RO3.** To specify the key factors that affect the adoption of AI in organisations across different countries.
- RO4.** To identify the common factors among countries that affect AI adoption in organisations.

the other hand, there is a sufficient number of SLRs available in the academic literature pertaining to the use of AI among organisations. An SLR was conducted by Lee et al. (2023) about the application of AI in organisations. The intersection between AI and organisational innovation was discussed in an SLR by Mariani et al. (2023). Furthermore, the usage of AI in a strategic manner inside business organisations during the digital era was provided in an SLR by Borges et al. (2021). In addition, Kaushal et al. (2023) conducted an SLR to determine the future research agenda in integrating AI with human resource management (HRM) within organisational contexts. The intelligent human resources for AI adoption were systematically reviewed by Jatobá et al. (2023). Moreover, the definition of AI, its applications, and its adoption in HRM were elaborated in an SLR by Tuffaha and Perello-Marin (2021). Additionally, the role of AI in the tactical HRM of organisations was published in an SLR by Votto et al. (2021). The role of AI in entrepreneurial activity was also addressed in an SLR by Blanco-González-Tejero et al. (2023). Giuggioli and Pellegrini (2023) provided an SLR that addresses the role of AI as a facilitator for entrepreneurs. In addition, Chintalapati and Pandey (2022) introduced an SLR to investigate the deployment of AI in marketing. Additionally, the importance of AI in marketing was provided through an SLR by Verma et al. (2021). Similarly, Darlington and Patience (2023) examined the implementation of AI in marketing and its ability to enhance customer experience management in Nigeria. The influence of AI on workplace outcomes was also introduced in an SLR by Pereira et al. (2023). Pietronudo et al. (2022) conducted an SLR about the role of AI in decision-making in organisational management of innovation. Finally, the effect of AI on public employment and its influence on politics was explained in an SLR by Reis et al. (2021).

4. Method

In this study, SLR is employed because it is crucial to identify the primary factors that influence the adoption of AI among organisations. This SLR was created using the procedures detailed in the PRISMA Statement Flow Diagram (Moher et al., 2009). To ensure that the outcome is beneficial, this study developed the SLR process using the PRISMA framework (Moher et al., 2009) and the stages supposed by (Briner & Denyer, 2012; Denyer & Tranfield, 2009). The process is divided into five stages: formulation of questions, locating studies, the selection and evaluation of articles, analysis and synthesis, and finally, reporting and using the findings. The first step was to look for relevant articles by writing queries in databases. Scopus, which is published by Elsevier, and the Web of Science, which is released by the Thomson Reuters Institute for scientific information, were searched thoroughly for relevant articles. Falagas et al. (2008) examined the advantages and disadvantages of the Scopus, Web of Science, PubMed, and Google Scholar databases. Falagas et al. (2008) concluded that Scopus includes a wider range of academic journals than Web of Science, but that it only includes works written after 1995. Due to its specialisation in medical and life sciences (Falagas et al., 2008), PubMed was excluded from this SLR analysis. In addition, like the Web in general, Google Scholar facilitates access to highly specialised information. However, outdated and insufficient citation information hinders its efficacy (Falagas et al., 2008). Harzing and Alakangas (2016) conducted interdisciplinary and longitudinal research into the scope of cover provided by Scopus, Google Scholar, and the Web of Science. All three databases exhibited a consistent and relatively quarterly increase in the number of articles and citations. As a consequence, the researcher chose two datasets of perfect quality. The databases including "Web of Science Core Collection" and "Scopus" were searched.

Step 1: Formulation of Questions

The first stage in conducting an SLR is to formulate the research questions. The primary purpose of this study is to address the following research questions:

- RQ1.** What are the key contributions of previous studies done in the field of AI adoption in organisations?
- RQ2.** What are the different theoretical and conceptual frameworks used in the field of AI adoption in organisations?
- RQ3.** What are the factors that influence AI adoption in organisations across different countries?
- RQ4.** What are the common factors among countries that affect the AI adoption in organisations?
- RQ5.** What factors influence AI adoption in organisations across developed and developing countries?

Step 2: Locating Studies

To assure the quality and transparency of this SLR, the "Web of Science Core Collection" and "Scopus" have been used, two respected and well-known databases. In spite of its limitations, the "title search" method is useful when an SLR necessitates the rapid evaluation of a large number of references (Pittaway et al., 2004; Tian et al., 2018). The researcher conducted a search using the "Article title" search procedure on June 1, 2023. Various terms, such as machine learning, algorithms, intelligent systems, machine intelligence, and so on, are used to describe different topics of AI (Alshehhi et al., 2022). Accordingly, the groups of keywords are as follows: Group A Keywords: Artificial Intelligence, AI, Expert System, Deep Learning, Robo*, ANN, Machine Learning, Neural Networking, Cognitive Learning, Recomm* system, Unsupervised learning, Intelligent Systems, Fuzzy Logic, Supervised learning, Reinforcement learning, and Service Automation. Group B Keywords: Theories, Frameworks, adop*, Acceptance, Adoption models, Adoption frameworks, Acceptance models, Acceptance frameworks, Success factors, Challenges, Readiness, Determinants.

Step 3: Articles Selection and Evaluation

Table 1 represents the inclusion and exclusion criteria. Articles that were irrelevant to the research questions and core themes were therefore excluded using a three-step screening strategy. The procedures entailed reviewing paper titles, abstracts, and full-text articles. To support the approach represented in Figure 3, the Rayyan tool, which was created to help researchers implement the SLR technique, was employed. The accepted papers were saved in Mendeley and systematically and statistically were arranged in an Excel file.

Step 4: Analysis and Synthesis

The articles included in this study were thoroughly examined and synthesised. To categorise them, multiple criteria were used, including the type of country, the year of publication, the country where the study was done, and the statistical tool(s) used. Following the literature review, this study systematically categorised the factors that affect the adoption of AI among organisations across countries.

Step 5: Reporting and Using the Findings

This SLR investigates the available literature on the adoption of AI among organisations. The following sections answer the research questions.

Table 1: Inclusion and exclusion criteria

Inclusion Criteria	Exclusion Criteria
<p>IC1: The paper addresses the adoption of AIR by applying one or more theories of technology adoption.</p> <p>IC2: The paper should be peer-reviewed.</p> <p>IC3: The paper should be in English.</p> <p>IC4: The paper should be with a digital object identifier (DOI).</p>	<p>EC1: The paper does not identify the sector in which it addresses AI adoption.</p> <p>EC2: The paper is not available in full text.</p> <p>EC3: It is a conference paper/book chapter/review/book/note/conference review/ Editorial.</p>

5. Results

This section provides comprehensive responses to all of the research questions discussed in this SLR. The inclusion and exclusion criteria were met by a total of eleven publications. Table 2 provides a comprehensive overview of the existing body of literature by listing the articles included in the SLR.

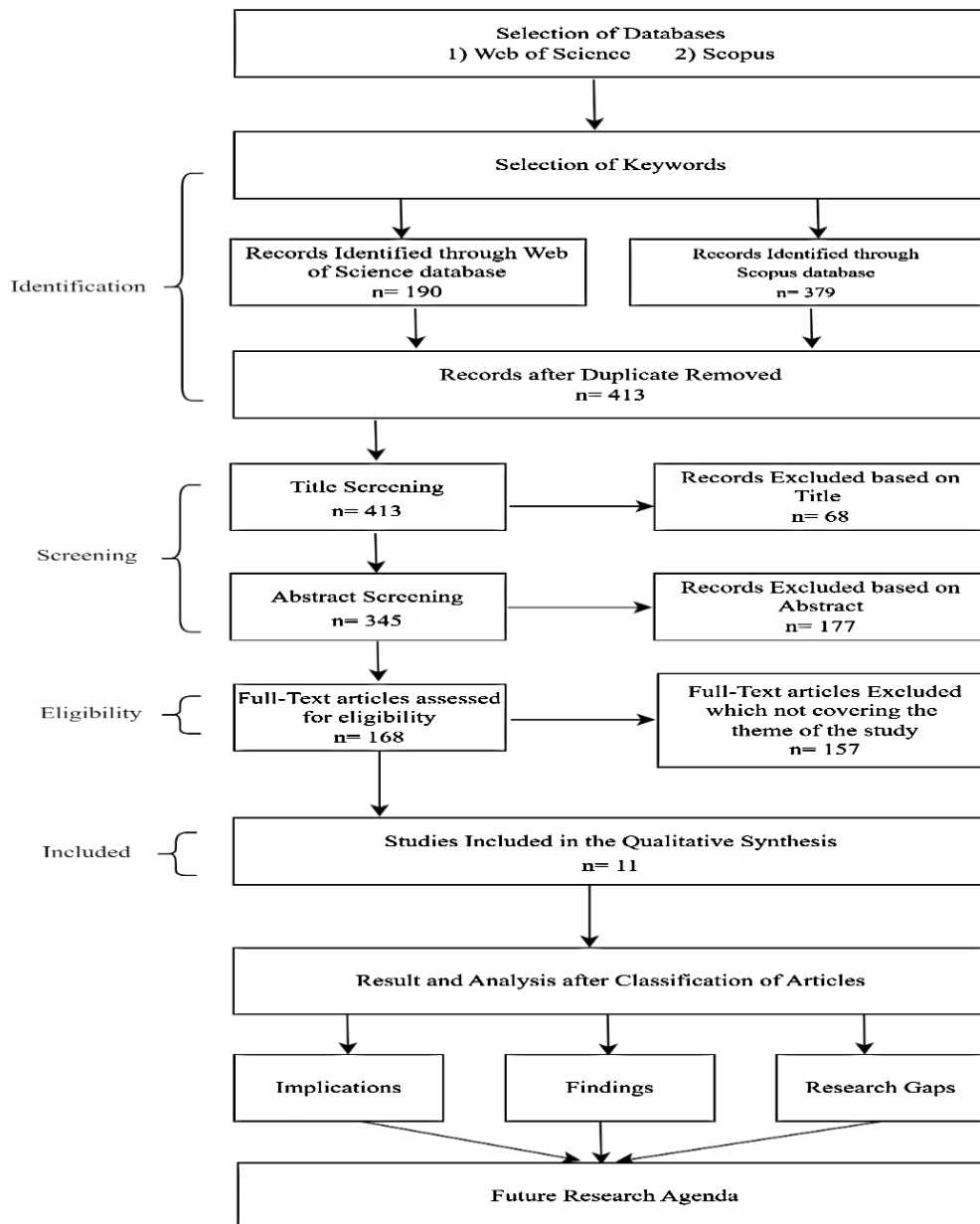


Figure 3: PRISMA flowchart of the study

Table 2: Summary of Previous Studies of EHR Technology

Authors	Objectives	Theory	Statistical Technique	Factors
1. Chatterjee et al. (2020)	To examine the behavioural intention of workers in Indian firms regarding the adoption of a CRM system that incorporates AI technology	TAM and Motivational Theory	SmartPLS	<ol style="list-style-type: none"> 1. Perceived Usefulness 2. Perceived Ease of Use 3. Utilitarian Attitude 4. Hedonic Attitude 5. Moderator: Leadership Support 6. Behavioural Intention
2. Chatterjee et al. (2021)	To identify the various factors that exert influence on the adoption of an AI-integrated CRM system by agile organisations	TAM	SmartPLS	<ol style="list-style-type: none"> 1. Perceived Usefulness 2. Perceived Ease of Use 3. Trust 4. Attitude 5. Behavioural Intention 6. Adoption
3. Islam et al. (2022)	To identify the principal factors affecting the adoption of AI-based technology in the context of recruitment	UTAUT	SmartPLS	<ol style="list-style-type: none"> 1. Performance Expectancy 2. Effort Expectancy 3. Social Influence 4. Facilitating Conditions 5. Perceived Credibility 6. Behavioural Intention 7. Moderator: Firm Size 8. Moderator: Gender 9. Actual Behaviour
4. Ghani et al. (2022)	To examine the factors influencing the adoption of AI in manufacturing companies	TOE	SPSS	<ol style="list-style-type: none"> 1. IT Capability 2. Top Management Support 3. Government Support 4. Adoption
5. Pan et al. (2022)	To enhance understanding of the factors that exert effect on and hinder the adoption of AI in the process of recruiting employees	TOE and Cost Theory	N/A	<ol style="list-style-type: none"> 1. Relative Advantage 2. Complexity 3. Company Size 4. Technology Competence 5. Industry 6. Regulatory 7. Moderator: Asset Specificity 8. Moderator: Uncertainty 9. Actual Behaviour
6. Phuoc (2022)	To examine the extent to which AI applications have been used at the organisational level in Vietnam	TOE	AMOS	<ol style="list-style-type: none"> 1. Technical Compatibility 2. Relative Advantage 3. Technical Complexity 4. Managerial Support 5. Managerial Capabilities 6. Organisational Size 7. Organizational Readiness 8. Government Involvement 9. Market Uncertainty 10. Competitive Pressure 11. Vendor Partnership 12. Adoption
7. Razak and Ismail (2022)	To examine the factors that impact the adoption of Robotic Process Automation by accounting employees	TAM, DOI, TOE and Hofstede cultural model	SmartPLS	<ol style="list-style-type: none"> 1. Uncertainty Avoidance 2. Masculinity 3. Confucian Dynamism 4. Compatibility 5. Trialability 6. Relative Advantage 7. Complexity 8. Organisational Competence 9. Top Management Support 10. Training and Education

				11. Perceived Usefulness 12. Trading Partners Support 13. Competitive Pressure 14. Behavioural Intention
8. Sethibe and Naidoo (2022)	To determine what factors are impacting firms' adoption of robotic technology for auditing purposes	UTAUT	SPSS	1. Performance Expectancy 2. Effort Expectancy 3. Social Influence 4. Facilitating Conditions 5. Moderator: Age 6. Moderator: Gender 7. Moderator: Experience 8. Behavioural Intention
9. Upadhyay et al. (2022)	To identify the willingness of entrepreneurs towards adopting AI within the context of digital entrepreneurship	TAM, UTAUT, TPB, Motivational Model (MM)	SmartPLS	1. Performance Expectancy 2. Effort Expectancy 3. Social Influence 4. Hedonic Motivation 5. Inconvenience 6. Uncertainty 7. Openness 8. Affordance 9. Attitude 10. Generativity 11. Behavioural Intention
10. Vărzaru (2022)	To assess the level of acceptance of AI technology within the accounting profession in Romanian firms	TAM	SmartPLS	1. Perceived Ease of Use 2. Perceived Usefulness 3. Users' Satisfaction 4. Behavioural Intention 5. Actual Behaviour
11. Wanner et al. (2022)	To understand the level of acceptability of intelligent systems among end users	UTAUT, Explanation Theory and User Trust Theory	SmartPLS	1. Performance Expectancy 2. Effort Expectancy 3. Attitude 4. Trust Propensity 5. Ability Beliefs 6. System Transparency 7. Moderator: Gender 8. Moderator: Age 9. Moderator: Experience 10. Behavioural Intention

5.1 What are the key contributions of previous studies done in the field of AI adoption among organisations?

Firstly, the researcher provided an overview of the number of publications that have been published in both developing and developed countries. The findings are clearly illustrated in Figure 4. This SLR included five studies conducted in developed countries and six studies undertaken in developing countries. Therefore, the researcher can conclude that there is no difference between developed and developing countries in the adoption of AI among organisations.

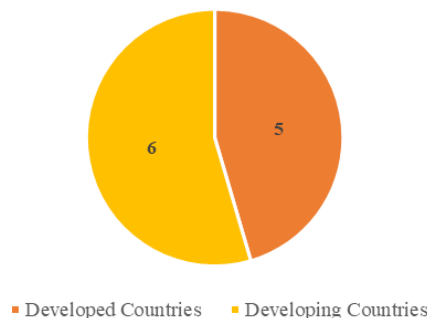


Figure 4: The distribution of articles by developed and developing countries

Secondly, Figure 5 depicts the distribution of publications over time. In 2020 and 2021, the research criteria were met by just one article. In addition, nine articles were deemed to meet the criteria in 2022, but none in 2023 indicating a notable propensity for organisations to adopt AI.

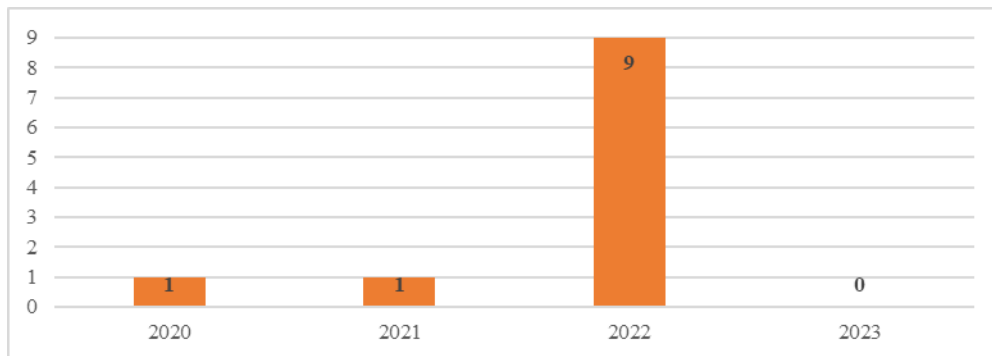


Figure 5: The distribution of articles by year

Thirdly, Figure 6 illustrates the distribution of papers throughout different countries. Malaysia and India contributed two articles on the adoption of AI among organisations, whereas the other countries each contributed one.

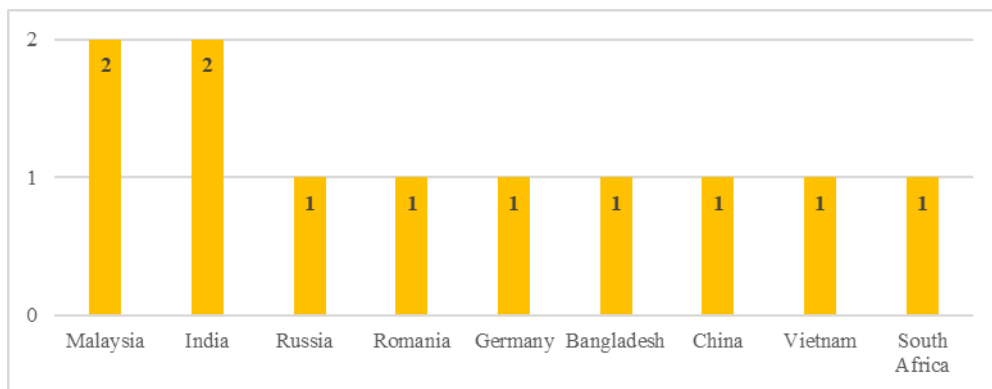


Figure 6: Distribution of articles by country

Figure 7 depicts the statistical methods used to validate the conceptual framework of this SLR's research. Methods such as Structural Equation Modelling (PLS-SEM) and Statistical Package for the Social Sciences (SPSS) have been used in previous studies. According to Figure 7, seven studies used the PLS-SEM method, while two articles used SPSS, one article employed AMOS-SEM, and finally, no tool was identified in one article.



Figure 7: Statistical technique applied in prior studies

According to Table 3, behavioural intention in 8 articles, performance expectancy or perceived usefulness in 8 articles, and effort expectancy or perceived ease of use in 7 articles were found to affect AI adoption among organisations. In addition, actual behavior was observed in six articles indicating the importance of these factors in AI adoption.

Table 3: Factors presentation with number of studies quoting these factors (n=45)

Factor	No. of articles	Factor	No. of articles
1. Behavioural Intention	8	24. Hedonic Motivation	1
2. Perceived Usefulness/Performance Expectancy	8	25. Inconvenience	1
3. Perceived Ease of Use/Effort Expectancy	7	26. Industry	1
4. Actual Behaviour	6	27. IT Capability	1
5. Attitude	3	28. Leadership Support	1
6. Company Size	3	29. Managerial Capabilities	1
7. Relative Advantage	3	30. Managerial Support	1
8. Social Influence	3	31. Market Uncertainty	1
9. Competence	2	32. Masculinity	1
10. Competitive Pressure	2	33. Openness	1
11. Complexity	2	34. Organizational Readiness	1
12. Facilitating Conditions	2	35. Perceived Credibility	1
13. Top Management Support	2	36. Regulatory	1
14. Trust	2	37. System Transparency	1
15. Uncertainty	2	38. Technical Compatibility	1
16. Ability Beliefs	1	39. Technical Complexity	1
17. Affordance	1	40. Trading Partners Support	1
18. Asset Specificity	1	41. Training and Education	1
19. Compatibility	1	42. Trialability	1
20. Confucian Dynamism	1	43. Uncertainty Avoidance	1
21. Generativity	1	44. Users' Satisfaction	1
22. Government Involvement	1	45. Utilitarian Attitude	1
23. Government Support	1		

5.2 What are the different theoretical and conceptual frameworks used in the field of AI adoption among organisations?

Several studies have employed a variety of theoretical frameworks to explain the adoption of AI among organisations. Figure 8 depicts the models and frameworks applied in prior studies. According to the statistics, the TAM, TOE, and UTAUT models have been used in two publications. In addition, several studies combined adoption models with other theories and frameworks.

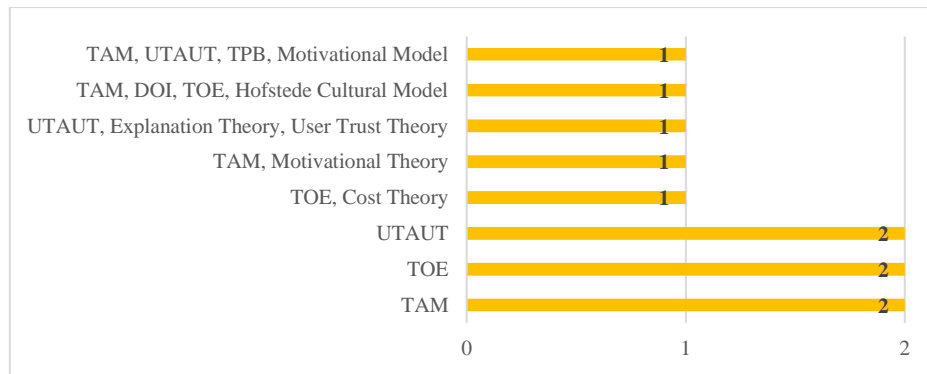


Figure 8: Theories applied in prior studies

5.3 What are the factors that influence AI adoption among organisations across different countries?

The SLR comprehensively reviews factors influencing AI among organisations across different countries. Key factors include perceived usefulness or performance expectancy, perceived ease of use or effort expectancy, and behavioural intention observed in most countries such as the Netherlands, Romania, Germany, India, Bangladesh, and South Africa. In addition, relative advantage appeared in countries such as Malaysia, China, and Vietnam. Lastly, countries like Bangladesh and Vietnam highlight the influence of firm/organisational size as a factor for AI adoption among organisations. The common factors among countries are presented in Table 4.

Table 4: Factors influencing AI adoption in organisations across countries

Country	Factors
Malaysia	1. IT Capability, 2. Top Management Support, 3. Government Support, 4. Uncertainty Avoidance, 5. Masculinity, 6. Confucian Dynamism, 7. Compatibility, 8. Trialability, 9. Relative Advantage, 10. Complexity, 11. Organisational Competence, 12. Training and Education, 13. Perceived Usefulness, 14. Trading Partners Support, 15. Competitive Pressure, 16. Behavioural Intention, 17. Actual Behaviour.
Netherlands	1. Performance Expectancy, 2. Effort Expectancy, 3. Social Influence, 4. Hedonic Motivation, 5. Inconvenience, 6. Uncertainty, 7. Openness, 8. Affordance, 9. Attitude, 10. Generativity, 11. Behavioural Intention.
Romania	1. Perceived Ease of Use, 2. Perceived Usefulness, 3. Users' Satisfaction, 4. Behavioural Intention, 5. Actual Behaviour.
Germany	1. Performance Expectancy, 2. Effort Expectancy, 3. Attitude, 4. Trust Propensity, 5. Ability Beliefs, 6. System Transparency, 7. Behavioural Intention.
India	1. Perceived Usefulness, 2. Perceived Ease of Use, 3. Utilitarian Attitude, 4. Hedonic Attitude, 5. Leadership Support, 6. Behavioural Intention, 7. Trust, 8. Attitude, 9. Actual Behaviour.
Bangladesh	1. Performance Expectancy, 2. Effort Expectancy, 3. Social Influence, 4. Facilitating Conditions, 5. Perceived Credibility, 6. Behavioural Intention, 7. Firm Size, 8. Actual Behaviour.
China	1. Relative Advantage, 2. Complexity, 3. Company Size, 4. Competence, 5. Industry, 6. Regulatory, 7. Asset Specificity, 8. Uncertainty, 9. Actual Behaviour.
Vietnam	1. Technical Compatibility, 2. Relative Advantage, 3. Technical Complexity, 4. Managerial Support, 5. Managerial Capabilities, 6. Organisational Size, 7. Organizational Readiness, 8. Government Involvement, 9. Market Uncertainty, 10. Competitive Pressure, 11. Vendor Partnership, 12. Actual Behaviour.
South Africa	1. Performance Expectancy, 2. Effort Expectancy, 3. Social Influence, 4. Facilitating Conditions, 5. Behavioural Intention.

5.4 What are the common factors among countries that affect the AI adoption among organisations?

Upon the analysis of the data, Table 5 represents the common factors of AI adoption among organisations across countries. It is evident that several factors commonly influence AI adoption across a range of countries. The most prevalent factors include perceived usefulness/performance expectancy and behavioural intention, which resonate with seven countries, highlighting the importance of the usefulness of the technology and individuals' intentions in facilitating the adoption of AI among organisations. In addition, perceived ease of use/effort expectancy which resonates with six countries, reflects the crucial role of users' expectations about the degree of system effortlessness. Social influence also emerged as a notable factor across three countries, reflecting the crucial role of social factors toward technological adoption among organisations.

Table 5: Common factors influencing AI adoption in organisations across countries

Factor	Countries
Performance Expectancy/ Perceived Usefulness	Malaysia, Netherlands, Romania, Germany, India, Bangladesh, South Africa.
Behavioural Intention	Malaysia, Netherlands, Romania, Germany, India, Bangladesh, South Africa.
Effort Expectancy/ Perceived Ease of Use	Netherlands, Romania, Germany, India, Bangladesh, South Africa.
Actual Behaviour	Malaysia, Romania, India, Bangladesh, China, Vietnam.
Social Influence	Netherlands, Bangladesh, South Africa.
Relative Advantage	Malaysia, China, Vietnam.
Attitude	Netherlands, India.

5.5 What factors influence AI adoption among organisations across developed and developing countries?

Table 6 represents the analysis of factors influencing AI adoption among organisations across developed and developing countries. In developed countries, 30 factors have been identified as influencers of AI adoption among organisations while 27 factors were identified as influencers of AI adoption in developing countries. Inconvenience, uncertainty, and government support are examples of several factors identified in developed countries. Trust, perceived credibility, and relative advantage were identified along with many factors in developed countries.

Table 6: Factors influencing AI adoption in organisations across developed and developing countries

Country	Factors
Developed countries	1. IT Capability, 2. Top Management Support, 3. Government Support, 4. Uncertainty Avoidance, 5. Masculinity, 6. Confucian Dynamism, 7. Compatibility, 8. Trialability, 9. Relative Advantage, 10. Complexity, 11. Organisational Competence, 12. Training and Education, 13. Perceived Usefulness/Performance Expectancy, 14. Trading Partners Support, 15. Competitive Pressure, 16. Behavioural Intention, 17. Actual Behaviour, 18. Social Influence, 19. Hedonic Motivation, 20. Inconvenience, 21. Uncertainty, 22. Openness, 23. Affordance, 24. Attitude, 25. Generativity, 26. Perceived Ease of Use/Effort Expectancy, 27. Users' Satisfaction, 28. Trust Propensity, 29. Ability Beliefs, 30. System Transparency.
Developing countries	1. Perceived Usefulness/Performance Expectancy, 2. Perceived Ease of Use/Effort Expectancy, 3. Utilitarian Attitude, 4. Hedonic Attitude, 5. Leadership Support, 6. Behavioural Intention, 7. Trust, 8. Attitude, 9. Actual Behaviour, 10. Social Influence, 11. Facilitating Conditions, 12. Perceived Credibility, 13. Firm Size, 14. Relative Advantage, 15. Complexity, 16. Competence, 17. Industry, 18. Regulatory, 19. Asset Specificity, 20. Uncertainty, 21. Technical Compatibility, 22. Managerial Support, 23. Managerial Capabilities, 24. Organizational Readiness, 25. Government Involvement, 26. Competitive Pressure, 27. Vendor Partnership.

6. Discussion

The aim of this research was to conduct an SLR in order to identify articles that discussed technological models/theories in the context of AI adoption among organisations and to determine the crucial factors influencing AI adoption among countries. This study adds to prior knowledge about AI adoption among organisations in several ways. First, the current study adds to the existing body of knowledge by recognising contributions in prior studies and highlighting areas that need greater exploration for future research. The acceptance of AI in the field of organisations is critical, prompting greater research on the adoption of this technology in the context of organisations. Second, this study examined the key factors that influence AI adoption in organisations across countries. These factors may support studies targeted at a better understanding of AI adoption among organisations. The identification of different factors can greatly help decision-making processes aimed at increasing AI usage in organisations. Third, in contrast to previous studies, this SLR performed a comparative analysis of countries in terms of AI adoption among organisations.

The current study conducted a systematic review and rigorous analysis of the published literature on the adoption of AI in the field of organisations, revealing a number of significant research gaps. First, managers and academics strive to recognise the shortage of evidence regarding the factors that influence user acceptance of AI adoption among organisations. Consequently, future studies will need to provide additional consideration to the adoption of AI in the organisational context. Second, no prior research has been conducted on the adoption of AI in Arab organisations. In upcoming studies, it is necessary to investigate the adoption of AI among organisations in Arab countries. Finally, it is important to note that no previous study has validated data using the SEM-ANN technique. Recent studies (Al-Sharafi et al., 2022; Elareshi et al., 2022; Parhi et al., 2022) have incorporated the SEM-ANN technique as a methodological improvement. This type of hybrid approach facilitates decision-making (Ooi et al., 2018; Wan et al., 2022), validates SEM findings (Rehman et al., 2022), and provides a more thorough understanding of the problem of research (Scott & Walczak, 2009). In addition, when SEM-ANN is applied, the disadvantages of each approach are offset by the advantages of the other (Scott & Walczak, 2009). Consequently, future research on AI adoption is required to use dual-stage SEM-ANN analysis.

There are several opportunities for researchers and decision-makers to investigate this topic further. To provide an accurate overview for future research, it is essential to recognise the limitations of this study. This research possesses two limitations. For this SLR, the researcher used popular databases including Scopus and Web of Science. Future research could use databases such as EBSCO host, IEEE Explore, and Science Direct to discover and gather new articles. Second, this study employed the search strategy named Article title. However, it is suggested that future research contemplate using the article title, abstract, and keywords strategy for search.

7. Conclusion

This study is significant due to its novel methodology for investigating the adoption of AI among organisations, with a particular emphasis on technology adoption models and frameworks. This aspect of previous research in this field has not been thoroughly addressed. This SLR was executed using the PRISMA method (Moher et al., 2009). Two databases, Web of Science and Scopus, were utilised to conduct this SLR. The researcher comprehended the body of literature after reviewing 11 selected studies, disclosing that there are few studies on

the adoption of AI among organisations and that additional research is required. This study identified 45 factors that influence organisations adoption of AI. In Malaysia, 17 factors were identified as influencing AI adoption among organisations, while in the Netherlands, 11 factors were identified. Furthermore, the most critical factors for AI adoption across countries include perceived ease of use, perceived usefulness, and behavioural intention. In addition, 30 factors influencing AI adoption among organisations were identified in developed countries, while 27 were identified in developing countries.

References

- Ajzen, I. (1991). The Theory of Planned Behavior Organizational Behavior and Human Decision Processes. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211.
- Ala'a, A. M., & Ramayah, T. (2023a). Predicting the Behavioural Intention of Jordanian Healthcare Professionals to Use Blockchain-Based EHR Systems: An Empirical Study. *Journal of System and Management Sciences*, 13(4), 107–139. <https://doi.org/10.33168/JSMS.2023.0407>.
- Ala'a, A. M., & Ramayah, T. (2023b). A Review of the Technology Acceptance Model in Electronic Health Records. *International Journal of Business and Technology Management*, 5(2), 8–19. <https://doi.org/10.55057/ijbtm.2023.5.2.2>.
- Al-Sharafi, M. A., Al-Emran, M., Iranmanesh, M., Al-Qaysi, N., Iahad, N. A., & Arpaci, I. (2022). Understanding the impact of knowledge management factors on the sustainable use of AI-based chatbots for educational purposes using a hybrid SEM-ANN approach. *Interactive Learning Environments*, 0(0), 1–20. <https://doi.org/10.1080/10494820.2022.2075014>.
- Alshehhi, K., Cheaitou, A., & Rashid, H. (2022). Adoption Frameworks for Artificial Intelligence in the Public Sector: A Systematic Review of Literature. *Proceedings of the 3rd South American International Industrial Engineering and Operations Management*, 919–929.
- Bai, X. J., & Li, J. J. (2020). The best configuration of collaborative knowledge innovation management from the perspective of artificial intelligence. *Knowledge Management Research and Practice*, 00(00), 1–13. <https://doi.org/10.1080/14778238.2020.1834886>.
- Basit, A., Zafar, M., Liu, X., Javed, A. R., Jalil, Z., & Kifayat, K. (2021). A comprehensive survey of AI-enabled phishing attacks detection techniques. *Telecommunication Systems*, 76(1), 139–154. <https://doi.org/10.1007/s11235-020-00733-2>.
- Blanco-González-Tejero, C., Ribeiro-Navarrete, B., Cano-Marin, E., & McDowell, W. C. (2023). A systematic literature review on the role of artificial intelligence in entrepreneurial activity. *International Journal on Semantic Web and Information Systems (IJSWIS)*, 19(1), 1–16.
- Borges, A. F. S., Laurindo, F. J. B., Spínola, M. M., Gonçalves, R. F., & Mattos, C. A. (2021). The strategic use of artificial intelligence in the digital era: Systematic literature review and future research directions. *International Journal of Information Management*, 57, 102225. <https://doi.org/10.1016/j.ijinfomgt.2020.102225>.
- Boustani, N. M. (2022). Artificial intelligence impact on banks clients and employees in an Asian developing country. *Journal of Asia Business Studies*, 16(2), 267–278. <https://doi.org/10.1108/JABS-09-2020-0376>.
- Briner, R. B., & Denyer, D. (2012). *Systematic review and evidence synthesis as a practice and scholarship tool*.
- Chatterjee, S., Chaudhuri, R., Vrontis, D., Thrassou, A., & Ghosh, S. K. (2021). Adoption of

- artificial intelligence-integrated CRM systems in agile organizations in India. *Technological Forecasting and Social Change*, 168(March), 120783. <https://doi.org/10.1016/j.techfore.2021.120783>.
- Chatterjee, S., Nguyen, B., Ghosh, S. K., Bhattacharjee, K. K., & Chaudhuri, S. (2020). Adoption of artificial intelligence integrated CRM system: an empirical study of Indian organizations. *The Bottom Line*, 33(4), 359–375. <https://doi.org/10.1108/BL-08-2020-0057>.
- Cheng, B., Lin, H., & Kong, Y. (2023). Challenge or hindrance? How and when organizational artificial intelligence adoption influences employee job crafting. *Journal of Business Research*, 164(April 2022), 113987. <https://doi.org/10.1016/j.jbusres.2023.113987>.
- Chintalapati, S., & Pandey, S. K. (2022). Artificial intelligence in marketing: A systematic literature review. *International Journal of Market Research*, 64(1), 38–68. <https://doi.org/10.1177/14707853211018428>.
- Darlington, N., & Patience, A. M. (2023). Artificial Intelligence Marketing Practices : The Way Forward to Better Customer Experience Management in Africa (Systematic Literature Review). *International Academy Journal of Management, Marketing and Entrepreneurial Studies*, 9(2), 44–62.
- Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, 13(3), 319. <https://doi.org/10.2307/249008>.
- Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User Acceptance of Computer Technology: A Comparison of Two Theoretical Models. *Management Science*, 35(8), 982–1003. <https://doi.org/10.1287/mnsc.35.8.982>.
- Denyer, D., & Tranfield, D. (2009). *Producing a systematic review*.
- Dinh, T. N., & Thai, M. T. (2018). AI and Blockchain: A Disruptive Integration. *Computer*, 51(9), 48–53. <https://doi.org/10.1109/MC.2018.3620971>.
- Duan, Y., Edwards, J. S., & Dwivedi, Y. K. (2019). Artificial intelligence for decision making in the era of Big Data – evolution, challenges and research agenda. *International Journal of Information Management*, 48(January), 63–71. <https://doi.org/10.1016/j.ijinfomgt.2019.01.021>.
- Elareshi, M., Habes, M., Youssef, E., Salloum, S. A., Alfaisal, R., & Ziani, A. (2022). SEM-ANN-based approach to understanding students’ academic-performance adoption of YouTube for learning during Covid. *Heliyon*, 8(4), e09236. <https://doi.org/10.1016/j.heliyon.2022.e09236>.
- Falagas, M. E., Pitsouni, E. I., Malietzis, G. A., & Pappas, G. (2008). Comparison of PubMed, Scopus, Web of Science, and Google Scholar: strengths and weaknesses. *The FASEB Journal*, 22(2), 338–342. <https://doi.org/10.1096/fj.07-9492LSF>.
- Fishbein, M., & Ajzen, I. (1975). Belief, attitude, intention and behavior: An introduction to theory and research. *Contemporary Sociology*, 6(2), 244–245.
- Ghani, E. K., Ariffin, N., & Sukmadilaga, C. (2022). Factors Influencing Artificial Intelligence Adoption in Publicly Listed Manufacturing Companies: A Technology, Organisation, and Environment Approach. *International Journal of Applied Economics, Finance and Accounting*, 14(2), 108–117. <https://doi.org/10.33094/ijaefa.v14i2.667>.
- Giuggioli, G., & Pellegrini, M. M. (2023). Artificial intelligence as an enabler for entrepreneurs: a systematic literature review and an agenda for future research. *International Journal of Entrepreneurial Behaviour and Research*, 29(4), 816–837. <https://doi.org/10.1108/IJEER-05-2021-0426>.
- Harzing, A. W., & Alakangas, S. (2016). Google Scholar, Scopus and the Web of Science: a longitudinal and cross-disciplinary comparison. *Scientometrics*, 106(2), 787–804. <https://doi.org/10.1007/s11192-015-1798-9>.
- Hmoud, B. (2021). The adoption of artificial intelligence in human resource management.

- Forum Scientiae Oeconomia*, 9(1), 5–18. https://doi.org/10.23762/fso_Vol9_no1_7.
- Islam, M., Mamun, A. Al, Afrin, S., Ali Quaosar, G. M. A., & Uddin, M. A. (2022). Technology Adoption and Human Resource Management Practices: The Use of Artificial Intelligence for Recruitment in Bangladesh. *South Asian Journal of Human Resources Management*, 9(2), 324–349. <https://doi.org/10.1177/23220937221122329>.
- Jatobá, M. N., Ferreira, J. J., Fernandes, P. O., & Teixeira, J. P. (2023). Intelligent human resources for the adoption of artificial intelligence: a systematic literature review. *Journal of Organizational Change Management*. <https://doi.org/10.1108/JOCM-03-2022-0075>.
- Kaushal, N., Kaurav, R. P. S., Sivathanu, B., & Kaushik, N. (2023). Artificial intelligence and HRM: identifying future research Agenda using systematic literature review and bibliometric analysis. *Management Review Quarterly*, 73(2), 455–493.
- Lee, M. C. M., Scheepers, H., Lui, A. K. H., & Ngai, E. W. T. (2023). The implementation of artificial intelligence in organizations: A systematic literature review. *Information and Management*, 60(5), 103816. <https://doi.org/10.1016/j.im.2023.103816>.
- Li, J. J., Bonn, M. A., & Ye, B. H. (2019). Hotel employee’s artificial intelligence and robotics awareness and its impact on turnover intention: The moderating roles of perceived organizational support and competitive psychological climate. *Tourism Management*, 73(April 2018), 172–181. <https://doi.org/10.1016/j.tourman.2019.02.006>.
- Malik, A., Budhwar, P., Patel, C., & Srikanth, N. R. (2022). May the bots be with you! Delivering HR cost-effectiveness and individualised employee experiences in an MNE. *International Journal of Human Resource Management*, 33(6), 1148–1178. <https://doi.org/10.1080/09585192.2020.1859582>.
- Mariani, M. M., Machado, I., Magrelli, V., & Dwivedi, Y. K. (2023). Artificial intelligence in innovation research: A systematic review, conceptual framework, and future research directions. *Technovation*, 122(May 2022), 102623. <https://doi.org/10.1016/j.technovation.2022.102623>.
- Moher, D., Liberati, A., Tetzlaff, J., & Altman, D. G. (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. *PLoS Medicine*, 6(7), e1000097. <https://doi.org/10.1371/journal.pmed.1000097>.
- Ooi, K. B., Hew, J. J., & Lin, B. (2018). Unfolding the privacy paradox among mobile social commerce users: a multi-mediation approach. *Behaviour and Information Technology*, 37(6), 575–595. <https://doi.org/10.1080/0144929X.2018.1465997>.
- Pan, Y., Froese, F., Liu, N., Hu, Y., & Ye, M. (2022). The adoption of artificial intelligence in employee recruitment: The influence of contextual factors. *The International Journal of Human Resource Management*, 33(6), 1125–1147. <https://doi.org/10.1080/09585192.2021.1879206>.
- Parhi, S., Joshi, K., Wuest, T., & Akarte, M. (2022). Factors affecting Industry 4.0 adoption – A hybrid SEM-ANN approach. *Computers and Industrial Engineering*, 168(March 2021). <https://doi.org/10.1016/j.cie.2022.108062>.
- Pereira, V., Hadjielias, E., Christofi, M., & Vrontis, D. (2023). A systematic literature review on the impact of artificial intelligence on workplace outcomes: A multi-process perspective. *Human Resource Management Review*, 33(1), 100857. <https://doi.org/10.1016/j.hrmr.2021.100857>.
- Phuoc, N. Van. (2022). The Critical Factors Impacting Artificial Intelligence Applications Adoption in Vietnam: A Structural Equation Modeling Analysis. *Economies*, 10(6), 129. <https://doi.org/10.3390/economies10060129>.
- Pietronudo, M. C., Croidieu, G., & Schiavone, F. (2022). A solution looking for problems? A systematic literature review of the rationalizing influence of artificial intelligence on

- decision-making in innovation management. *Technological Forecasting and Social Change*, 182(April 2021). <https://doi.org/10.1016/j.techfore.2022.121828>.
- Pittaway, L., Robertson, M., Munir, K., Denyer, D., & Neely, A. (2004). Networking and innovation: a systematic review of the evidence. *International Journal of Management Reviews*, 5–6(3–4), 137–168. <https://doi.org/10.1111/j.1460-8545.2004.00101.x>.
- Razak, N. A., & Ismail, K. (2022). Factors Influencing The Adoption Of Robotic Process Automation Among Accounting Personnel In Malaysia. *Management and Accounting Review*, 21(3), 181–207. <https://doi.org/10.24191/MAR.V21i03-08>.
- Rehman, I. H., Ahmad, A., Akhter, F., & Aljarallah, A. (2022). A Dual-Stage SEM-ANN Analysis to Explore Consumer Adoption of Smart Wearable Healthcare Devices. *Journal of Global Information Management*, 29(6), 1–30. <https://doi.org/10.4018/JGIM.294123>.
- Reis, J., Espírito Santo, P., & Melão, N. (2021). Influence of artificial intelligence on public employment and its impact on politics: A systematic literature review1. *Brazilian Journal of Operations and Production Management*, 18(3), 1–22. <https://doi.org/10.14488/BJOPM.2021.010>.
- Scott, J. E., & Walczak, S. (2009). Cognitive engagement with a multimedia ERP training tool: Assessing computer self-efficacy and technology acceptance. *Information and Management*, 46(4), 221–232. <https://doi.org/10.1016/j.im.2008.10.003>.
- Sethibe, T., & Naidoo, E. (2022). The adoption of robotics in the auditing profession. *South African Journal of Information Management*, 24(1), 1–7. <https://doi.org/10.4102/sajim.v24i1.1441>.
- Straub, D., Keil, M., & Brenner, W. (1997). Testing the technology acceptance model across cultures: A three country study. *Information and Management*, 33(1), 1–11. [https://doi.org/10.1016/S0378-7206\(97\)00026-8](https://doi.org/10.1016/S0378-7206(97)00026-8).
- Tian, M., Deng, P., Zhang, Y., & Salmador, M. P. (2018). How does culture influence innovation? A systematic literature review. *Management Decision*, 56(5), 1088–1107. <https://doi.org/10.1108/MD-05-2017-0462>.
- Tuffaha, M., & Perello-Marin, M. R. (2021). Artificial intelligence definition, applications and adoption in Human Resource Management: a systematic literature review. *International Journal of Business Innovation and Research*, 1(1), 1. <https://doi.org/10.1504/IJBIR.2021.10040005>.
- Upadhyay, N., Upadhyay, S., & Dwivedi, Y. K. (2022). Theorizing artificial intelligence acceptance and digital entrepreneurship model. *International Journal of Entrepreneurial Behaviour and Research*, 28(5), 1138–1166. <https://doi.org/10.1108/IJEER-01-2021-0052>.
- Vărzaru, A. A. (2022). Assessing Artificial Intelligence Technology Acceptance in Managerial Accounting. *Electronics (Switzerland)*, 11(14). <https://doi.org/10.3390/electronics11142256>.
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly: Management Information Systems*, 27(3), 425–478. <https://doi.org/10.2307/30036540>.
- Verma, S., Sharma, R., Deb, S., & Maitra, D. (2021). Artificial intelligence in marketing: Systematic review and future research direction. *International Journal of Information Management Data Insights*, 1(1), 100002. <https://doi.org/10.1016/j.ijime.2020.100002>.
- Votto, A. M., Valecha, R., Najafirad, P., & Rao, H. R. (2021). Artificial Intelligence in Tactical Human Resource Management: A Systematic Literature Review. *International Journal of Information Management Data Insights*, 1(2), 100047. <https://doi.org/10.1016/j.ijime.2021.100047>.

- Wan, S. M., Cham, L. N., Tan, G. W.-H., Lo, P.-S., Ooi, K.-B., & Chatterjee, R.-S. (2022). What's Stopping You from Migrating to Mobile Tourism Shopping? *Journal of Computer Information Systems*, 62(6), 1223–1238. <https://doi.org/10.1080/08874417.2021.2004564>.
- Wanner, J., Herm, L.-V., Heinrich, K., & Janiesch, C. (2022). The effect of transparency and trust on intelligent system acceptance: Evidence from a user-based study. *Electronic Markets*, 32(4), 2079–2102. <https://doi.org/10.1007/s12525-022-00593-5>.