

RESHAPING DIGITAL LANDSCAPES: ANALYZING THE IMPACT OF AI IN DIGITAL MARKETING STRATEGIES ON LOCAL SMES

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Abstract: This study investigates how artificial intelligence (A.I.) influences digital marketing strategies for small and medium-sized enterprises (SMEs) in local markets. Study investigates the effect of artificial intelligence (AI) tools on enhancing sales process efficiency in small and medium-sized enterprises (SMEs). Statistical analyses, including ANOVA and regression, reveal a strong positive relationship between AI adoption and improved sales efficiency. The findings offer valuable insights for SMEs aiming to gain a competitive edge through AI, with a recommendation for further research into specific AI applications that optimize efficiency and drive business growth. Through a literature review, we examine the integration of AI technologies into SMEs' digital marketing efforts and assess the opportunities and challenges associated with AI adoption in this sector. Our findings reveal the evolving landscape of digital marketing strategies among local SMEs, highlighting trends, techniques, and implications of A.I. implementation. We explore A.I.'s role in transforming digital marketing practices, including personalized content delivery, predictive analytics, and automated customer service. Moreover, our analysis sheds light on SMEs' unique challenges when adopting A.I. technologies, such as resource limitations, skill gaps, and data privacy issues. Despite these hurdles, SMEs acknowledge A.I.'s importance in enhancing their digital presence and driving business growth in today's competitive digital marketplace. Our research aims to inform strategic decision-making and empower SMEs to capitalize on the opportunities A.I. presents in the digital age. Ultimately, we hope to contribute to a more nuanced understanding of how A.I. can be a game-changer for SMEs striving to thrive in an increasingly digital world.

Keywords: A.I., digital marketing, SMEs, local markets, sale efficiency, personalized content

Field: Social Sciences

1. INTRODUCTION

In today's digital landscape, small and medium-sized enterprises (SMEs) in local markets face increasing pressure to adapt and innovate to remain competitive. According to (Theodoridis and Gkikas, 2019), SMEs can utilize A.I. to access faster and more cost-effective digital marketing solutions, allowing them to compete more effectively with larger companies. By employing machine learning, smaller firms can overcome resource limitations and gain valuable insights through accurate data analysis. Amid the various technological advancements fueling this shift, artificial intelligence (A.I.) stands out as a key driver in transforming digital marketing strategies for SMEs. According to (Olazo, 2022), successfully incorporating Internet marketing into a firm's operation requires proficiency in online marketing, a solid I.T. infrastructure, and a thorough understanding of how these components work together. Despite these challenges, SMEs acknowledge A.I.'s transformative potential to improve their digital presence and drive business growth in a fiercely competitive digital landscape. Moreover, our analysis indicates that SMEs need help adopting A.I. technologies, including constrained resources, skill deficiencies, and data privacy concerns. As per (Stone et al., 2020), leveraging A.I. for data analytics can set SMEs apart from larger businesses. By identifying consumer trends and creating tailored marketing campaigns, SMEs can effectively target the right audience at the right moment. According to (Alqurashi et al., 2023), our findings strongly indicate that A.I. goes beyond mere technological tools; it acts as a driving force for innovation in marketing. Artificial Intelligence (A.I.) has rapidly emerged as a transformative element in digital marketing, reshaping how companies analyze, engage, and influence their target markets. Empirical studies in A.I. and digital marketing have identified several consistent themes in scholarly research. A.I. is recognized as a versatile tool across various business applications, with experts seeing it as essential to future societal advancements (Verma et al., 2021). The introduction of A.I. to digital marketing has ushered in an era defined by data-driven insights, tailored user experiences, and automated processes (Pan et al., 2023). In marketing, A.I. is beneficial for tracking and predicting customer purchasing trends, enhancing the overall consumer experience across the buying journey (Alqurashi et al., 2023). Through AI-driven personalization, digital marketing can deliver customized content and recommendations that align closely

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with each user's preferences. Likewise, customer service and frontline interactions benefit from rational A.I. applications, such as social robots for greeting and conversational A.I. for efficient support (Huang & Roland, 2020). A primary A.I. application in digital marketing is personalized content delivery. By employing sophisticated algorithms that assess vast user datasets, marketers can offer highly customized content to match user preferences, behaviors, and demographics. This tailored approach increases user engagement, boosts conversion rates, and builds stronger brand loyalty. AI-driven tools also allow firms to adapt websites, emails, social media, videos, and other materials to meet consumer needs better. A.I.'s capabilities, like machine learning and pattern recognition, allow it to emulate human cognitive processes, making it indispensable for responsive, data-informed personalization (Theodoridis & Gkikas, 2019). AI-powered chatbots and virtual assistants are now central to customer engagement and support strategies in digital spaces. These intelligent tools handle routine inquiries, provide tailored recommendations, and assist users through the sales funnel, creating a seamless experience. Additionally, chatbots serve as effective data collection tools, reducing the need for extensive personnel and removing many customer service barriers. To remain competitive, businesses also use AI-powered dynamic pricing modules to optimize pricing strategies for their products and services. These A.I. systems enable precise, real-time pricing adjustments, even over short periods, making dynamic pricing one of the most profitable A.I. applications in marketing (J.W., 2020; Zhao et al., 2022; Rabby et al., 2021). A.I. plays an essential role in content creation, where algorithms can now produce articles, blog posts, and product descriptions from set guidelines and input data. Although human oversight remains crucial for ensuring quality and relevance, AI-powered content generation significantly accelerates creation and offers strategic insights. Content generation using A.I. has become a growing research focus. Scholars such as (Kasneji et al., 2023; Jackson et al., 2022) have explored language models like GPT-3 in automated writing and creative generation, finding that while these models achieve remarkable fluency, challenges like maintaining coherence and avoiding biases persist, pointing to areas for further improvement (Cao et al., 2023). Academic literature on A.I. in marketing can generally be categorized into four primary areas: (1) technical A.I. algorithms addressing specific marketing challenges (e.g., Chung et al., 2009, 2016; Dzyabura & Hauser, 2011, 2019), (2) consumer psychological responses to A.I. (e.g., Luo et al., 2019; Mende et al., 2019), (3) A.I.'s impact on jobs and society (e.g., Frey & Osborne, 2017; Huang & Rust, 2018), and (4) managerial and strategic considerations regarding A.I. use (e.g., Fountaine et al., 2019; Huang & Rust, 2020).

2. A.I.'S INFLUENCE ON ONLINE BUSINESS FOR LOCAL SMES

Artificial intelligence (A.I.) has emerged as a powerful agent of digital transformation, driving significant changes in various industries, particularly within marketing. Modern marketing approaches embrace A.I. to enhance operational efficiency and competitive advantage (Chintalapati & Pandey, 2022). Small and medium-sized enterprises (SMEs) in the digital commerce are increasingly leveraging A.I. to strengthen their market position and customer engagement. By incorporating AI-driven marketing strategies, SMEs can achieve more precise targeting and better customer retention, allowing them to compete with larger firms cost-effectively despite resource limitations (Hansen & Bøgh, 2021). A.I. enables SMEs to utilize automated insights and tailor their marketing strategies, making operations more efficient and adaptable to market demands. This adaptability provides SMEs with an edge in the fast-paced digital market. The value of A.I. in marketing is expected to grow as technology advances, reinforcing its importance in future business strategies (Weber et al., 2021).

A.I. is transforming the digital business landscape for SMEs by enabling more targeted marketing strategies. Through machine learning and data insights, SMEs can craft personalized campaigns that maximize engagement and improve ROI (Grewal et al., 2020). In customer support, AI-driven tools like chatbots and virtual assistants provide real-time, customized interactions, boosting customer satisfaction (Diederich et al., 2022; Maedche et al., 2016; McTear et al., 2016). A.I. also enhances operational efficiency by automating essential processes, such as inventory management, which minimizes manual work and allows SMEs to concentrate on core business tasks (Gavrila et al., 2021).

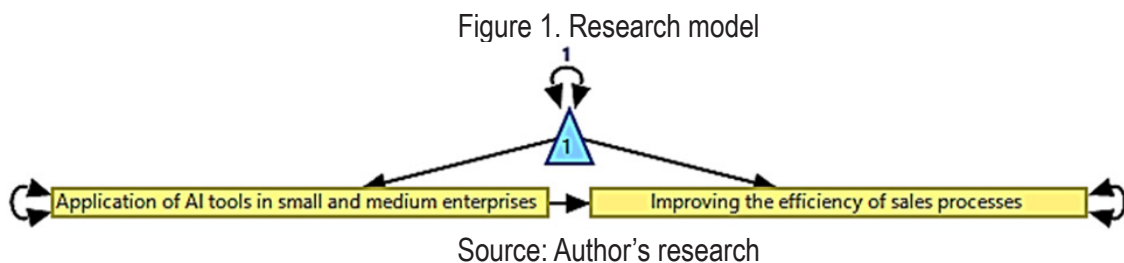
3. CHALLENGES PRESENTED BY AI IN LOCAL SMES' ONLINE BUSINESS

AI integration in SMEs offers promising benefits but presents numerous challenges. While A.I. enhances marketing, customer service, and efficiency, SMEs encounter technical barriers, budget constraints, and ethical considerations around workforce impacts and data privacy (Berente et al., 2021). Adapting current systems often requires custom solutions, collaboration with third parties, and significant

employee training. Clear leadership and communication are crucial for effective management changes as A.I. reshapes business roles and processes. A.I.'s potential to turn challenges into growth opportunities enhances SMEs' resilience in the market (Lu et al., 2022). However, a lack of conceptual frameworks for A.I. application in marketing remains a significant obstacle (Adeleye et al., 2024). Collaboration with digital partners offers internal expertise that SMEs may lack, accelerating A.I. adoption (Sahoo et al., 2023). For SMEs in digital marketing, the ability to analyze vast amounts of data provides a competitive edge. A.I. enables SMEs to predict trends, automate tasks, and personalize customer interactions effectively (Adeleye et al., 2024). This capability transforms digital marketing analytics, making A.I. essential for strategy and decision-making (Thilagavathy & Kumar, 2021; Zairis & Zairis, 2022). Although A.I. project implementation is generally well-regarded among SMEs, challenges in project planning and execution still exist. The shortage of skilled A.I. professionals also pushes SMEs to invest in talent retention or form external partnerships to attract A.I. expertise (Teerasoponpong & Sopadang, 2021).

4. THE ROLE OF AI TOOLS IN SALES FOR SMES: MATERIALS AND METHODS

The research model consists of the independent variable, Application of AI tools in SMEs, and the dependent variable, Improving the efficiency of sales processes, as shown in (Figure 1).



The research aims to determine whether the application of AI tools in SMEs improves their efficiency in sales processes.

Null Hypotheses H0: The application of AI tools in small and medium-sized enterprises does not affect the improvement of efficiency in their sales processes.

Alternative Hypotheses Ha: The application of AI tools in small and medium-sized enterprises affects the improvement of efficiency in their sales processes.

5. RESULTS

The study utilized an online questionnaire completed by respondents via the Internet, consisting of six statements for each variable in the model (Table 1). Respondents answered using a 5-point Likert scale (1 - strongly disagree, 2 - somewhat disagree, 3 - neither agree nor disagree, 4 - somewhat agree, 5 - strongly agree). The research sample included 275 respondents. The statements were derived from the authors' personal experiences and sources referenced in the theoretical research. Correlation and regression analyses were used in the study to assess the impact of the independent variable.

Table 1. Claims in research

Claim - Improving the efficiency of sales processes	1	2	3	4	5
In our company, we regularly use AI tools to analyze market data.	2	9	26	78	160
AI tools help us significantly in segmenting our customers.	2	5	28	82	158
We use AI tools to automate communication with customers.	2	5	28	83	157
The introduction of AI tools has improved the prediction of sales trends in our company.	8	27	55	97	88
AI tools have increased the speed of order processing in our team.	9	4	22	93	147
Employees are adequately trained to use AI tools in their daily work.	6	13	30	64	162
Claim -Application of AI tools in small and medium enterprises					
The efficiency of my sales team increased after implementing AI tools.	4	8	31	95	137
The processing speed of sales processes has improved significantly thanks to AI tools.	8	11	36	79	141
The satisfaction of our customers increased after the implementation of AI solutions in sales.	9	45	55	69	97
Our ability to respond quickly to customer needs has improved thanks to AI tools.	9	15	30	94	127
We have increased the number of closed sales transactions thanks to the use of AI tools.	4	6	36	82	147
Communication within my sales team has become more efficient after the introduction of AI technology.	4	13	38	88	132

Source: Author's research

(Table 2) presents the demographic characteristics of the respondents, focusing on activity, gender, education, chronological age, and years of work experience. The data indicate that the respondents are predominantly male, highly educated, older, and have varying levels of work experience. The predominance of the service sector over manufacturing may reflect specific labor market trends or the nature of the respondents' businesses.

Table 2. Demographic characteristics of respondents

User activity	N	Column %
service	162	58.91
production	113	41.09
Gender of user	N	Column %
men	191	69.45
women	84	30.55
School preparation of respondents	N	Column %
primary or secondary school	103	37.45
college or university	172	62.55
Chronological age of the user	N	Column %
(18-30)	26	9.45
(31-45)	84	30.55
(46-58)	104	37.82
(>58)	61	22.18
Years of service of the user	N	Column %
(<=10)	63	22.91
(11-20)	99	36.00
(21-30)	83	30.18
(>30)	30	10.91

Source: Author's research

The statistical data in (Table 3) Summary of Fit provide insight into the model's performance used for data analysis. The coefficient of determination, 0.768984, indicates that approximately 76.9% of the variance in the dependent variable, Improving the efficiency of sales processes, can be explained by the independent variable, Application of AI tools in SMEs, in the model. The high R² value suggests that the model explains the data well. The results indicate that the model is highly effective in explaining the variance in the dependent variable, Improving the efficiency of sales processes, and making accurate predictions with relatively low error. The average values reflect the respondents' positive attitudes toward the research question.

Table 3. Summary of Fit

RSquare	0.768984
RSquare Adj	0.768138
Root Mean Square Error	0.373247
Mean of Response	4.148485
Observations (or Sum Wgts)	275

Source: Author's research

The results of the analysis of variance (ANOVA) used to test the statistical significance of the model are presented in (Table 4). The ANOVA results indicate that the model significantly explains the variance in the dependent variable, Improving the efficiency of sales processes, given the very high F ratio and an extremely low probability for F, implying that the model is effective in prediction and that the results are statistically significant [F(1,273) = 908.7353, p < 0.0001]. This supports the hypothesis Ha: The application of AI tools in small and medium-sized enterprises affects the improvement of efficiency in their sales processes.

Table 4. Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Ratio
Model	1	126.59881	126.599	908.7353
Error	273	38.03250	0.139	Prob > F
C. Total	274	164.63131		<0.0001

Source: Author's research

The regression analysis results (Table 5) include the coefficients for the predictors and their statistical characteristics. The regression analysis results indicate that the Application of AI tools in SMEs has a significant and positive relationship with the dependent variable, Improving the efficiency of sales processes. The high t-ratio and very low Prob>|t| suggest reliable results. The standardized beta coefficient also suggests that the Application of AI tools in SMEs is a key factor in explaining the variance in the dependent variable, Improving the efficiency of sales processes.

Table 5. Parameter Estimates

Term	Estimate	Std Error	t Ratio	Prob> t	Std Beta	VIF
Intercept	0.34716	0.128093	2.71	0.0071	0	.
Application of AI tools in small and medium enterprises	0.887155	0.029429	30.15	<0.0001	0.876917	1

Source: Author's research

Based on the data from (Table 5) Parameter Estimates, a multiple linear regression equation was formed, as shown in (Formula 1):

Each unit increase in the application of AI tools in small and medium enterprises results in an increase in Improving the efficiency of sales processes by approximately 0.887.

6. CONCLUSIONS

This study highlights the significant impact of AI tools in improving the efficiency of sales processes within small and medium-sized enterprises (SMEs). With a high coefficient of determination ($R^2 = 0.768984$), the results indicate that nearly 76.9% of the variance in sales process efficiency can be explained by the use of AI tools, underscoring their critical role in enhancing productivity and performance. Findings from the ANOVA and regression analyses reveal a statistically significant, positive association between AI tool usage and increased sales efficiency, evidenced by a substantial F ratio and an exceptionally low p-value ($p < 0.0001$), which supports the alternative hypothesis (H_a). The study suggests that the adoption of AI tools is both beneficial and essential for SMEs aiming to enhance their sales processes. The robustness of the results across different analyses reinforces the model's reliability and predictive accuracy, with each unit increase in AI tool application correlating to an approximate 0.887 increase in sales efficiency. Furthermore, respondents' positive perspectives on AI's role underline its practical value and growing acceptance within the sector. In summary, this research confirms the importance of AI in transforming sales processes and offers valuable insights for SMEs seeking competitive advantage through technology. Future research could examine specific AI applications that drive the most significant efficiency gains, providing a deeper understanding of how AI can support business growth.

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