

Artificial Intelligence Readiness Among Small and Medium Enterprises: A Survey Based Assessment Framework

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Abstract

Artificial Intelligence (AI) has become an essential technology for improving business efficiency and competitiveness. However, many Small and Medium Enterprises (SMEs) continue to face challenges in adopting AI due to financial limitations, lack of technical expertise, and uncertainty regarding return on investment. This demonstration study proposes an AI Readiness Framework and presents fictional survey data from 150 SMEs to illustrate how such a study may be structured. The findings indicate that while business leaders recognize the strategic importance of AI, implementation readiness remains moderate, emphasizing the need for affordable AI solutions, employee training, and organizational planning.

Word Count: 220

1. Introduction

Artificial Intelligence is transforming business operations across manufacturing, retail, healthcare, education, and service industries. SMEs contribute significantly to employment and economic growth but often lag behind larger organizations in technology adoption. Although awareness regarding AI has increased substantially, implementation barriers continue to restrict widespread adoption.

The objective of this study is to evaluate AI readiness using four major dimensions:

- Organizational Awareness
- Digital Infrastructure
- Employee Skills
- Investment Readiness

2. Objectives

The study aims to:

- Measure awareness of AI among SMEs.
- Identify barriers preventing AI adoption.
- Assess organizational readiness.
- Recommend strategies for successful implementation.

3. Methodology

Research Design

Quantitative Survey

Sample Size

150 SMEs

Business Categories

Sector	Respondents
Manufacturing	45
Retail	38
Information Technology	27
Education	20
Healthcare	12
Professional Services	8

Data Collection

Structured questionnaire using a five point Likert scale.

4. Fictional Survey Results

Table 1. Awareness of AI Technologies

Response Percentage	
Very High	28%
High	34%
Moderate	24%
Low	10%
Very Low	4%

Table 2. Major Barriers to AI Adoption

Barrier	Percentage
High Implementation Cost	41%
Lack of Skilled Employees	29%
Data Security Concerns	15%
Uncertain ROI	10%
Resistance to Change	5%

Table 3. Planned AI Investment Within Two Years

Investment Plan Percentage	
Yes	62%
No	14%
Undecided	24%

Table 4. Expected Benefits

Benefit	Mean Score (5)
Improved Productivity	4.42
Better Decision Making	4.30
Customer Service	4.18
Cost Reduction	4.01
Competitive Advantage	4.55

5. AI Readiness Index

A composite AI Readiness Index was developed using four dimensions.

Dimension	Score (%)
Awareness	82
Infrastructure	69

Dimension	Score (%)
Employee Skills	58
Investment Readiness	71

Overall AI Readiness Score: 70/100

Interpretation:

- 0 to 40: Low Readiness
- 41 to 70: Moderate Readiness
- 71 to 100: High Readiness

The fictional sample falls at the upper end of the moderate readiness category.

6. Discussion

The demonstration results suggest that SMEs generally understand the strategic importance of AI and expect improvements in productivity, customer service, and competitive positioning. However, organizational capability does not yet match this level of awareness. Investment costs and skill shortages remain the primary obstacles.

Organizations that already possess digital infrastructure appear more prepared to begin AI adoption, whereas businesses relying on manual processes require foundational digital transformation before implementing advanced AI solutions.

7. Recommendations

- Develop an AI adoption roadmap.
 - Invest in employee upskilling.
 - Start with low cost AI applications.
 - Strengthen cybersecurity practices.
 - Measure return on investment through pilot projects.
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8. Conclusion

Artificial Intelligence has the potential to improve operational efficiency and strategic decision making within SMEs. The fictional findings presented in this demonstration article indicate that while awareness is relatively high, practical implementation remains constrained by financial and human resource limitations. Businesses adopting a phased implementation strategy combined with workforce development are likely to achieve greater long-term success.

References

Here are **10 APA 7th edition references** that are appropriate for your demo article on AI adoption in SMEs.

1. Brynjolfsson, E., Li, D., & Raymond, L. R. (2023). *Generative AI at work*. National Bureau of Economic Research. <https://doi.org/10.3386/w31161>
2. Calvino, F., & Fontanelli, L. (2023). *A portrait of AI adopters across countries: Firm characteristics, assets' complementarities and productivity* (OECD Science, Technology and Industry Working Papers No. 2023/02). OECD Publishing. <https://doi.org/10.1787/0fb79bb9-en> (OECD)
3. European Commission. (2024). *Artificial intelligence and copyright: Use of generative AI tools to develop new content*. European Innovation Council and SMEs Executive Agency. (OECD)
4. OECD. (2021). *The digital transformation of SMEs*. OECD Publishing. <https://doi.org/10.1787/bdb9256a-en> (OECD)
5. OECD. (2025). *Generative AI and the SME workforce: New survey evidence*. OECD Publishing. <https://doi.org/10.1787/2d08b99d-en> (OECD)
6. Proietti, S., & Magnani, R. (2025). *Assessing AI adoption and digitalization in SMEs: A framework for implementation*. arXiv. <https://arxiv.org/abs/2501.08184> (arXiv)
7. Sawang, S., & Sornlertlamvanich, V. (2026). *Artificial intelligence (AI) maturity in small and medium sized enterprises: A framework of internalized and ecosystem embedded capabilities*. arXiv. <https://arxiv.org/abs/2603.08728> (arXiv)
8. World Economic Forum. (2025). *The future of jobs report 2025*. World Economic Forum.
9. Gonzalez Varona, J. M., Lopez Paredes, A., Poza, D., & Acebes, F. (2024). Building and development of an organizational competence for digital transformation in SMEs. arXiv. <https://arxiv.org/abs/2406.01615> (arXiv)
10. ISO. (2023). *ISO/IEC 42001:2023 Information technology, Artificial intelligence, Management system*. International Organization for Standardization.