

A PRISMA-Guided Systematic Review Approach to Examine the Effect of AI Adoption on Qatari SMEs' Performance

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ABSTRACT

Artificial intelligence is rapidly transforming marketing by improving customer engagement and operational efficiency. Small and medium-sized enterprises (SMEs), especially in Qatar, are not able to adopt AI due to high adoption costs, poor technological skills and employee resistance. A thorough and methodological literature review was conducted to get a grasp on the factors influencing AI adoption and the subsequent effect on marketing performance. In accordance with the PRISMA guidelines, 32 peer-reviewed publications from 2020 to 2025 were analysed by applying a CASP/AMSTAR checklist, thematic coding and narrative analysis. The literature review has identified that technological readiness, managerial support, digital literacy and environmental factors are the major facilitators of AI adoption. However, context and organisational challenges are the main inhibitors of AI adoption. Nevertheless, the literature affirms that AI adoption increases the marketing performance of SMEs, and the TOE and DOI models are supported, while recommending a merger with the dynamic capabilities theory. Finally, the literature review asserts that policymakers and SME managers need to prioritise training, infrastructure and digital readiness to ease the path for AI adoption.

Keywords: SME, AI, AI adoption, Barriers, Challenges, Customer engagement, Marketing Performance.

INTRODUCTION

Technology plays an essential role in determining the most suitable strategies for organisations. Technology reflects the approach adopted by organisations towards operations. This includes the information used to perform tasks, the systems and processes that transform inputs into outputs, the levels of skill required for employee roles, and the way technology functions as a separate entity from the organisation. Effective technology creates value for the organisation, enables quality, faster output, and subsequently reduces costs (Skoko et al., 2008). By understanding the context of organisations, the benefits of technology can be identified, barriers to new technology can be resolved, growth can be based on technological development, and sources of potential organisational isolation can be predicted and addressed.

Within this context, Artificial Intelligence (AI) is rapidly becoming part of business activities worldwide, transforming not only every aspect of customers' lives but also business institutions (Ahmad et al, 2025a and 2025b). As such, understanding AI usage in marketing practices is undoubtedly quite important for all types of business organisations, including small and medium-sized enterprises (SMEs) (El-Gohary et al, 2025). The successful adoption, usage, and implementation of AI by such firms can enhance their marketing performance and

help them achieve business objectives (El-Gohary et al, 2021). AI usage is becoming an increasingly everyday marketing practice, making research in this area both timely and valuable.

However, the review of the published work in the field revealed that the focus has been mainly on technology development and the factors leading to the successful adoption and implementation of technology or the lack of such implementation (El-Gohary, 2012). Yet the digital readiness of organisations and the factors affecting AI adoption (especially in SMEs) are equally important. The successful adoption of AI technology requires not only a healthy environment for its development but also the cooperation of many stakeholders. This includes, of course, the end-users of AI technology, as well as people and organisations of various types and sizes using AI technology within their business models. Within this context, AI is enacting a service-oriented business model by developing AI services that build up value co-creation for the end-users of AI services.

A number of investigations have been undertaken to examine the growing phenomenon of AI and the Internet and their associated effects on company operations; of these, the majority have concentrated on the large-scale business perspective. While discussion on the concepts and strategies of digital marketing exists, some gaps remain in the literature relating directly to the impact of AI and digital marketing strategies on the performance of SMEs (Naldi et al., 2022). However, SMEs are the core framework components underpinning the world's economies and represent the most prevalent business framework adopted globally, particularly in rapidly developing economies (such as Qatar). Previous studies show that when implementing electronic or digital marketing strategies using diverse tools and media, SMEs can not only prevail in this highly competitive environment but also survive and grow. Nonetheless, there are pervasive misunderstandings of digital or modern marketing conceptions amongst SMEs. Several SMEs face numerous complications, challenges, and obstacles that dishearten them from investing in digital marketing applications or tools.

The purpose of this research is to contribute to the current knowledge in its field by systematically investigating the various factors affecting AI adoption by SMEs in Qatar, as well as the impact of this adoption on SME customer engagement and marketing performance. The adoption of AI by SMEs may be crucial for effective business and marketing performance management, which will in turn lead to business growth (Lu et al., 2022). The promising implementation of AI brings various opportunities for SMEs; nevertheless, the adoption of AI and digital transformation remains low across countries. Research on AI adoption and the factors affecting it in SMEs is still a relatively new field compared to studies on large organisations. Therefore, the objectives of this literature review are to:

1. Detect which factors are influencing AI adoption by SMEs in Qatar.
2. To investigate the relationship between AI adoption and market performance.
3. Study the obstacles and drivers of digital willingness in SMEs in Qatar.
4. Address research gaps in the literature (which primarily focus on AI adoption in large businesses).

To develop these objectives, the PICO framework was used to clarify the research focus. The elements of the PICO framework of this research are:

- **Population:** SMEs in the state of Qatar.
- **Intervention:** Implementation and adoption of AI in marketing practices.
- **Comparison:** SMEs with no or little AI adoption measured against large AI adoption.
- **Outcome:** Improved business growth, marketing performance, and customer engagement.

METHODS

This literature review followed the PRISMA guidelines, which helped the researcher track the articles found during the identification step, where registers and databases such as Web of Science, JSTOR and ResearchGate along with search keywords such as (“artificial intelligence” OR “AI” AND “SMEs”) OR (“small and medium enterprises” AND “adoption”) (“AI” OR “SMEs” AND “challenges”). During this time, the researcher looked at papers from 2020 to 2025, as it was around this time that companies started to use or think about using AI in their business. The researcher began with 700 articles, but after removing duplicates and checking titles and abstracts to ensure their relevance, ended with 32 papers. After this, the papers which were relevant by title and abstract were assessed against the inclusion criteria determined by the researcher, with the following:

1. Peer-reviewed articles.
2. Papers that discussed AI adoption, limitations to implementing AI, readiness, and market performance in SMEs.
3. Published: 2020 - 2025.
4. Provided qualitative, quantitative, or mixed methods.

Still, it is crucial to mention that not all the papers were included, as some did not meet the criteria and were excluded as they:

- Focused on large businesses and not particularly SMEs.
- Does not look at the AI adoption impact on marketing performance.
- Written in other languages.
- Does not meet the full text eligibility.

Here, the researcher used a combined checklist using elements from the AMSTAR and CASP checklists to evaluate the appropriateness of the papers before using them in this systematic literature review (Shea et al., 2017; Critical Appraisal Skills Programme, 2022). This checklist looked at:

- **Title and abstract:** Does the title reflect the nature of the research and its scope? Does the abstract condense all the important elements of the paper (research variables, problem, objectives, methods, sample, results and conclusion)
- **Introduction and literature review:** Is the introduction written clearly? Does the introduction offer a good background illustration of the research? Does it show the research importance? Is there an updated literature review? Are the research gaps well identified and clearly illustrated? Are the research objectives, questions and hypotheses provided clearly?
- **Research design and methodology:** Is the research design suitable to achieve the required research objectives and solve the research problem? Is the employed methodology adequate? Are the data collection methods and procedures suitable?
- **Data analysis and results:** Did the author(s) use suitable data analysis tools and software? Are the research results presented in a suitable way?
- **Discussion and conclusion:** Are the discussion and conclusion clear? Did the author(s) reach the required research objectives? Are the findings discussed in relation to the related literature?
- **Does the paper add to knowledge in its field?** Did the author(s) illustrate the research limitations and their impact on the research? Did the author(s) offered direction for future research?
- **Writing quality and structure:** Is the academic writing style of the paper suitable and adequate? Is the paper easily readable? Did the author(s) use correct reference style? Are the references details within the references list complete?

When synthesising, the researcher mainly relied on thematic coding to discover patterns and ideas that were repeatedly mentioned in the literature. As such, the literature can be divided into the following themes:

1. Barriers to AI Adoption.
2. Drivers of Adoption.
3. Impact on Marketing Performance.
4. Contextual and Cultural Diversity.
5. Theoretical Integration.

This is because the researcher could not do a meta-analysis of the quantitative papers, as they differed both contextually and methodologically. As such, the researcher did a narrative analysis of the quantitative papers and found that a positive correlation exists between AI adoption and the marketing performance of SMEs. Furthermore, managerial support and infrastructure are critical factors for AI adoption, while costs and skills remain challenges.

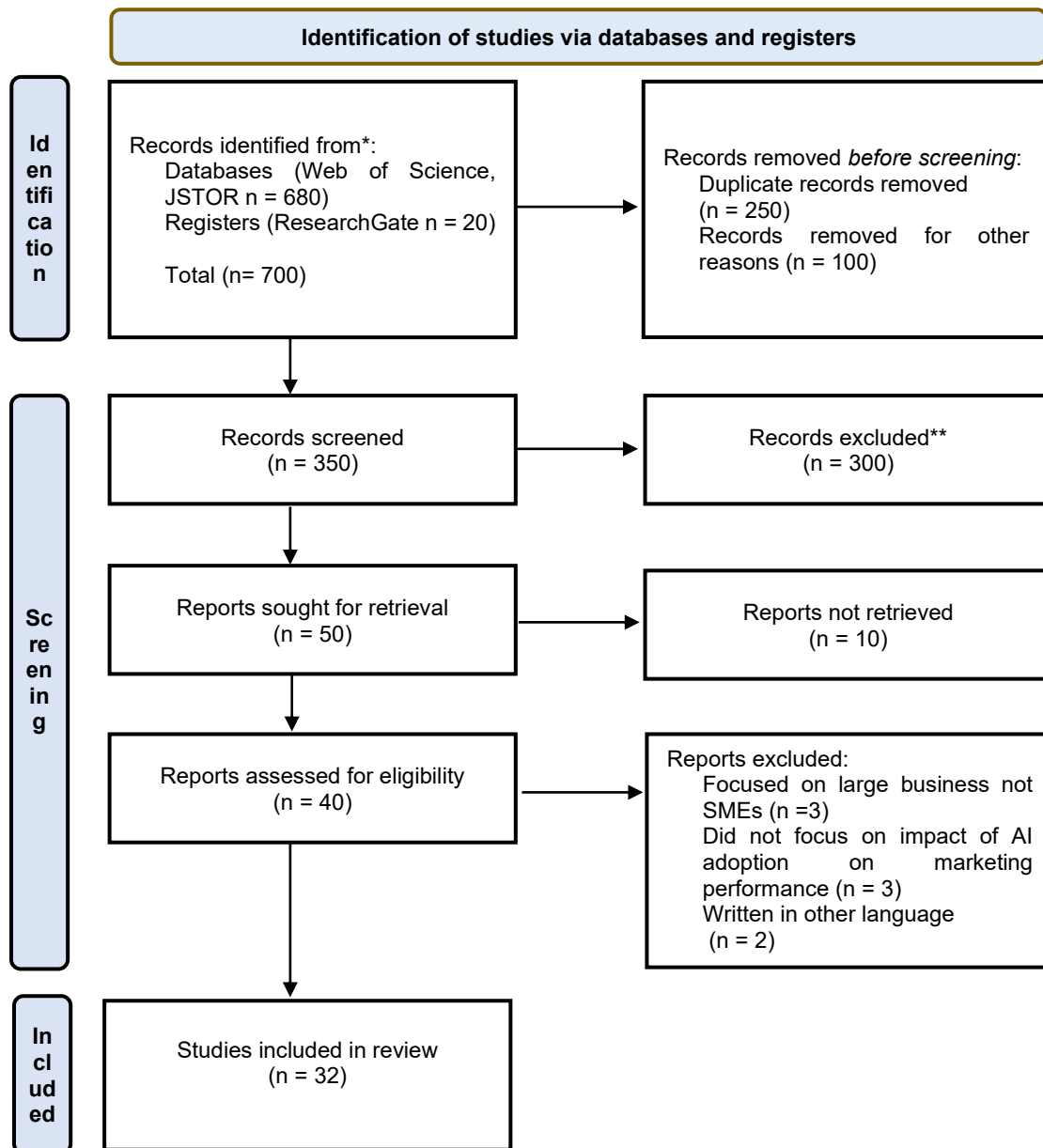


Figure 1: A visual representation of the literature review following the PRISMA guided method.

RESULTS

Table 1: Summary of the literature reviewed by the researcher.

Author & Year	Country	Methodology	Sample	Key Findings	Limitations
Schwaeke, et al. 2024	N/A	Systematic literature review	106 peer-reviewed articles	The major elements that support the adoption of AI are organisational culture, financial resources, technical infrastructure, the know-how, the surroundings, the rivalry and the laws. However, there are some additional factors that may influence an organisation's capacity to adopt AI such as limited availability of data, the lack of methods for assessing AI lifecycle, the non-existence of customised solutions, unqualified personnel and system complexity	Only uses peer-reviewed papers – possibility of publication bias. Mentioned capabilities may not have the strongest correlation with market performance.

Bhalerao, et al. 2022	N/A	Literature review – research paper, case studies, online reports, newspapers	7	The research results indicated that AI adoption barriers in SMEs include a lack of knowledge about AI's benefits to the business, reduced data quality, firm size, insufficient monetary resources, poor employees' ICT skills, and limited entrepreneurial orientation. The study also reinforced the fact that AI usage can improve SME performance.	Only a small amount of literature was reviewed, so it does not provide a comprehensive picture. This text just talks about the benefits and limitations of AI adoption by SMEs.
Arroyabe et al. 2024	27 EU countries (Brazil, Canada, the UK, Japan, Iceland and Turkey,	Survey	12,108 SMEs in various industries (mining, information and communication, manufacturing and construction, to name a few)	AI usage by SMEs is highly impacted by innovative capacities, the SME's digital abilities, and the SME environment	Generalisability in a specific context or industry
Al-Kuwari, A. 2023	Qatar	Qualitative - Semi-structured interviews	5 companies, 16 interviews	AI adoption by Qatari brokerage companies is highly impacted by insufficient resources, the cost of AI tools, the lack of AI and technological knowledge, and mental fences.	Difficult to gain a deep understanding, and could incorporate the financial services.
Hussain, A., & Rizwan, R. 2024	N/A	Reflection and synthesis to create a prescriptive framework	Framework looked at: Awareness for Leadership, Adoption of General-Purpose Generative AI Tools, Adoption of Off-the-Shelf Task-Specific Tools, In-House Development of Generative AI Tools and In-House Development of Discriminative AI Models	The authors offered a detailed AI implementation framework in SMEs to address barriers to AI usage or adoption, such as cost, the absence of technical skills, and employees' acceptance.	The paper looks at the main barriers to AI adoption in SMEs: cost, lack of technical skills, and employee acceptance.
Badghish, S., & Soomro, Y. A. 2024	Saudi Arabia	Quantitative methods - survey	Managers from 6 sectors (220, small and medium companies, different job levels)	Considering Saudi Arabian SMEs, while cost is not a barrier to AI adoption, complexity is considered a barrier. Meanwhile, AI adoption by Saudi Arabian SMEs is positively affected by AI's relative advantage.	A cross-sectional study in Saudi Arabia, as opposed to studies in different countries, may give different results. Only focused on SMEs Only focused on the impact of AI adoption, there may be other factors that influence the sustainable performance of the business.
Iyelolu, et al. 2024	N/A	Qualitative method – systematic literature review and case studies	Overview of AI solutions for SMEs: machine learning, natural language processing, and robotic process automation and analysis of Application of AI in helping SME	AI adoption by SMEs can provide the SME with a lot of benefits, such as: - Improving productivity. - Reduction of cost. - Business growth. However, AI adoption by SMEs faces many challenges, such as: - High costs of AI tools, - Low employees' ICT skills.	Lack of empirical data Case studies are from developed economies, not developing economies Based on outdated information

			innovation: operational efficiency, enhancing customer engagement, and enabling data-driven decision making	- Employees' confrontation with change.	
Ulrich, P., & Frank, V. 2021	Germany	Empirical study – standardised online questionnaire	283 companies, different sectors (service, automotive, mechanical and analogue engineering, etc.) Different departments within the company (IT, management, HR, etc.)	SMEs are motivated to use outdated technologies such as rule-based systems. Inadequate employee skills were found to impede such implementation.	Only used the quantitative method There is a low response rate, and it is only done in Germany.
Cooper, R. 2025	Ireland	Quantitative method – questionnaire	47 SMEs in 13 application areas in NPD	Despite the great benefits of using AI for new product development (NPD), most SMEs are not willing to adopt it. The primary obstacles to AI adoption by SMEs are a lack of readiness, insufficient top management commitment to AI, a lack of trust, and the absence of or low perceived value from adopting or using AI.	Sample limitation Based on self-reported data Cross-sectional Only a small number of SMEs actually implement AI adoption
Ahmed, S. 2024	Malaysia	Exploratory research – comprehensive, unstructured, and semi-structured interviews	Unclear how many interviews were conducted (AI-based innovation expert)	The human side of AI, including preparation and communication with AI, has a significant impact on AI usage.	Unclear how many interviews were conducted, and findings mention four companies, but did they do the interview – unclear.
Wei, R., & Pardo, C., 2022	China	Qualitative method – semi-structured Case study – B2B company	21 interviews with managers, directors (different departments) and customers	Digital platforms offer SMEs opportunities to integrate AI into their corporate processes.	Study based on an e-platform company Conducted in China
AL-Shboul, M. 2023	Jordan, Qatar, UAE, Saudi Arabia, and Bahrain	Quantitative method, Questionnaire	233 participants (HR managers and IT senior managers), Various manufacturing firms (private and commercial)	The trustworthiness of use, pressures of competition, and the firm's infrastructural facility readiness directly positively affect AI adoption. Meanwhile, the perception of usefulness serves as a mediating factor between infrastructure preparedness and the willingness to adopt AI.	Focused on FIR as the mediating factor and UC as the mediator. Other factors (SPSE and TKCE) could be vital.
Alzaghal, et al. 2024	Palestine	Quantitative method, Questionnaire	284 SMEs	Managers' digital literacy significantly positively affects the effectiveness of AI adoption and use by SMEs, leading to long-term sustainable growth.	Cross-sectional, used SMEs that were associated with the Palestinian Information Technology Association of Companies and depended on self-reported data (social desirability bias and inaccuracies)
Nadella, et al. 2024	N/A	Machine learning perspective – collecting data from a dataset of	Machine learning modelling - logistic regression, random	Cybersecurity challenges play a vital role in the adoption of AI-driven cybersecurity solutions. Meanwhile, constant updates and	Only looks at the cybersecurity issues that SMEs face.

		cyberattacks on SMEs	forest, and gradient boosting	optimisation of AI-driven cybersecurity solutions are essential in addressing SMEs' cybersecurity concerns.	
Khan et al. 2024	N/A	Quantitative method	422 SMEs	The SME's openness to modernisation and knowledge incorporation plays an imperative role in AI adoption.	Focused on the construction industry Cross-sectional Measurement of validity and reliability (how to measure openness to innovation)
Panigrahi, et al. 2023	India	Empirical study using the dynamic capability theory- Quantitative method – structured questionnaire	Sample size of 246, participants in a managerial position	SMEs' AI adoption is influenced by the SME's perceived AI competitive advantage and the stability of their business supply chain.	Small sample size Focuses on manufacturing SMEs
Agrawal, et al. 2024	India	Literature review on the topics: Artificial intelligence, e-business resources, and the adoption process of advanced technology by big or small firms. Google Scholar was used to collect previous research papers, case studies and PhD dissertations on these topics, after 2010.		Technological, organisational, and environmental factors affect SMEs' adoption of AI technology.	Focused on India: lack of generalizability. Conceptual model without empirical data. Lack of longitudinal study.
Eberhardsteiner, L. 2024	N/A	Design science research: Interview, Literature review – Google Scholar, SCOPUS, Science Direct and JSTOR with keywords like “artificial intelligence”, “AI”, “SME”, etc.	20 articles and an interview with three people	The key pillars of AI adoption by SMEs are strategy, data, technology, organisation, environment, and make-or-buy decisions.	Only focuses on parts of the process of AI adoption. A small number of interviews Literature focused on barriers and challenges of AI adoption in general, instead of specifically on SMEs
Lai, et al. 2025	Malaysia	Mixed methods – structured survey and qualitative semi-structured interviews	Purposive sample of SME owners and managers	Top management support and technological readiness are the main drivers of AI technology adoption by Malaysian SMEs.	Only focuses on SMEs in Malaysia. Does not mention which sector or the sample number.
Mohib, et al. 2025	N/A	Quantitative, structured research method - survey	150 representatives of SMEs from different fields (manufacturing, technology, retailing and healthcare)	SMEs face issues in implementing AI as a result of financial limitations, lack of technological skills, human scepticism and limited AI solutions. The paper emphasises the need for government incentives, employee-training programs and for AI systems to be simple.	Self-reported data has potential responder bias. Research generalisability is affected by purposive sampling and the focus on particular geography and industries.
Kramarenko, A. 2025	N/A	Based on the analysis of industry reports, survey data and academic papers accessed through google scholar and SCOPUS with keywords such as SME and AI	Data collected from 41 small businesses	AI has advantages for SMEs which include the automation of business processes, improvement of business processes and better customer experience through personalisation. Businesses are reluctant to adopt AI. This paper says that AI adoption can help SMEs with creating	Language bias, using only papers written in English. Limited access to proprietary data.

				content, financial management, operational optimisation, automated operations and venture business ideation.	
Saleem et al. 2024	Oman	Quantitative method – survey	177 responses from 81,460 SMEs	This paper finds that businesses open to adopting AI in their operations can enter and compete in global markets. Frugal innovation is essential for SMEs as it helps them to overcome financial and operational restrictions. This allows them to be cost-effective and enhance their adaptability and competitiveness. This enables them to compete.	Use of cluster sampling - similarity can cause high sampling error. This paper also collected data from businesses ready to adopt AI, rather than from those that had already adopted AI in their operations.
Abdelfattah et al. 2025	Oman	Quantitative method- survey	345 entrepreneurs	The study shows a correlation between using social media and the advancement of e-entrepreneurial innovation, with government policies and AI adoption also contributing to this process.	Quantitative methodology will not capture the experiences and points of view of those who have integrated AI into their businesses. Only focuses on Oman – generalisability. With AI technology constantly changing, findings become outdated more quickly.
Awamleh et al. 2024	N/A	Mixed methods – Quantitative and Qualitative (Literature review)	Qatar, Oman, Russia, China, Japan, UAE, Jordan, Saudi Arabia, USA, Canada, Brazil, Australia, Ghana, EU and Nigeria	This paper shows that BI techniques with organisational agility, partnerships and data science applications help countries to meet and attain their SDGs.	The research focused solely on BI techniques to attain SDGs and did not consider other international performance indicators. The sample size was limited to 14 countries, comprising both developing and developed nations.
Chen et al. 2025	USA	Quantitative method – online survey	226 responses from marketing, brand and product managers.	This paper highlights that AI adoption significantly enhances a business's marketing performance and provides marketing capabilities to adjust to changing market conditions.	Generalisability – The USA-based. Constructs used in the model, while informative, were not exhaustive.
Salah, O. & Ayyash, M. 2024	Palestine	Quantitative method – online questionnaire	305 SMEs, simple random sampling	The paper states that competitive pressure, AI integration, innovative culture, business partner pressure, and customer savviness strongly influence e-commerce adoption. In addition, adopting e-commerce affects the market performance of SMEs.	Cross-sectional study Generalisability – Palestine SMEs
Mishra et al. 2022	USA	Data collected from EDGAR and COMPUSTAT	19,000 firm-year observations, 122 AI-related keywords in 10-K reports	The paper highlights that US firms are transitioning to or beginning the use of AI, confirming what previous studies have indicated: AI can improve productivity.	Large sample, possible to have missed firms that have an AI focus but do not mention it in the 10-Ks or do not mention any of the keywords that the research used. Only focused on 10-K reports.
Al-Surmi et al. 2022	N/A	Quantitative method – SEM and ANN.	Data collected from 242 managers from different industries	AI improves decision-making quality through speed, consistency and accuracy.	Depends on conceptual analysis and secondary

				AI adoption enhances operational performance and reduces cost. Combining human expertise with AI gives better outcomes	data instead of empirical proof. Cross-sectional – cannot assess how decisions driven by AI evolve.
Musayeva, A., & Mammadli, N. 2025	N/A	Mixed methods, descriptive and exploratory	Overview of current AI applications, economic impact and challenges faced by SMEs. Secondary data was gathered from the World Bank, OECD, and firms such as PwC and Deloitte. Additionally, data were collected from academic papers on Google Scholar, SCOPUS, and Web of Science.	The paper emphasises the importance of employees' skills, financing, and infrastructure within a framework that supports AI-driven SME growth for businesses and policymakers.	Dependent on secondary data, focused on emerging markets
Popa et al. 2025	N/A	Quantitative methods – cross-sectional, online questionnaire	240 respondents (workers using AI in the workplace, University students and customers who use AI for personal tasks)	This paper gives a deeper understanding of the contextual, cognitive, marketing-related and emotional drivers of consumer embracing of AI-powered equipment	Cross-sectional, limits generalisability to the broader SME population
Sánchez et al. 2025	N/A	A literature-based conceptual analysis with case studies from European, Nordic, Spanish, Italian, USA, China, India, Saudi Arabia, Finland, Pakistan, Ghana, Africa and global SMEs from different sectors and industries		The paper focuses on the TOE and DOI theory. This paper provides a six-step methodology to help SMEs with AI adoption, with particular technological, strategic and organisational readiness.	Made from secondary literature that had not been validated through primary data. Context sensitive, as they may not be similar in another context, as AI is rapidly transforming.
Jalil et al. 2025	Malaysia	Quantitative method – self-administered and online questionnaire	335 SMEs owners and managers in the manufacturing and service industry	The study finds that AI adoption plays a vital role in improving SMEs' digital value creation.	The study relies on cross-sectional data and uses only quantitative methods. A mixed method would be better to gain a more in-depth understanding of SMEs' intention to adopt AI.

The 32 reviewed studies have been analysed, revealing a variety of themes and patterns in the literature on the adoption of AI by SMEs. One of the main concerns, based on several sources, was the acknowledgement that the most important facilitators of AI adoption in SMEs are technological readiness, managerial support and digital capabilities. Lai et al. (2025), Panigrahi et al. (2023) and Badghish and Soomro (2024) cited that companies with good technological infrastructure and proactive leadership would be almost ready to implement AI. Additionally, Alzaghal et al. (2024) and Arroyabe et al. (2024) observed that digital literacy, innovation capacity and environmental support are factors that significantly boost adoption rates.

On the other hand, a number of studies identified significant reasons that prevent AI adoption. These reasons include the absence of adequate funding, lack of qualified staff, poor data quality, insufficient technical infrastructure, and the unwillingness of employees to accept change (Bhalerao et al., 2022; AL-Kuwari, 2023; and Mohib et al., 2025). Among them, the article's authors highlighted organisational and cultural factors. Cooper (2025) and Iyelolu et al. (2024) noted that rigid ways of thinking and the fear of technology replacing humans significantly slow down the adoption process.

There is a broad agreement in the literature concerning the positive impact of AI adoption on marketing performance. AI technology is viewed as a boost to customer engagement, operational efficiency, and marketing

decisions driven by data (Chen et al., 2025; Salah & Ayyash, 2024; Jalil et al., 2025). AI tools, such as prediction models and Chatbots, have played a key role in allowing SMEs to remain close to the market, support product adjustments and gain a competitive edge by being quick in their strategic actions.

Besides this, context was recognised in the literature as a major factor. Adoption restraints like high costs, unavailability of skilled labour and poor technological infrastructure were mainly discussed as structural barriers in the Persian Gulf area, particularly the case of the state of Qatar. On the other hand, in the case of Europe, the barriers are a lack of awareness and infrastructure. In addition, authors highlighted that internal capabilities are crucial (Al-Kuwari, 2023; Ulrich & Frank, 2021; and Arroyabe et al., 2024).

However, during research, it was found that contradictions do exist. To illustrate, Badghish and Soomro (2024) maintain that cost is not a significant hurdle, whilst Al-Kuwari (2023) and Mohib et al. (2025) assert that money woes are still a big problem, particularly in the case of developing nations. Similarly, Bhalerao et al. (2022) reported that small businesses face more obstacles in technology adoption, while Alzaghal et al. (2024) reached the opposite conclusion, stating that when digital literacy is high, size is not considered a significant factor affecting the adoption process. Contradicting results are also seen in the area of employee acceptance, as Cooper (2025) mentions substantial resistance, while Hussain and Rizwan (2024) suggest that acceptance increases if training and leadership visibility are stressed.

The reviewed articles also revealed a number of trends. AI adoption research has been primarily geographically focused on Asia and the Middle East, specifically India, Oman, Palestine, Saudi Arabia and Malaysia, with minimal focus on Qatar. Studies from Europe and North America offer comparative insight into technologically advanced contexts; however, Africa and Latin America remain largely overlooked. (Ulrich & Frank, 2021; Chen et al., 2025). From a methodological perspective, most studies used quantitative methods, such as surveys and structural equation modelling (SEM), while a few used qualitative or mixed-method approaches (Lai et al., 2025; and Awamleh et al., 2024). This trend reveals that the field has opted for empirical validation over interpretive depth, which might limit the capturing of the contextual and behavioural aspects. Furthermore, the literature mainly used was from 2020 to 2025, which showed an increased interest in AI adoption, mainly because of the COVID-19 pandemic. For example, Lu et al. (2022) and Musayeva and Mammadli (2025) draw attention to the digital transformation initiatives fast-tracked by the pandemic and the general perception that AI is one of the main post-pandemic resilience and efficiency enablers.

DISCUSSION

The synthesis of the reviewed papers suggests that AI adoption is a strategic catalyst for marketing performance in SMEs, with benefits of greater productivity, more responsive customers and sustainable competitive advantage. The papers indicate that the proper implementation of AI is not entirely dependent on technology but on factors such as the readiness of the organisation, management support, and cultural adaptability (Chen et al., 2025; Jalil et al., 2025). In the case of Qatar, AI adoption is a chance for SMEs to get integrated with the national innovation and diversification agendas, but realising this potential would need the removal of the barriers of cost, skills and infrastructure (Al-Kuwari, 2023).

Even though there has been an increase in academic interest in AI adoption, there are several research gaps to be filled. Firstly, the aspect of geography as a limitation can be seen through the lens of the fact that very few studies have investigated the AI adoption issue in Qatar, compared to the majority of those conducted in Asian and European context. Another limitation is the discrepancy in approaches, as qualitative and cross-sectional studies dominated the field, restricting access to longitudinal and experiential insights. Besides, the studies did not differentiate much among the sectors, therefore the finance, manufacturing and retail industries were characterised by lack of differentiation. Moreover, the integration of the theories still needs to be developed, as the TOE and DOI frameworks are rarely extended to include marketing performance or even behavioural constructs, among the few studies. Furthermore, the long-term performance outcomes of AI adoption, specifically its sustained influence on marketing capabilities, have not been explored empirically.

There are numerous limitations, both contextual and methodological. Several studies have relied on limited samples, which might not reflect the overall SME population (Cooper, 2025; Al-Kuwari, 2023). Furthermore, there is a geographical bias as the main focus is on the European and Asian economies. As such, the results are not universally applicable. Besides, the very high dependence on self-reports in survey data causes biases and measurement inaccuracies (Jalil et al., 2025; Mohib et al., 2025). Cross-sectional designs have been the main type of study, which prevents causal inference and limits the understanding of the adoption process over time (Saleem et al., 2024; and Alzaghal et al., 2024).

Theoretical and practical implications confirm the application of TOE and DOI models to explain the AI adoption behaviours of SMEs. However, it was also pointed out that these models need to be combined with the dynamic capabilities theory to better recognise change in the organisation and the learning process. Practically,

Qatar and other similarly situated economies can or rather should, make policymakers focus on AI readiness initiatives, which include training programs, funding support and investment in digital infrastructure. Digital skill development is to be encouraged by SME managers in their work, AI usage for marketing purposes and partnership formation to share costs and knowledge. Future research should consist of more comparative, longitudinal and mixed-methods studies to provide the human and dynamic aspects of AI adoption. In particular, studies on SMEs in Qatar need to be carried out, as they will integrate global findings into the scope of the region's digital economy. Moreover, future research can examine the employees' perspective and the interaction between human creativity and AI's ability to enhance marketing performance.

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