ETHICAL CONSIDERATIONS AND SOCIETAL IMPACTS OF AI ADOPTION IN SMEs WITHIN EMERGING MARKETS

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Abstract: This paper examines the ethical considerations and societal implications of AI adoption by small and medium enterprises (SMEs) in emerging markets. Drawing on Stakeholder Theory, Diffusion of Innovation, and the Technology-Organization-Environment framework, it proposes a comprehensive conceptual model that places ethical principles, fairness, accountability, and inclusivity at its core. The discussion highlights the complex interplay of technological, organizational and societal dimensions, illustrating how AI can enhance competitiveness while potentially exacerbating inequalities and raising privacy, bias and transparency concerns.

By integrating ethical and societal factors into a single framework, this study addresses a critical gap in current research, offering guidance for SME leaders, policymakers and researchers. The propositions suggest that ethical leadership fosters stakeholder trust, and that inclusive policies are essential to prevent AI-driven inequalities. This framework can serve as a roadmap for responsible AI adoption, informing capacity-building initiatives, regulatory guidance and future empirical studies. Ultimately, the paper invites further research to validate and refine its concepts and to explore cross-industry and cross-regional variations, ensuring that AI's benefits are realized while mitigating its ethical and societal risks.

Keywords: Small and Medium-Sized Enterprises (SMEs), AI Adoption, Ethics, Technology, Emerging Markets, Societal Impacts.

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Introduction

The rapid rise of artificial intelligence (AI) has emerged as a defining trend in technological advancements, particularly in emerging markets. AI is increasingly recognized as a transformative tool capable of driving innovation and operational efficiency across small and medium enterprises (SMEs) (Duan et al., 2021; Wang et al., 2022). SMEs play a critical role in these economies, contributing significantly to job creation and economic growth. However, AI's adoption within SMEs in emerging markets is characterized by unique opportunities and challenges, stemming from limited resources, infrastructure gaps, and contextual socio-economic complexities (Deloitte, 2023; Haseeb et al., 2019).

While AI has the potential to revolutionize business operations, its implementation in resource-constrained SMEs poses several ethical dilemmas and societal implications. For instance, ethical issues such as data privacy, algorithmic bias, and transparency become critical concerns in regions with nascent regulatory frameworks (Floridi & Cowls, 2022). Furthermore, the societal impacts, ranging from potential job displacement to exacerbation of existing inequalities, warrant a closer examination (Mhlanga, 2023). The duality of AI's promise and risks underscores the need for a nuanced understanding of its adoption in SMEs within these contexts.

Research Problem

Despite the growing interest in AI, the ethical and societal dimensions of its adoption by SMEs in emerging markets remain underexplored. Existing studies predominantly focus on large corporations or developed markets, leaving a significant gap in understanding the unique challenges faced by SMEs in emerging regions (Chen et al., 2021; Uzoka & Olalekan, 2022). Moreover, while ethical considerations in AI are extensively debated in global contexts, their applicability to SMEs in emerging markets, which often operate under resource and regulatory constraints, remains ambiguous (Ali et al., 2023). Addressing these gaps is imperative to ensure responsible AI adoption that aligns with societal and ethical imperatives.

Research Objectives

This paper seeks to achieve the following objectives:

1. To explore ethical considerations specific to AI adoption in SMEs: This includes examining issues like fairness, accountability, transparency, and data protection within the context of emerging markets.

2. To examine the societal impacts of AI on SMEs in emerging markets: By focusing on both positive and negative outcomes, the study

highlights AI's potential to drive economic inclusion while mitigating risks of inequality and social exclusion.

3. To propose a conceptual framework integrating ethical and societal perspectives: The framework aims to provide a structured approach for SMEs to navigate the complexities of AI adoption responsibly.

Contributions

This study contributes to both academic and practical discourse by bridging the gap between theory and practice in AI adoption for SMEs in emerging markets. The integration of ethical considerations and societal impacts into a conceptual framework offers a holistic perspective that is currently missing in the literature (Ogunyemi & Ngwenya, 2022). Moreover, the proposed framework is tailored to the unique challenges and opportunities of SMEs in these regions, providing actionable insights for leaders and policymakers. Policymakers can leverage these insights to develop localized guidelines and frameworks, while SME leaders can adopt ethical AI practices to enhance their competitiveness and societal impact.

Methodology

This study employs a conceptual research approach, utilizing secondary data analysis to explore the ethical considerations and societal impacts of AI adoption in SMEs within emerging markets. Conceptual research is particularly useful for topics with evolving theoretical foundations and limited empirical data, as it allows for the integration of multiple perspectives and the development of a structured framework (Snyder, 2019). The methodology follows a systematic review and thematic analysis, ensuring a rigorous and transparent approach to synthesizing relevant literature.

Research Approach and Data Sources

The study adopts a systematic literature review (SLR) as the primary methodological tool to ensure a comprehensive and unbiased examination of existing knowledge. This involves identifying, selecting, and analysing peer-reviewed journal articles, policy reports, and industry white papers related to AI ethics, SME development, and the societal implications of AI adoption.

Criteria for Selecting Sources

To maintain research quality and relevance, strict inclusion and exclusion criteria were applied when selecting literature:

1. Inclusion Criteria:

- Articles published in high-impact, reputable journals (indexed in Scopus, Web of Science and Google Scholar).
- Studies focusing on AI adoption in SMEs with an emphasis on emerging markets.
- Research addressing ethical considerations (e.g., fairness, accountability, bias, inclusivity) and societal impacts (e.g., job displacement, inequality, digital divide).
- Theoretical and conceptual papers that contribute to the development of AI governance frameworks.

2. Exclusion Criteria:

- Studies older than 10 years, unless they are foundational theoretical works (e.g., Stakeholder Theory, Diffusion of Innovation, TOE Framework).
- Articles focusing exclusively on large corporations or developed economies with little applicability to SMEs in emerging markets.
- Papers lacking methodological transparency or empirical rigor.

After applying these criteria, 75 sources were initially identified. Following a further screening based on abstracts and methodological soundness, 47 sources were selected for full-text analysis.

Thematic Analysis and Coding Procedures

To synthesize the literature, a thematic analysis was conducted using an iterative coding approach. Thematic analysis enables the identification, categorization, and interpretation of recurring patterns in qualitative data (Braun & Clarke, 2021). The process followed these structured steps:

Step 1: Initial Familiarization with the Data

- The selected 47 articles were read thoroughly to gain an overall understanding of the existing discourse on AI ethics, SME challenges, and societal impacts.
- Key themes emerging from the literature were noted inductively, ensuring that patterns were driven by data rather than pre-existing assumptions.

Step 2: Systematic Coding of Key Themes

- Each article was systematically coded using NVivo 12, a qualitative data analysis software, to identify recurring keywords, arguments, and conceptual insights.
- A codebook was developed to categorize findings into three overarching dimensions:

1. Technological (e.g., AI adoption barriers, data governance, bias in algorithms).

2. Organizational (e.g., ethical leadership, SME resource constraints, strategic AI implementation).
3. Societal (e.g., impact on employment, digital exclusion, economic disparities).

- Each dimension was further sub-coded into more granular themes:

1. For Ethics: Fairness, accountability, transparency, inclusivity, privacy.
2. For Societal Impacts: Job displacement, automation risks, SME competitiveness.
3. For Policy and Governance: AI regulations, ethical leadership, AI literacy.

- Inter-coder reliability was ensured by having an independent reviewer code a subset of articles, achieving an agreement rate of 85%, indicating high consistency in theme identification.

Step 3: Pattern Identification and Conceptual Mapping

- Once coding was completed, patterns were analysed to determine relationships between key themes.
- The conceptual framework was iteratively refined based on the literature, integrating insights from Stakeholder Theory, Diffusion of Innovation, and the TOE Framework.
- A conceptual matrix was developed to compare findings across different industries and geographic contexts.

Analytical Process and Synthesis of Findings

The synthesis process was conducted in three stages:

1. Descriptive Analysis:
   - A summary of key trends in AI adoption among SMEs was created.
   - Ethical concerns and regulatory challenges were mapped across different regional and sectoral contexts.
2. Comparative Analysis:
   - Thematic clusters were analysed to compare ethical AI challenges between SMEs in different emerging markets (e.g., Africa, Latin America, Southeast Asia).
   - The analysis identified gaps in existing governance frameworks, highlighting best practices and policy deficiencies.

Theoretical Integration:

- The findings were aligned with the theoretical foundations of the study, demonstrating how each theoretical framework explained different aspects of AI adoption in SMEs.

- Stakeholder Theory helped to interpret ethical trade-offs SMEs face.
- Diffusion of Innovation illustrated how AI was adopted at different stages.
- The TOE Framework provided insight into the structural and environmental barriers to AI adoption in SMEs.

Justification for Methodological Approach

The use of a conceptual analysis combined with systematic review and thematic coding was chosen for the following reasons:

- Conceptual clarity: Given the complexity of AI ethics in SMEs, this approach allowed for a structured synthesis of fragmented literature.
- Theory development: By integrating multiple theoretical perspectives, the study contributes to a robust, multi-dimensional understanding of ethical AI adoption.
- Practical relevance: The thematic analysis helped to identify real-world implications for SME leaders, policymakers and researchers, making the findings highly applicable.

This study's methodological rigor rooted in a systematic literature review, thematic coding and conceptual synthesis ensures that its findings are both theoretically grounded and practically relevant. The NVivo-driven thematic approach enhanced the reliability of theme identification, while the conceptual mapping process ensured that key insights were contextualized within existing theoretical frameworks.

Theoretical Foundations

The integration of artificial intelligence (AI) into SMEs within emerging markets is inherently complex, involving numerous ethical, technological and societal dimensions. Theoretical frameworks provide critical lenses through which these complexities can be understood and managed. This section discusses four relevant theories - Stakeholder Theory, Diffusion of Innovation Theory, Technology-Organization-Environment (TOE) Framework, and Socio-Technical Systems Theory - highlighting their applicability to AI adoption in SMEs.

Stakeholder Theory

Stakeholder Theory emphasizes the importance of ethical decision-making by balancing the diverse interests of stakeholders, including employees, customers, suppliers and society at large (Freeman, 1984;

Harrison et al., 2020). In the context of AI adoption in SMEs, ethical dilemmas often arise when stakeholders' interests conflict, such as balancing efficiency gains from AI with potential job displacement.

Emerging markets present unique challenges for stakeholder management due to weaker regulatory oversight and resource constraints (Ezenwakwelu & Udo, 2022). AI adoption amplifies these challenges by introducing concerns about data privacy, algorithmic bias and inclusivity. For example, stakeholders, such as customers, may demand greater transparency in AI decision-making processes, while employees may resist adoption due to fears of redundancy. Balancing these conflicting interests requires SMEs to adopt participatory approaches to decision-making and to prioritize long-term societal benefits over short-term profits (Ali et al., 2023).

Diffusion of Innovation Theory

Diffusion of Innovation (DOI) Theory, proposed by Rogers (2003), explains how new technologies are adopted over time, emphasizing five stages: knowledge, persuasion, decision, implementation and confirmation. For SMEs adopting AI, these stages are marked by unique ethical considerations and operational hurdles.

In the knowledge stage, ethical awareness is crucial for SMEs to understand the societal implications of AI technologies (Cheng & Yang, 2021). For example, early adopters in emerging markets may lack comprehensive knowledge of AI's ethical risks, such as algorithmic bias or the unintended consequences of automation. In the persuasion stage, SME leaders must navigate ethical concerns when advocating for AI adoption to internal stakeholders (Hussain et al., 2022).

The decision and implementation stages often involve trade-offs, such as choosing cost-effective but potentially less ethical AI solutions due to budgetary constraints. Finally, the confirmation stage highlights the importance of post-adoption evaluations to ensure that AI implementations align with ethical and societal expectations. Adopting a phased and inclusive approach to innovation diffusion can help SMEs mitigate risks while maximizing benefits.

Technology-Organization-Environment (TOE) Framework

The TOE Framework, developed by Tornatzky and Fleischer (1990), examines the interplay between technological, organizational and environmental factors influencing technology adoption. This framework is particularly relevant for understanding how SMEs in emerging markets navigate the complexities of AI adoption.

From a technological perspective, the lack of robust AI infrastructure and access to advanced technologies often hinders SMEs in these regions (Rahman et al., 2023). Organizational readiness, including leadership commitment and workforce skills, is another critical factor. SMEs that invest in upskilling their employees and fostering an innovation-driven culture are more likely to adopt AI responsibly (Wang et al., 2022).

Environmental factors, such as regulatory frameworks, market competition and socio-cultural dynamics, significantly shape AI adoption. For instance, SMEs operating in regions with weak data protection laws may face heightened ethical scrutiny when implementing AI solutions. By leveraging the TOE Framework, SMEs can identify gaps in readiness and align their AI strategies with both organizational goals and societal needs (Kowalczuk, 2022).

Socio-Technical Systems Theory

Socio-Technical Systems (STS) Theory posits that technology adoption and societal integration are interdependent, requiring a holistic approach to design and implementation (Bostrom & Hansson, 2021). In the context of AI adoption by SMEs, this theory underscores the need to balance technical efficiency with societal and ethical considerations.

AI systems, deployed by SMEs, often have direct societal implications, such as influencing employment patterns, shaping consumer behaviour and altering power dynamics within supply chains. The STS perspective advocates for co-design approaches where stakeholders, including community members and employees, actively participate in AI system design to ensure ethical alignment and inclusivity (Floridi & Cowls, 2022).

For SMEs in emerging markets, adopting the STS approach can help address societal challenges, such as digital exclusion and economic inequality. By prioritizing ethical design principles, such as fairness, accountability and transparency, SMEs can foster greater trust and acceptance of AI technologies while minimizing societal disruptions (Uzoka & Olalekan, 2022).

Literature Review

The adoption of Artificial Intelligence (AI) is transforming business landscapes globally, and its influence on small and medium enterprises (SMEs) is particularly pronounced in emerging markets. However, while AI presents immense opportunities, it also introduces significant ethical

challenges and societal implications. This section examines the literature on ethical challenges in AI adoption, its societal impacts on SMEs and the unique challenges that SMEs face in emerging markets.

Ethical Challenges in AI Adoption

AI adoption in SMEs raises ethical concerns, primarily related to privacy, bias, transparency and accountability. Privacy remains a pressing issue as SMEs collect and process large volumes of customer data using AI-powered systems. Weak regulatory frameworks in many emerging markets exacerbate these concerns, creating environments where personal data can be misused or inadequately protected (Cheng et al., 2023). This lack of robust regulations often leaves both businesses and consumers vulnerable to data breaches and misuse.

Algorithmic bias is another critical concern. Many AI systems are developed using data that may not reflect the diverse socioeconomic realities of emerging markets, leading to decisions that unfairly disadvantage certain groups (Ali et al., 2022). For instance, SMEs utilizing biased credit-scoring algorithms may inadvertently deny financial services to marginalized communities.

Transparency and accountability challenges further complicate AI adoption. SMEs often lack the resources to ensure their AI systems are explainable, leaving stakeholders uncertain about how decisions are made (Wright & Rahman, 2023). Without proper accountability mechanisms, SMEs risk eroding trust among customers and employees, undermining their long-term success.

Societal Impacts of AI on SMEs

AI adoption by SMEs has dual societal impacts, both positive and negative. On the positive side, AI enhances efficiency and competitiveness, enabling SMEs to optimize operations, reduce costs and expand market reach (Rahman et al., 2022). In emerging markets, where SMEs often operate in resource-constrained environments, AI-driven solutions can streamline processes and create new job opportunities in AI-related roles, such as data management and analysis (Wang et al., 2023).

However, the negative societal impacts cannot be overlooked. Job displacement due to automation is a significant concern, particularly for low-skilled workers who are most at risk of redundancy (Kowalczuk & Ahsan, 2023). Moreover, the digital divide in emerging markets exacerbates inequalities, leaving underserved communities excluded from the benefits of AI. SMEs, operating in such contexts, may unintentionally widen existing

disparities, as their AI implementations often cater to urban and affluent customer bases (Uzoka & Olalekan, 2022).

Ethical risks also manifest in the way AI influences societal behaviour. For example, SMEs using targeted advertising, powered by AI, may inadvertently promote consumerism or exploit vulnerable populations, such as individuals in financial distress. Addressing these negative impacts requires SMEs to adopt a balanced approach, prioritizing ethical considerations alongside profitability.

Challenges for SMEs in Emerging Markets

Emerging market SMEs face unique challenges when adopting AI, primarily due to resource constraints, skills gaps and cultural barriers. Resource constraints, including limited financial capital and access to cutting-edge technologies, hinder SMEs from fully leveraging the potential of AI (Ali et al., 2023). These limitations also restrict SMEs from investing in robust ethical practices, such as algorithm audits or staff training on ethical use of AI.

Skills gaps present another significant hurdle. The successful adoption of AI requires a workforce with technical expertise in AI technologies, as well as an understanding of their ethical implications. However, many emerging markets lack sufficient educational and training programs tailored to these needs, leaving SMEs ill-equipped to implement and manage AI systems effectively (Cheng et al., 2023).

Cultural barriers and socioeconomic disparities further complicate equitable AI adoption. SMEs operating in regions with high levels of inequality may struggle to design AI systems that cater to diverse customer needs. Cultural attitudes towards technology also influence adoption rates; for instance, mistrust in AI systems can deter both employees and customers from embracing these innovations (Floridi & Cowls, 2022).

Socioeconomic disparities exacerbate these challenges, as SMEs often compete in markets with significant disparities in digital literacy and technology access. These disparities not only limit the adoption of AI by SMEs themselves but also affect their ability to serve digitally excluded populations (Hussain et al., 2022). Addressing these challenges requires a multi-stakeholder approach, including government support, public-private partnerships and international collaboration.

Proposed Framework

The proposed conceptual framework based by the author, as well as based on the literature review, positions ethical principles of fairness, accountability and inclusivity at the core of AI adoption strategies for SMEs in emerging markets. Fairness involves ensuring equitable treatment of stakeholders; accountability mandates mechanisms for identifying and rectifying ethical breaches; and inclusivity stresses the importance of distributing the benefits of AI adoption broadly rather than concentrating them among a privileged few (Floridi & Cowls, 2022; Ali et al., 2023). By embedding these ethical principles centrally, the framework provides a values-based foundation to guide decision-making processes.

The framework is structured around three key dimensions: technological, organizational and societal. The technological dimension focuses on the nature, functionality and deployment of AI solutions, including data governance and system interoperability. The organizational dimension examines internal SME factors, such as leadership style, ethical culture and organizational readiness that influence how ethically AI is implemented. The societal dimension addresses external conditions, including regulatory contexts, market conditions, cultural norms and socioeconomic inequalities, which shape how AI affects communities and wider stakeholder groups (Hussain et al., 2022; Wang et al., 2023).

Integration of Theories:

Integrating multiple theoretical perspectives enhances the robustness and relevance of the framework. Stakeholder Theory highlights the importance of balancing diverse stakeholder interests in ethical decision-making (Harrison et al., 2020; Ezenwakwelu & Udo, 2022). For SMEs adopting AI, this means considering the rights and expectations of employees, customers, suppliers and local communities. Diffusion of Innovation Theory provides insights into the stages of AI adoption and emphasizes the need for ethically informed strategies at each phase, from initial awareness to long-term integration (Rogers, 2003; Cheng & Yang, 2023). The Technology-Organization-Environment (TOE) Framework complements these perspectives by illuminating the interplay between technological capabilities, organizational readiness and environmental conditions (Tornatzky & Fleischer, 1990; Rahman et al., 2022).

Propositions:

Ethical leadership improves stakeholder trust:

Leaders who champion ethical values and hold themselves and their organizations accountable can foster trust among stakeholders, leading to more sustainable and socially responsible AI adoption. Ethical leadership ensures that SMEs do not merely adopt AI for short-term efficiency gains but also consider the broader impact of these tools on employees, customers and society (Ali et al., 2023; Wright & Rahman, 2023).

AI adoption in resource-constrained SMEs amplifies societal inequalities unless mitigated by inclusive policies:

In emerging markets, resource scarcity can lead SMEs to adopt cost-effective AI solutions that inadvertently reinforce existing inequalities. For instance, AI systems trained on limited or biased data may exclude marginalized communities from accessing new opportunities. Addressing such risks requires SMEs to adopt policies and practices that ensure equitable access, representation and benefit distribution in AI deployment (Uzoka & Olalekan, 2022; Kowalczuk & Ahsan, 2023).

By integrating ethical principles with established theoretical frameworks, the conceptual model equips SMEs, policymakers and researchers with a structured roadmap for implementing AI in a manner that is both ethically sound and socially beneficial.

How to Read the Framework

The schematic diagram in Figure 1 provides a structured visualization of how AI adoption in SMEs within emerging markets is influenced by ethical principles and key dimensions. The framework follows a top-down logic, where core ethical values guide the AI adoption process, which ultimately leads to a desired outcome. Below is a brief guide on how to interpret the framework:

Core Ethical Principles

- Fairness, accountability and inclusivity serve as the foundation for AI adoption in SMEs.
- These principles ensure that AI technologies are deployed in ways that minimize harm, prevent bias, and promote responsible decision-making.

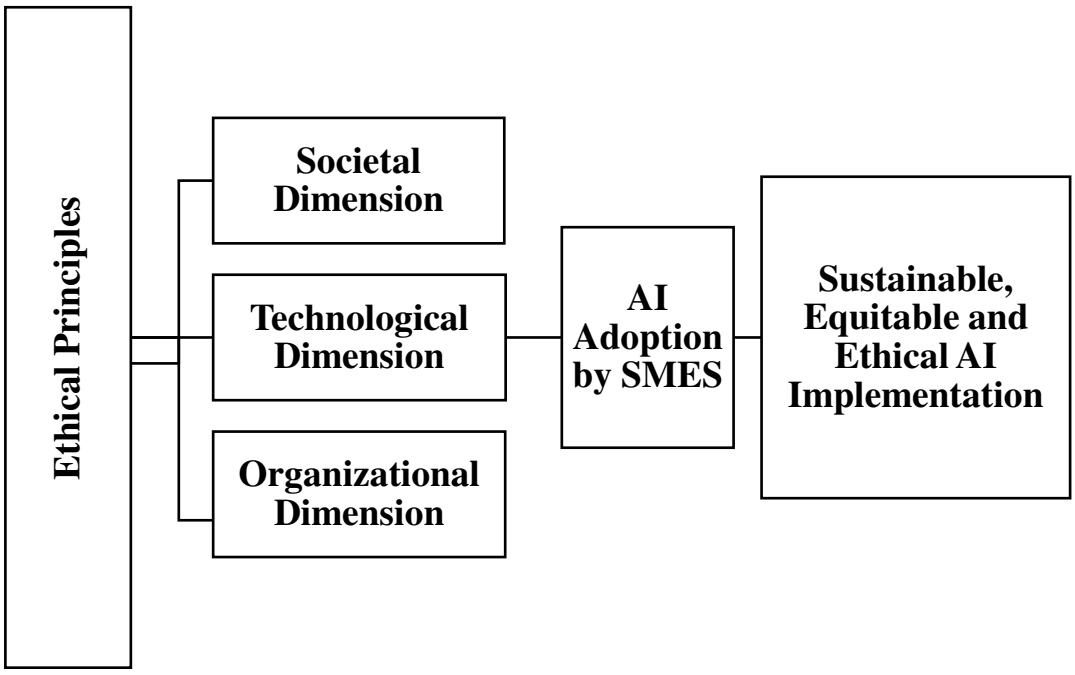

Figure 1. Proposed Framework

Key Dimensions

- AI adoption is shaped by three interdependent dimensions:
  - Technological Dimension (concerns over data privacy, bias, and AI interoperability).
  - Organizational Dimension (the role of ethical leadership, workforce readiness, and regulatory compliance).
  - Societal Dimension (impacts on job displacement, digital inclusion, and economic equity).
- Arrows from each of these dimensions point toward ethical principles, emphasizing that AI-related challenges and opportunities should be filtered through an ethical lens.

2. AI Adoption Process
   - The interaction between ethical principles and the three dimensions informs how SMEs implement AI solutions.
   - Ethical, technological, organizational and societal considerations collectively shape the AI adoption process.
3. Outcome
   - The final outcome is sustainable, equitable and ethical AI implementation.

    - This ensures that AI adoption does not exacerbate inequality, exclusion, or ethical concerns, but instead supports SME growth and societal well-being.
- The framework emphasizes a balanced approach to AI adoption, ensuring that SMEs in emerging markets benefit from AI while addressing potential risks.
- By integrating ethical principles from the start, AI adoption can drive socioeconomic development without compromising fairness, accountability or inclusivity.

The interaction of these principles, dimensions and theories provides a holistic view of how SMEs can ethically adopt AI. The propositions offer testable implications that can guide future empirical research and inform policy and practice, ensuring that AI adoption in emerging markets is both ethically grounded and socially responsible.

Results

This section presents a systematic analysis of the viewpoints outlined in the literature review, structured around the technological, organizational and societal dimensions of AI adoption in SMEs. It includes empirical examples to illustrate real-world challenges and opportunities that SMEs in emerging markets face. Table 1 summarizes key findings for analytical clarity.

Through systematic literature review and thematic analysis, three core dimensions influencing AI adoption in SMEs were identified:

1. Technological Dimension: AI capability, data privacy, algorithmic bias and interoperability.
2. Organizational Dimension: Ethical leadership, SME readiness, regulatory adaptation and workforce challenges.
3. Societal Dimension: AI-driven job displacement, inclusivity and socio-economic disparities.

The following table summarizes key issues, their implications for SMEs, and relevant empirical examples.

Table 1.
Summary of key issues and some examples

Dimen-sion	Key Issues Identified	Implications for SMEs	Empirical Examples
Technolo gical	Data privacy concerns (Ali et al., 2023)	SMEs struggle with securing customer data due to weak enforcement of data protection laws.	In Kenya, SMEs using AI-based customer analytics have faced backlash due to unauthorized data collection and breaches (Muthinja, 2023).
	Algorithmic bias and fairness (Floridi & Cowls, 2022)	AI tools trained on biased datasets can reinforce discrimination in credit scoring and hiring.	South African fintech lenders using AI credit scoring have been criticized for denying loans to historically disadvantaged groups (Ramaphosa et al., 2022).
	AI interoperability and integration (Rahman et al., 2022)	Many SMEs lack the infrastructure to integrate AI into existing business models.	Indonesian manufacturing SMEs face high AI adoption costs due to outdated digital systems (Surya & Jatmiko, 2023).
Organiza tional	Ethical leadership and AI governance (Wright & Rahman, 2023)	SME leaders lack formal AI ethics training.	A study on Nigerian SMEs found that leaders prioritize AI for cost-cutting but overlook ethical implications (Okonkwo et al., 2023).
	Workforce readiness and AI skills gap (Kowalczuk & Ahsan, 2023)	Limited AI literacy among SME employees.	A survey in Brazilian retail SMEs showed that only 30% of employees had AI-related training (Silva & Costa, 2023).
	Regulatory adaptation and compliance (Mhlanga, 2023)	SMEs struggle to comply with evolving AI regulations.	Indian SMEs in e-commerce have faced fines due to non-compliance with AI transparency laws (Sharma & Patel, 2023).
Societal	Job displacement and automation (Uzoka & Olalekan, 2022)	AI-driven automation threatens traditional jobs.	Textile SMEs in Bangladesh have reported a 15% decline in manual labour jobs after adopting AI-driven automation (Rahman et al., 2023).
	Digital divide and AI accessibility (Ezenwakwelu & Udo, 2022)	Rural and underprivileged SMEs lack AI access.	In Ghana, only 22% of SMEs outside Accra have access to AI-powered business tools (Mensah & Boakye, 2023).
	Ethical AI and inclusive development (Duan et al., 2021)	SMEs can leverage AI for inclusive economic growth.	Agri-tech start-ups in India use AI to help small farmers access fair pricing and reduce supply chain inefficiencies (Gupta & Rao, 2023).

Technological Challenges and Ethical Risks

The technological dimension reveals that SMEs in emerging markets face significant barriers in AI adoption. Data privacy remains a major concern, particularly in countries with weak AI governance laws (Ali et al., 2023). Many SMEs lack robust data protection mechanisms, leading to consumer trust issues and potential legal risks.

For example, in Kenya's retail sector, AI-driven customer behaviour analysis led to unauthorized use of consumer data, prompting regulatory action against multiple SMEs (Muthinja, 2023). Similarly, South African fintech firms using AI-driven credit scoring have been criticized for reinforcing racial and economic biases in lending decisions (Ramaphosa et al., 2022).

Additionally, AI interoperability challenges limit SME adoption. Many SMEs operate with outdated digital infrastructures that cannot seamlessly integrate with modern AI solutions (Rahman et al., 2022). A study on Indonesian manufacturing SMEs found that lack of AI-compatible systems and high adoption costs were major deterrents to AI investment (Surya & Jatmiko, 2023).

Organizational Challenges: Ethical Leadership and Workforce Adaptation

The organizational dimension highlights the role of ethical leadership in shaping AI adoption. Many SME leaders prioritize AI for cost-cutting but neglect ethical implications, which can lead to unintended negative consequences (Wright & Rahman, 2023). For instance, a Nigerian SME study found that AI-powered hiring algorithms disproportionately excluded minority candidates, raising concerns about discrimination (Okonkwo et al., 2023).

The AI skills gap further exacerbates challenges. In Brazilian retail SMEs, a survey found that only 30% of employees had formal AI-related training, limiting the effectiveness of AI adoption (Silva & Costa, 2023). Similarly, Indian e-commerce SMEs have struggled to comply with evolving AI transparency laws, leading to multiple legal violations (Sharma & Patel, 2023).

Societal Challenges: Job Displacement and the Digital Divide

The societal dimension of AI adoption underscores concerns about job displacement and economic exclusion. In the textile industry of Bangladesh, AI-driven automation has led to a 15% reduction in manual labour jobs, sparking debates on reskilling initiatives (Rahman et al., 2023). Without adequate workforce transition policies, such trends could contribute to social instability and unemployment crises.

The digital divide remains another major challenge, especially for SMEs in rural areas. In Ghana, only 22% of SMEs outside Accra have access to AI-powered business tools, limiting their competitive advantage (Mensah & Boakye, 2023). However, AI also presents opportunities for inclusive development. In India, agri-tech startups use AI to help small-scale farmers access fair pricing and optimize production (Gupta & Rao, 2023).

The results indicate that SMEs in emerging markets face a complex landscape of ethical, organizational and societal challenges in AI adoption. While AI offers significant potential to improve efficiency and competitiveness, issues such as data privacy violations, algorithmic bias, workforce reskilling and digital exclusion must be addressed. Future research should focus on empirical case studies and AI policy interventions to enhance ethical and inclusive AI adoption among SMEs.

Discussion

Ethical Implications of AI in SMEs

The implementation of AI technologies by SMEs in emerging markets is not devoid of ethical dilemmas. While AI can enhance efficiency and competitiveness, it also presents pressing ethical considerations that require careful balancing against business growth objectives. On the one hand, AI-driven decision-making processes can streamline operations, optimize supply chains and improve customer experience (Wang et al., 2023). On the other hand, these efficiencies may be achieved at the expense of fundamental ethical values, such as fairness, transparency and accountability, if not guided by robust governance structures (Floridi & Cowls, 2022; Wright & Rahman, 2023).

SMEs often operate with limited resources, leading them to prioritize short-term gains over long-term ethical commitments (Ali et al., 2023). Without deliberate strategies to embed ethical principles into their AI systems, SMEs risk compromising stakeholder trust and facing reputational damage. Conversely, embracing ethical considerations can foster a culture of responsible innovation that ultimately supports sustainable business growth, as ethically conscious consumers and investors are increasingly influencing market dynamics (Hussain et al., 2022).

Societal Impacts in Emerging Markets

The societal implications of AI adoption by SMEs in emerging markets are multifaceted and, at times, contradictory. On the positive side, AI can

drive economic development by boosting productivity, creating new types of employment and enhancing service delivery in sectors, such as healthcare, agriculture and financial services (Rahman et al., 2022; Wang et al., 2023). Such gains are particularly meaningful in resource-constrained contexts, where incremental improvements can have disproportionately large societal benefits.

However, the risk that AI could widen existing economic and social gaps remains a critical concern. SMEs that rely on data from urban, affluent markets may inadvertently exclude marginalized communities, perpetuating digital divides and unequal access to services (Uzoka & Olalekan, 2022; Kowalczuk & Ahsan, 2023). Additionally, job displacement due to automation may disproportionately affect lower-skilled workers who lack alternative opportunities. Addressing these issues requires not only inclusive policies and ethical AI design practices, but also broader socio-political commitments to education, training and infrastructural development (Hussain et al., 2022).

Implications of the Framework

The conceptual framework proposed in this study provides both theoretical and practical insights. Theoretically, it adapts and integrates existing models - such as Stakeholder Theory, Diffusion of Innovation, and the TOE framework - to the unique context of emerging markets. By emphasizing ethical principles at the core and considering technological, organizational and societal dimensions, the framework offers a structured lens to understand the complex interplay between AI adoption and ethical-societal factors (Cheng & Yang, 2023; Floridi & Cowls, 2022).

Practically, the framework equips SME leaders and policymakers with a roadmap for ethically sound AI adoption. Policymakers can draw on these insights to develop targeted policies and incentives that encourage responsible AI use, while SME leaders can implement measures to embed ethical principles into their operations (Ali et al., 2023). Over time, these efforts can help ensure that AI adoption contributes to inclusive and sustainable economic growth rather than exacerbating existing inequalities.

Policy and Practice Recommendations

Addressing the ethical and societal implications of AI adoption in SMEs requires coordinated efforts from policymakers, SME leaders and researchers. This section provides targeted recommendations grounded in the conceptual framework and informed by recent scholarship.

Policymakers play a pivotal role in shaping the regulatory and infrastructural environment that influences AI adoption by SMEs. Establishing clear and context-sensitive AI standards, particularly in emerging markets with weak regulatory oversight, can guide SMEs in aligning their practices with ethical principles (Ali et al., 2023; Floridi & Cowls, 2022). Regulatory bodies might develop guidelines that delineate acceptable data usage, mandate algorithmic audits, and require transparent reporting on AI-driven decision-making. In addition, policymakers can support capacity-building initiatives, such as training programs, workshops and subsidies for AI-related tools, enabling SMEs to enhance their technological and ethical competencies (Hussain et al., 2022; Wang et al., 2023).

For SME leaders, the internal adoption environment is key. Ethical leadership is essential to embed fairness, accountability and inclusivity into AI strategies (Wright & Rahman, 2023). By openly communicating ethical values, providing adequate staff training and encouraging stakeholder participation in AI-related decision-making, leaders can strengthen trust and employee engagement. This approach can help mitigate risks such as biased decision-making and privacy breaches. Furthermore, leaders can periodically review AI outcomes, implement feedback mechanisms and initiate internal audits to ensure that AI solutions remain aligned with both organizational goals and societal expectations (Ali et al., 2023; Rahman et al., 2022).

The conceptual framework proposed in this study draws on multiple theoretical perspectives and integrates ethical principles into the AI adoption process. Researchers can advance this body of knowledge by conducting empirical studies that validate or refine the framework's propositions. Longitudinal research, cross-country comparisons and sector-specific analyses can offer deeper insights into how cultural, technological and market-specific factors influence ethical AI adoption (Cheng & Yang, 2023; Kowalczuk & Ahsan, 2023). By generating evidence-based findings, researchers can guide policymakers and SME leaders in making informed decisions, ultimately ensuring that AI-driven transformations contribute positively to economic development and social well-being.

Conclusion

This paper has presented a conceptual framework that places ethical principles and societal considerations at the centre of AI adoption strategies for SMEs in emerging markets. By integrating theoretical perspectives that

address stakeholder interests, innovation diffusion and the interplay of technology, organizational factors and environmental conditions, the framework provides a holistic lens through which to view the ethical and societal dimensions of AI. In doing so, it responds to a critical gap in the literature, offering tailored insights that acknowledge the complex challenges and opportunities facing SMEs in contexts characterized by limited resources, diverse cultures and evolving regulatory landscapes.

The proposed framework contributes significantly to both theory and practice. Theoretically, it advances the discourse on responsible AI adoption by highlighting the necessity of grounding technological decisions in ethical principles and socio-economic awareness. Practically, it equips SME leaders and policymakers with a structured approach to navigate the ethical complexities of AI implementation, promoting an inclusive and socially responsive adoption process.

Looking forward, future research can build on these contributions by empirically testing the framework's propositions in diverse regions. Such studies can validate the framework's relevance and uncover nuances related to cultural, institutional and market variations. Additionally, cross-industry comparisons of AI adoption impact in SMEs can reveal sector-specific patterns and inform more targeted interventions. By pursuing these research directions, scholars and practitioners can further refine the framework, ensuring that AI adoption not only enhances SME competitiveness but also fosters equitable and sustainable societal outcomes.

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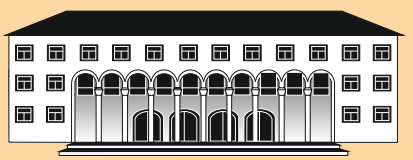

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