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SMEs and artificial intelligence in oman: A case of the insurance sector

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Abstract

Small and Medium Enterprises (SMEs) are adopting emerging technologies like Artificial intelligence (AI), cloud computing, and blockchain. The research has shown that SMEs also face significant challenges at various stages of AI adoption, from conception to post-implementation, resulting in either no or partial implementation. Therefore, it is critical to examine the factors that influence the use of AI by SMEs. Through this research, we are answering the following research questions: How is AI perceived by the SMEs in their business operations? What are the key factors that influence the use of AI in SMEs? This research is based on a case of insurance SMEs in Oman, using a qualitative approach, and conducted 14 semi-structured interviews. Six key themes were found, which reflect on the current processes and barriers to integrating AI. This study argues that the sustained use of AI requires not just technology but also alignment with micro-level processes and support from technology partners, funding, workforce development, and policy support to enable SMEs to use AI applications in the long term. Overall, the study underscores the critical factors that impact the use of AI by SMEs. This research has both theoretical and practical implications.

Keywords: artificial intelligence (AI), small and medium enterprises (SMEs), insurance SMEs, qualitative approach.

Introduction

The country's socio-economic growth is supported by various sectors, including manufacturing, agriculture, energy, and services (banking and finance, health, education, information technology, and telecommunications), which are supported by Small and Medium Enterprises (SMEs). The majority of the SMEs belong to the informal sector (OECD, 2023; WEF, 2022). SMEs have become a prominent institution, drawing attention from the government, private companies, and society as they contribute to the achievement of the nation's social and economic objectives (World Bank, 2019). The impact of technology on SMEs continues to grow significantly across the globe in the 21st century, where technologies play crucial roles in enabling SMEs to channelize their business operations and support associated stakeholders like partner firms (Business to Business), customers, employees, and the government (Kääriäinen et al., 2023; Lacity & Reynolds, 2011; WEF, 2022). SMEs engage in various economic activities, playing a crucial role in both the economic and social spheres; however, these SMEs are often limited in their specialization. Traditionally, SMEs have limited access to financing, which often serves as a bottleneck that limits their functioning and future operations. While SMEs are positioned in various ways in developed, developing, and least developed countries, with varying degrees of institutionalization. The status of SMEs has been influenced over the past few decades (OECD, 2023; WEF, 2022; World Bank,

2019). The advancement in emerging technologies has significantly influenced the status and impact of SMEs. SMEs are using emerging technologies to improve their services. The continuous transformation of SMEs is not limited to specific business functions but rather encompasses the integration of information technologies across various functions and sectors. Artificial Intelligence (AI) use by SMEs opens up new space which were overlooked in the past, while AI can improve SMEs' resilience and catalyze the transformation to a reality driven by digital acceleration (Kääriäinen et al., 2023; Lacity & Reynolds, 2011; Oh & Pinsonneault, 2007; Street et al., 2017). The use of AI by SMEs leads to robust growth, yet SMEs that continue to follow traditional approaches continue to struggle to use AI in business functions (OECD, 2023; Schlegel et al., 2023). Consequently, there is growing academic and practical interest in examining how emerging technologies like AI, cloud computing, and blockchain can enhance the SMEs' ecosystems.

SMEs face the following barriers to the adoption of AI: limited resources, implementation concerns, lack of government support, and integration challenges (Schlegel et al., 2023). These concerns stem from institutional concerns such as data challenges, non-uniformity in processes, and infrastructures, which restrict the SMEs from using AI(Li et al., 2019; Schlegel et al., 2023). Despite barriers, SMEs are shifting towards AI-led processes. However, such SMEs remain limited in number. Although AI supports multiple applications, SMEs still struggle to adopt AI in their business processes (Fajarika et al., 2024; Lacity & Reynolds, 2011; Li et al., 2019; OECD, 2023; Schlegel et al., 2023). So, there is a need to explore how emerging technologies, such as artificial intelligence, can influence SMEs and why SMEs are struggling to use them. This paper presents a case study based on insurance SMEs in Oman, which operate in different segments of the finance sector. These SMEs provide services such as brokerage, risk and damage assessment, claims handling, underwriting, and consultancy services. The Large insurance companies dominate the Oman market; however, the rural sector, specific client segments with tailored services, and often niche markets can't be covered by big players, the role of insurance SMEs is critical. Using the insurance SMEs, we are answering the following research questions: How is Artificial Intelligence perceived by the SMEs in their business operations? What are the key factors that influence the use of Artificial Intelligence in SMEs? This paper analyses SMEs in Oman on the use of AI. Drawing on firsthand insights from SME owners and stakeholders, we argue that sustained use of AI requires not just technology but alignment with microlevel processes and support from policy, funding, and workforce development. We identify six themes, which reflect on the current processes and barriers to integrating AI.

The remaining paper is structured as follows: section two examines the existing literature on AI use in SMEs delivering services in insurance sectors; section three mentions the methodological approach of the study; section four analyses the result and identify themes; section five discusses the research, theoretical and practical implications and acknowledges the research limitations. The last section concludes the paper.

Literature Review

Oman Vision is a document that 2040 AI will play a big role in. The target to make Oman's GDP 10% based on AI and AI use cases, SME automation, and AI-based use cases within SMEs is part of the Ministry of Transport, Communications, and Information Technology(MTCIT) AI strategy document. The integration of AI operating in the finance and insurance sector is critically viewed as a strategic value operation for automation and resilience. The global and large insurance companies are investing in AI, such as underwriting claims, a chatbot claim function, etc. The SME faces more challenges for its dependency on cost, policy ambiguity capacity (Gaur et al., 2021; Enholm et al., 2021; Sharma et al., 2022; Crockett et al., 2021; Žigienė et al., 2019). The digital infrastructure is very important for the successful implementation of AI use cases (Ghobakhloo et al., 2022). The SMEs using cloud-based platform, such as an integrated CRM/ERP system, can utilize cloud-based AI solution, and it's very agile in onboarding AI use cases, this case is valid for the countries where data residency is not a issue Oman has strict policy abut

data residency, in these cases the service application has to be hosted within Oman. However, many insurance SMEs are operating obsolete and legacy environments, often based on paper-based records or a fragmented database (Sharma et al., 2022; Liu & Kuan, 2015). There are issues related to clean and accessible data, which is a challenge in AI adoption and impacts automation capabilities (Atieh et al., 2022; Žigienė et al., 2019).

The skilled resource availability in the SME sector further complicates the adoption of AI. SMEs are dependent on AI experts from vendors for AI-based solutions, use cases, business case preparation, and implementation (Bhalerao et al., 2022; Crockett et al., 2021). The outsourcing of these activities accelerates AI adoption; however, it raises concerns about data confidentiality, knowledge transfer, sustainability, and adaptability (Merhi & Harfouche, 2023). The insurance sector is primarily based on trust and compliance, and these challenges are amplified (Merhi & Harfouche, 2023).

There is also a financial concern among SMEs for use cases that require high capital or high operational costs; however, use cases with low costs and risks, such as automated claim triage, fraud detection, or AI-enabled chatbots (Berube et al., 2021; Sharma et al., 2022). These applications demonstrate that a strong return on investment and the low cost of deployment explain why these use cases are popular among insurance SMEs. However, the other use cases, such as predictive underwriting or computer vision for damage assessment, are still out of reach for most of the SMEs due to high capital investment, operational costs, and data training needs (Quan et al., 2024; OECD, 2023).

Regulatory compliance and ethical AI are crucial and complex in AI use cases, significantly impacting AI implementation in SMEs, as SMEs often lack dedicated teams to manage regulatory compliance and data residency compliance (OECD, 2023; van Bekkum et al., 2024). SMEs are not deploying sensitive AI use cases, such as customer profiling and pricing, due to a lack of understanding of compliance and its implications (Drydakis, 2022; Žigienė et al., 2019). There is a need for fairness and transparency in algorithmic decisions within the insurance sector (Gaur et al., 2021; Sharma et al., 2022).

Table 1. Summary of key studies on AI adoption in Insurance SMEs

Title	Authors	Objective	Research Gap	Future Research
Artificial Intelligence adoption in the insurance industry: evidence from the UK	(Khan & Jones, 2022)	To examine the factors influencing the behavioral intention of insurance employees to adopt AI-enabled applications.	Limited empirical insights into AI adoption in the insurance workforce.	Analysis of the workforce skills, perspectives on AI-based services
Responsible and Human-Centric AI-based insurance advisors	(Rai & Agarwal, 2023)	To propose a model for AI-based insurance recommendation systems focused on ethical use.	Lack of guidance on designing AI systems that integrate human-centric values in insurance.	Human behavior and trust in an AI-based advisor
How does fintech shape the functioning of SMEs' risk management?	(Chen & Huang, 2024)	To assess the influence of fintech innovation on SME insurance purchasing behavior.	Missing linkage between fintech payment systems and insurance consumption behavior in SMEs.	SME risk analysis due to Fintech-enabled tools
High-Risk Artificial Intelligence	(Weber & Schlegel, 2025)	To explore the implications of high-risk AI systems for start-ups and SMEs in insurance.	Lack of discussion on the regulatory implications of high-risk AI in small contexts.	Regulatory compliance and data residency policy analysis and its impact on SMEs
AI-driven innovation in emerging markets	(Saha & Verma, 2025)	Analysis of AI influences on innovation in SMEs and decision making.	Limited TAM model extensions that consider sector-specific innovation outcomes.	AI acceptance in SMEs and the ecosystem outcomes

Methodology

This research is based on a qualitative approach to examine the factors influencing the use of AI in insurance SMEs. The research design follows the case study method. (Yin, 2017). The field of research is located in Oman within the context of SMEs. In Oman the structure of SMEs are under the Small and Medium Enterprise Development Authority (Riyada) (SME Development Authority, Oman, 2023), As per the Riyada SMEs are distributed based on number of employees and annual revenue like micro enterprise have 1- employees and annual revenue 100,000 Omani Rial (OMR), small enterprise 6-25 employees and revenues 100,000 -500,000 OMR, and Medium 6-29 employees and 3,000,000 OMR annual revenue. The SMEs' contribution is 25% of Oman's GDP. According to regulations, the government has established rules for large organizations to allocate a certain percentage of work to SMEs (OQ Group, 2023) and PDO (Petroleum Development Oman, 2020).

Data Collection and Analysis

This research analyzes both primary and secondary data sources to explore the SME ecosystem and understand the functions of SMEs. These data help us understand the roles of key stakeholders, their interactions, and the institutional context that influences SMEs' positions and decisions regarding AI use.

Primary Data

Primary data were collected through 14 semi-structured qualitative interviews with a range of participants associated with the insurance SMEs in Oman, including:

Table 2. Profiles of Participants in Qualitative Study on AI adoption in Insurance SMEs

Participants	Position / Role	Area of Specialisation/ Business stream
Participant 1	Insurance SME Owner	Finance & Insurance – Risk & Damage Assessment
Participant 2	SMEs IT Engineer	IT and telecom
Participant 3	SMEs Owner	ICT AI Startup
Participant 4	Insurance SME Owner	Finance & Insurance – Risk & Damage Assessment
Participant 5	Insurance SMEs - Operations Manager	Finance & Insurance – Risk & Damage Assessment
Participant 6	Insurance SME Owner	Finance & Insurance – Risk & Damage Assessment
Participant 7	Insurance SMEs - IT Engineer	Finance & Insurance – Risk & Damage Assessment
Participant 8	Insurance SMEs - Operations Head	Finance & Insurance – Risk & Damage Assessment
Participant 9	AI Expert	Finance & Insurance – Risk & Damage Assessment
Participant 10	AI Expert	Finance & Insurance – Risk & Damage Assessment
Participant 11	Vendor- Senior Manager ICT	ICT Vendor - Insurance Risk and Assessment
Participant 12	Vendor- Product Engineer	ICT Vendor - Insurance Risk and Assessment
Participant 13	Insurance SME Owner	Finance & Insurance - Risk & Damage Assessment
Participant 14	Expert	Academician with expertise in FinTech

Secondary Data

Secondary data were gathered from a variety of publicly available sources, including Government policies, regulatory guidelines, media coverage, and public statements by government representatives.

The insights from both primary and secondary sources were thematically organized to identify patterns and connections relevant to the research objectives. (Bowen, 2009).

Thematic Analysis
Thematic analysis was conducted in accordance with the guidelines of Braun and Clarke (2006). The data analysis process followed the stages outlined by Clarke and Braun (2013):

1. In the first stage, Data familiarization, which involves transcribing the interview and documents to gain an in-depth understanding of the material, as well as re-reading the data.
2. In the second stage, we started with open coding to identify initial concepts without any limitations in terms of the number of codes. As a second sub-step, related codes are clubbed together under a common code (axial coding).
3. In the third stage, identification of the themes where codes were clustered into preliminary themes, which were iteratively refined.
4. In the fourth stage, Finalizing the themes- In this stage, ten themes were identified, which were later merged into six core themes. In the fifth stage, we define the themes and present them in the next section.

To enhance the reliability of the coding process, two researchers independently conducted the thematic analysis. The final themes were validated through a consensus mechanism by following coding reliability thematic analysis. The analysis was done using the qualitative data analysis software *NVivo 15*.

Findings

In the findings section, we present the key themes that emerged from the data analysis. These themes were identified through a thematic analysis, which reflects insights into how SMEs interact with AI. These themes focus on the use and barriers to SMEs' usage and non-usage of AI.

AI Artefacts: Digital Readiness and Infrastructure Gap
Insurance risk and assessment SMEs in Oman work with limited digital infrastructure. They are using fragmented digital systems where software programs work in isolation. For instance, various stakeholders employ different approaches to collect and store data, including the use of Excel spreadsheets, Word files, handwritten documents, scanned copies, and PDFs. While a few SMEs have tried computer vision-based applications and chatbots, they face challenges in implementing them in day-to-day work due to relying on manual processes and the lack of integration between current systems and platforms. Fourth participant mentioned that *"We still operate claims mostly on Excel—AI is too far ahead for us."*
Most participants mentioned that their main operations, such as the policy claim and policy management system, are not supported by the latest digital infrastructure. Another participant (sixth), who is the owner of an SME, said, *"We are still handling many processes manually- uploading forms, printing reports, AI can't work on that."* The lack of required digital infrastructure acts as a real barrier for AI integration into the processes.

Job skills: Workforce readiness and internal resistance to AI Integration
To operate AI-based applications within SMEs has two perceptions; first, with existing systems and processes, SMEs can manage their operations; second, there is a fear of job loss. The first perception of the ability of existing systems, reflecting gaps in the AI-related skills, as AI-based skilling is not a point of focus within SMEs. In most of the SMEs, IT personnel operate primarily for the maintenance of existing applications with limited development activities, and they lack the specialized expertise required for the

AI-based workflows. Multiple participants said that the fundamentals of AI, digital platform data science, or machine learning related basic skills are not available among the SME employees. A participant, an SME manager, stated, *"Even our IT staff are not trained in data science or AI concepts- we need basic training just to get started."* Some SME owners and top executives are interested in AI applications and solutions, and desire to implement AI, but don't move forward due to limited resources and skills; at the same time, existing skills and resources are used in the day-to-day requirements. The limited resources lead to a lack of training and workshop programs, vendor support in onboarding, which limits the use by SMEs.
The limited technical skill in AI use also raises concerns for the SME staff for fear of job security. Employee resistance presents as a barrier to AI adoption; it is not only constraining the implementation but also the SME internal acceptance of AI-related solutions. Participant (seven- IT engineer) lamented that *"Our team fears AI will replace them-they don't trust what they don't understand."*

Resource Feasibility
Across the interviews, the financial resources of SMEs influence the decisions on whether to use AI or not. The Participant stated that return on investment is key to implementing AI-based solutions, while some SMEs do not want to invest in AI due to the limited short-term return. Participant (seven- IT engineer) said *"unless ROI is within sex months, management won't approve it,"* which reflects a mindset of the SMEs' leadership that business case feasibility based on good ROI can lead to automation.
This financial sensitivity was particularly sensed during the interviews among micro and small enterprises, where capital is limited and reserving it for the long term, making the SMEs at risk of loss. Participant (Fourth-SME owner) stated, *"Even a few thousand rial is a huge risk for us unless we see benefits quickly."* Which pointed towards a challenge, where an AI-based solution is unavailable for short-term business needs. The solution from vendors is often based on phase-wise delivery with a clear ROI for each phase. Another participant (Nine- manager at an AI solution vendor) stated, *"We tailor our offerings with clear KPIs for ROI- otherwise SMEs won't approve the budget."*
These perspectives explain clearly that the feasibility of a business case is considered through the lens of the immediate return on investment rather than a long-term strategic decision. This short-term plan-based orientation limits the innovation and SMEs from realizing the benefits of AI-based solutions.

Ecosystem Enablers: Role of Vendors and Experts
SMEs in the insurance sector generally use multiple tools and systems such as CRM, Policy issue applications, and claim management tools. These tools are often not integrated. Participant (Thirteen and an SME owner stated) *"There is no end-to-end system which is taking care of everything. So all tools are doing its own work, no integration".*
Any technology adoption in SMEs in Oman is vendor-driven; most of the organizations rely on telecom operators, local partners, and AI consultants for the solution implementation and integration. These partnerships facilitate initial engagement with AI technologies, due to the long-term dependencies developed among SMEs as they don't develop the team for these technologies.
A participant (nine, an AI solution vendor) stated that the regulatory requirements pose challenges for cloud-based AI offerings that depend on offshore infrastructure. He emphasized that, *"these circumstances, solution hosted locally with an Oman-based large language model (LLM) are more viable and compliant."* This indicates localized AI ecosystems, vendor ecosystems, and localized AI workforce requirements, which align with national data governance policies. The vendor plays a very crucial role in offering solutions, a tailored and customized approach, coaching SMEs, and support to SMEs for AI infrastructure compliance-related challenges faced by SMEs.

Missing Steps- Operationalization of AI in processes
As per the discussion during interaction with the insurance SME, the team working in SMEs has limited awareness of the specific process within the insurance operations that could be optimized and enhanced

through AI integration. The AI implementation remains very low, with most of the implementation focused on easy applications such as OCR (optical character recognition) for documentation, customer care chatbots, and the interface of chatbots with WhatsApp and other social media platforms with basic customer care services. A participant in AI vendor product management stated, *"Yes. Fraud alerts, claims scanning with OCR, and risk profiling using external data. But again, mostly with large insurance companies, not smaller players."* are the main use cases across the industry. SMEs must develop formal strategies or allocate budgets to support implementation. A participant eight-operation head in SMEs stated, *"It still feels like AI is something for the future, or for larger players who are directly involved with government pilots or telecommunication companies platforms."* This suggests that AI awareness is available within the SMEs ecosystem; however deeper understanding of the implementation is still in the development phase across the insurance sector.

Regulatory awareness and compliance gap

Oman has introduced a regulatory framework related to cloud services and data protection, but these guidelines are not well perceived by the SMEs. The SME lacks technical resources for regulatory and compliance understanding, and there is uncertainty about how to ensure that AI data hosting meets legal and regulatory compliance requirements. The SME team mentioned during the discussion about the absence of guidelines in simple words so that non-technical people can understand. A participant (Six, a SME owner) explained that *"we hear about data laws, but no one tells us how they apply to AI- there is a fear of getting fined."* This reflects a lack of knowledge about regulatory law and potential legal issues. Similarly, Participant 10, an AI product manager, acknowledged the complexity of the regulatory rules, stating, *"even we as vendors struggle to interpret regulatory compliance fully- it's not SME-friendly."*

As there is a disconnect between available regulation and SME-level understanding, which contributes to hesitation and delay in AI implementation, even among SMEs that recognize its value in operation. SME perceptions of regulatory compliance complexity and their lack of awareness significantly influence their hesitation towards AI adoption, though there are formal governance guidelines.

Discussion

The findings of this study suggest that there is a limitation in the organizational roadmap, strategy, and business plan, which is influencing AI adoption among SMEs in the insurance sector of Oman. The SMEs associated with the insurance sector are facing challenges such as a shortage of skilled workforce, regulatory compliance clarity, and a vendor-driven ecosystem (Gaur et al., 2021; Crockett et al., 2021). Technology often moves rapidly when driven by a vendor; however, sustainability is very low (Khrais, 2025; van Bekkum et al., 2024), as the vendor controls both the ecosystem and the data.

The perception of AI implementation is influenced by the organization's structure and digital maturity. SMEs with partial digitization and those already working with other technology partners have a higher degree of readiness for AI implementation. Several participants pointed out an AI chatbot in the FAQ, noting that an AI chatbot with a social media platform, such as WhatsApp, is being used in a few SMEs. While most SME experts highlighted technical complexity as a barrier, the lack of clarity in return on investment emerged as a primary concern. The ROI is not just a financial link, but also a measure of business feasibility and operational fit. An SME owner questioned whether the AI solution truly addresses the core workflow problem they face on a daily basis. This clearly shows that the AI implementation strategy is not well-connected with the business strategies of SMEs and other business entities. Although there is a clear strategy from MTCIT, AI is part of the national strategy, and SMEs are very much included in the strategy framework; however, SME owners and staff are not well-connected to this strategy. The current scenario is based on AI vendors driving AI-based use cases and solutions, as these vendors and their partners consider it a business opportunity. This approach is a reactive approach that limits long-term

integration and knowledge base building. The AI implementation approach should be based on a structured method so that the ecosystem can be developed, and SMEs will not fall into cycles of experimentation without a proper roadmap and scalability. The other significant issues among the SME workforce are trust, as staff are not trusting AI its job fear for SME staff as well as SME owners, who fear that the business will be reduced due to AI implementation across the industry, however, several experts indicate about output of the process and customer engagement specially like customer facing decisions like claims validation, the SME owner stressed the need for human intervention even in automated processes. Such concerns about AI implementation are consistent with global trends.

There is limited alignment between the business requirements and the available technology. Most participants have confirmed that SMEs face issues with infrastructure, existing tools, and system advancement (Ghobakhloo et al., 2022; Sharma et al., 2022; Wanyan et al., 2025). A few SMEs are trying to find a free demo or pilot project; however, long-term investment in AI-based solutions is currently very low. The key message here is to address these challenges, and the SME can join forces with local telecommunication companies for low-cost AI solution development(OECD, 2023), skill development, and regulatory guidance. When we align this to AI adoption literature, these key points provide the idea that SME in emerging markets face compound challenges, skill, technical, cultural, financial, and regulatory; however, global enterprises exploring AI with autonomous decision-making capabilities. Insurance sector SMEs in Oman are still struggling for infrastructure upgrades to make the base for automation.

It requires strategies and frameworks that reflect the stepwise approach of innovation development typical infrastructurally and financially constrained setting (Zhang & Lu, 2024). From a theory perspective, it is also clear that AI implementation is not isolated; it requires transformation across people, process, and policies (MTCIT, 2024). A common point among all participants is that trust is in both the reliability of AI technology and the credibility of the supporting ecosystem. SME authority and national telecommunication companies are seen as influencers of AI technology in the adoption journey of SMEs (Berube et al., 2021; Nair & Srivastava, 2025). The main role of these influences is to simplify regulation, provide AI implementation environments, and offer a low-cost solution to facilitate early adoption (van Bekkum et al., 2024; OECD, 2023). The key point is that SMEs and their resources should not just be viewed as passive technology recipients, but they need to create AI use cases based on their requirements. The regulatory policy, SMEs' strategies, and vendor strategies must be part of a co-creation framework (Bhalerao et al., 2022) that empowers the workforce and SMEs to shape AI according to their workflows, capabilities, and customer requirements, which contributes to the sustainable AI implementation. These insights from the Oman market, along with trends observed in other countries such as India, Indonesia, and regional countries facing similar challenges, include limited digital infrastructure, high-cost sensitivity, and regulatory clarity (Sutrisno & Yuliana, 2023).

Theoretical contribution

The contribution of this study to the literature on AI adoption and implementation is based on the extension of the approach focusing on insurance sector SMEs in Oman, which is not explored much in the context of emerging markets.

Practical implications

Key insights from analysis for SME owners, policymakers, telecommunication companies, and vendors: Regulatory authorities should address the regulatory awareness of Oman Vision 2040, the national strategy, roadmap, and AI Strategy, as outlined by MTCIT. The SMEs don’t know how to comply with the regulation and how they be inclusive in policy and roadmap (MTCIT, 2024). Simplified regulatory guidance, such as workflow, compliance statements, checklists, or sandbox environments, will make the environment more SME- and business-friendly, thereby increasing their confidence (OECD, 2023).

Telecommunication companies, AI vendors, and partners should collaborate on low-cost, tailored use cases, a co-creation approach, and low-code tools to achieve better ROI and reduce entry barriers for SMEs. This is particularly important for SMEs, as they often face challenges such as obsolete systems, limited digital infrastructure, a skilled workforce, and a low budget (Gaur et al., 2021; Crockett et al., 2021).

Future research should explore case studies of full-scale AI implementation in various sectors, including insurance, logistics, and manufacturing, to provide a detailed analysis of AI use by SMEs in Oman within a broader context. The other area of research should focus on the national strategy and regulatory policy role in AI adoption sandboxes and how public-private partnerships impact AI adoption in SMEs.

Conclusion

AI applications have brought significant efficiency gains to various organisations, but AI has not contributed similarly to SMEs. Despite SMEs' critical role, they are managed by traditional processes and technologies. Through this research on SMEs in Oman's insurance sector, we examine the use of AI and the challenges they face. This research provides an in-depth examination of how various factors impact the use of AI by SMEs. This case focuses on the use of AI by SMEs, specifically in document processing, customer care chatbots, and the integration of chatbots with social media platforms. Where SMEs' use of AI can automate most aspects of business processes, provided the AI ecosystem offers the required support for SMEs, which includes SMEs, users, vendors, governments, and large organisations. Along with the potential benefits of AI for SMEs, we also uncover that SMEs have concerns about AI skills, IT infrastructure, and regulatory compliance. Our findings provide both theoretical and practical contributions. Theoretically, we advance the discourse on AI for SMEs by identifying the critical themes on AI and SMEs. Practically, we provide a roadmap for SMEs looking to integrate AI into their business processes. This case highlights areas for future research on the impact and sustainable implementation of AI by SMEs.

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