

The Effect of Artificial Intelligence and Responsive Market Orientation on Digital Marketing Performance of SMEs

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ABSTRACT

The aim of this study is to examine the relationships between AI and digital marketing performance of SMEs, as well as between responsive market orientation and digital marketing performance of SMEs in the United Arab Emirates (UAE). Quantitative methodology was applied to test the hypothesized relationships. Questionnaire was used to collect data from a sample of executive managers, sales managers, and general manager of SMEs in Dubai, Abu Dhabi, and Al-Sharjah. Simple random sampling technique was applied in the survey procedure. SPSS was utilized to conduct data analysis in this study. The results showed that AI and responsive market performance have significant effects on digital marketing performance of SMEs. The outcome of this paper provides novel evidence on the substantial role of AI and responsive market orientation in fostering the performance of SMEs in the UAE market. Therefore, SMEs and policymakers in the ministry of trade of UAE should consider the findings of this paper in developing better marketing to be in better competitive position. Moreover, utilizing AI tools for personalized marketing campaigns and data analysis, businesses can better understand consumer behavior and tailor their strategies accordingly. AI will support proactive marketing approach which contribute in increasing sales and revenue, ultimately leading to long-term success in the digital marketplace.

Keywords: AI, digital marketing performance, responsive market performance.

1. Introduction

Today, artificial intelligence (AI) is a cutting-edge revolutionary technology used in digital marketing to improve interactions between organizations and individuals. AI improves the efficacy of company-user interactions in the digital realm, hence increasing marketing performance. With the evolution of AI applications, several AI solutions have been reported to allow for flexible data processing and the selection of the best models for particular digital

marketing activities (Ponomarenko, 2024). In this aspect, AI can increase the success, customization, and efficiency of digital marketing, particularly for small and medium-sized businesses (SMEs). These solutions offer digital marketers in SME domain important insights into data analysis, prediction, personalization, automation, and consumer preferences, leading to increased confidence in the organization and its products (Efendioğlu, 2023). Furthermore, research indicates that responsive market orientation is an important factor in improving digital marketing effectiveness (Wongsansukcharoen, 2022; Aslam et al., 2025). Understanding the requirements and preferences of their target audience allows SEMs to modify their marketing efforts to better resonate with them. Limited resources sometimes pose a difficulty for SMEs. As a result, the lack of resources and skills frequently prevents SMEs from effectively executing responsive market orientation strategies (Didonet & Diaz-Villavicencio, 2020). Furthermore, the market's quick speed might make it difficult for SMEs to keep up with changing customer tastes and trends (Koporcic et al., 2025), and small enterprises in particular have battled with the shifting competitive climate (Biginas & Koumproglou, 2022). To address these difficulties, responsive market orientation is an appropriate solution. This might lead to missed opportunities and diminished competitiveness of SMEs. To succeed in dealing with the different global difficulties that SMEs encounter, they must develop survival strategies and strategic tactics. Nowadays, SMEs are encouraged to make choices based on data, to adopt agile processes to adapt and be adaptable, and to invest in digital talent development in order to improve their digital market performance. Some academics emphasized critical issues that firms must solve in order to successfully implement and leverage the benefits of AI-based digital marketing transformation (Hussain et al., 2023). As a result, this study contributes to the body of knowledge on how these factors are related by providing important insights and guidance to SMEs embarking on the journey of digital marketing transformation through the deployment of AI. As a result, the purpose of this study is to investigate the impact of AI applications and responsive market orientation on the digital marketing performance of SMEs in the UAE.

2. The challenging of adopting AI by SMEs

Although AI has the potential to transform digital marketing and create new opportunities for marketers, there are some critical issues that must be addressed when using AI. For example, data silos occur when data is stored in separate systems and not integrated, resulting in a fragmented view of the customer. This can have an impact on the accuracy of consumer segmentation and personalization initiatives, as well as predictive accuracy. Because AI algorithms rely on the data they are provided, there is a danger that they will make mistakes or provide irrelevant information. Inaccurate or biased data might produce inaccurate findings. This might result in a negative consumer experience and a lack of trust in the brand. To reduce this risk, marketers must train their AI algorithms on high-quality data and audit and update them on

a regular basis. Other difficulties include technological limits, as AI systems may be computationally intensive. They demand a large quantity of data and computing resources, making them difficult to deploy and scale in reality (Velev & Zlateva, 2023). In this aspect, AI algorithms might be difficult to read and understand, making it tough for marketers to make sound judgments. These difficulties significantly impede the use of AI in SMEs' business strategy. In terms of digital marketing, SMEs in the UAE frequently suffer money and resource limits, making it difficult to fund full digital campaigns or gain access to sophisticated marketing technologies such as AI and big data in the digital era. Barriers and drivers of digital transformation in SMEs have been identified; for example, SMEs have limited technical capabilities, and a lack of expertise might impede the adoption of developing digital platforms (Omowole et al., 2024). In other words, while SMEs in the UAE understand the necessity of digital marketing in remaining competitive in today's market, they face hurdles due to limited resources and experience. Without the requisite technical skills and expertise, SMEs may struggle to successfully use digital tools and platforms to reach their target audience and meet their marketing objectives. As a result, many SMEs in the UAE may be missing out on the benefits of digital marketing for development and success in the digital age.

In sum, the literature study demonstrates a major gap in understanding how AI applications are used in organizations for digital marketing, emphasizing the need for a more detailed investigation of their unique applications and quantitative impact. While AI-powered tools and algorithms have the potential to transform digital marketing by improving customization, predictive analytics, and consumer interaction, their true efficacy in accomplishing marketing goals is unknown, demanding empirical validation. Notably, SMEs in the UAE confront several hurdles when using AI into their digital marketing efforts. These difficulties range from technological obstacles, such as a lack of sophisticated AI infrastructure and technical competence, to resource limits, such as budgetary constraints and the high expenses involved with AI deployment. For example, the Mohammed Bin Rashid School of Government Report (2023) indicates that, while AI applications show great potential for improving marketing strategies (Mohasses, 2019), there is no empirical data to support their real contributions to digital marketing success. Without a comprehensive assessment of how AI might improve marketing efficiency, consumer targeting, and brand positioning, firms may struggle to justify AI investments or effectively incorporate AI-driven solutions into their marketing processes. However, there has been little study on how these organizational skills combine with AI-powered marketing techniques to increase digital marketing success. Understanding this dynamic is critical for SMEs looking to improve their market competitiveness, client retention, and overall business growth via AI-enabled marketing innovations. Addressing these research gaps is critical for improving AI-driven digital marketing strategies for SMEs, overcoming implementation challenges, guaranteeing optimal resource allocation, and enhancing SMEs'

technological and strategic skills in the UAE. As a result, the core research challenge focuses on exploring the interaction between AI applications, responsive market orientation, and digital marketing success.

3. Literature Review

3.1 Digital Marketing Performance

Over the last 10 years, digital marketing has emerged as a recognized specialization, with direct marketing at its core. Because of the proliferation of personal devices and their use, brand marketers have more direct and indirect interactions with the clients they seek to serve (Yuvaraj & Indumathi, 2018). With the increasing integration of digital platforms into enterprises, digital marketing is becoming an indispensable part of daily life. In today's competitive economy, remarkable experiences are demanded and valued more than ever before. In today's society, it is a popular and successful way to sell goods or services. Digital marketing is broadly defined as the promotion of products and/or services using digital technology such as mobile phones, display advertising, electronic gadgets, and any other digital media. In other words, it refers to the many marketing methods employed by businesses to communicate with customers using digital technology. Technological advancements have resulted in a surge in digital marketing tactics including SEO, SEM, content marketing, influencer marketing, and social media marketing. These strategies promote word-of-mouth advertising by allowing customers to obtain information at any time and from anywhere. As a result, excellent products sell better and generate more awareness than inferior products since customers can easily access media and read reviews from friends and colleagues (Archana, 2019).

Digital marketing refers to the advertising of goods and services using digital technologies such as the Internet, mobile devices, display adverts, and other digital media. The rise of digital marketing in the 1990s and 2000s changed how businesses and brands used technology for marketing. Digital marketing efforts are becoming more popular and successful as people use digital devices instead of physical businesses, and digital platforms are more incorporated into marketing strategies and daily life (Desai, 2019). Digital marketing is the advertising of various goods and services using digital technology and the Internet, such as tablets, smartphones, computers, and other digital media. As a result of the digital marketing idea, businesses use these channels to sell their products and services. Because digital media is so widely utilized in today's society, clients may readily access all relevant information about goods and services at any time and from any location. Many businesses use it to sell their products and services through digital channels of distribution (Madan, 2021). Based on the foregoing, it is possible to conclude that digital marketing, as defined by AI applications, refers to the use of cutting-edge technologies to promote businesses, products, and services through digital platforms such as

websites, mobile apps, social media accounts, and search engines. To create marketing strategies, it is necessary to automate decisions based on data collection, analysis, and economic trends.

3.2 Artificial Intelligence (AI)

The term AI was first used in public during a 1956 workshop at Dartmouth College in the United States. Since then, scholars from several academic disciplines have contributed to the subject of AI. Business researchers investigated how AI will affect customers, firms, and stakeholders in the business sector. AI delivers valuable services to the corporate sector by freeing up people's time to focus on higher-value activities. AI applications are now used to handle tedious repetitive jobs, deal with large amounts of data, and perform tasks where humans may make mistakes. In the sphere of marketing, AI provides unique solutions. In digital marketing, AI applications are sophisticated tools that analyze massive amounts of data to detect potential fraud or security flaws and enhance marketing approaches. These programs assist organizations in protecting customer data, ensuring secure transactions, and adapting to new technologies such as voice search and smart devices. Using AI may help marketers overcome data privacy and ethical problems, gain a competitive advantage, increase efficiency, and enhance consumer experiences (Efendioğlu, 2023). Companies may use AI to uncover customer trends by recognizing patterns and new connections in data. Furthermore, AI provides a distinct client experience. Today, it is commonly utilized in sales. According to statistical data, organizations may increase sales by 50% employing AI. AI reduces reaction time, increases productivity, and dramatically lowers expenses (Sadat, 2023).

The initial roots of AI in marketing may be traced back to the turn of the millennium, when early types of machine learning applications were used to evaluate manually acquired data, as well as to automate some marketing processes. With technological advancements, particularly at the start of the second decade of the twenty-first century, and the widespread use of social media and digital methods, the marketing process saw a rapid transition toward digital technology (Arora & Faisal, 2022). This transition was accompanied by the advent of big data, which is defined by volume, diversity, and renewable sources. This data was predominantly derived from interactions with digital communication tools, specifically social media sites. As a result of this transition, the usage of AI technologies in marketing has evolved from a luxury to an absolute requirement. Marketing professionals and analysts tried to find the best way to cope with this volume of data. Marketing experts hoped to use this volume of data to get deeper and more educated insights into customer behavior and the elements that attract them (Kaponis and Maragoudakis, 2022). In this regard, Oswal et al. (2021) said that AI applications include a wide range of methodologies that may be trained and learnt from huge quantities of data in order to develop applications that are more efficient at their duties and more accurate in their predictions. Similarly, Oh et al. (2023)

defined AI applications as AI-enabled approaches and protocols for tackling specific problems; they integrate human knowledge with deep learning AI to allow intelligent detection and recognition. AI enables smart monitoring and decision-making. There are four types of AI applications: comprehensive, neural network-based, statistical, and tree-based (Sun & Yin, 2020).

3.3 Responsive Market Orientation

Responsive market orientation refers to a company's capacity to swiftly react to market developments in order to suit the demands and preferences of its consumers (Vellina, 2024). This method entails actively listening to client input, tracking market trends, and altering strategy and tactics accordingly. Companies that respond to the ever-changing market landscape can remain ahead of competition and retain a solid market position (Gul et al., 2021). This customer-centric strategy is critical for developing long-term connections with customers and accelerating corporate success. Finally, responsive market orientation enables businesses to not only fulfill current consumer expectations but also predict future demands. This proactive strategy can lead to enhanced client happiness, loyalty, and retention. Companies may remain relevant and successful in today's changing business climate by constantly adapting and inventing in response to market input (Iyer et al., 2021). In conclusion, a responsive market orientation is critical for long-term success and growth in the marketplace. For example, a firm that regularly listens to consumer input and modifies its products or services might attract new clients while also retaining old ones. This customer-centric strategy can result in greater sales and profitability over time, as pleased consumers are more likely to refer others and conduct business with the organization (Taghvaei & Talebi, 2023).

Responsive market orientation is a strategy approach that entails actively listening to consumer wants and preferences and promptly adjusting products or services to fulfill them (Yang & Zheng, 2022). Companies may remain ahead of the competition and keep a loyal consumer base by maintaining up to date on industry trends and feedback. This proactive strategy not only assists businesses in identifying new development prospects, but it also allows them to respond to possible obstacles or threats in a timely way. Finally, in today's fast-paced business environment, a responsive market orientation may assist organizations in developing a strong reputation, fostering client loyalty, and driving long-term success. Companies that regularly analyze client requirements and preferences can adjust their offers to better match the changing expectations of their target audience. According to Şahin and Sığrı (2022), a customer-centric strategy improves brand loyalty and retention rates while increasing consumer satisfaction. Furthermore, by responding to market developments and consumer input, firms may better position themselves to capitalize on new trends and gain a competitive edge in the marketplace. Finally, a proactive market orientation is critical for firms seeking long-term growth and success

in an increasingly dynamic and competitive business environment (Narula et al., 2023). In the context of SMEs, responsive market orientation refers to small and medium-sized firms' capacity to swiftly adjust to market changes in order to fulfill consumer wants and requests (Ali et al., 2020). This involves the ability to recognize new trends, analyze client preferences, and respond quickly with innovative goods or services. SMEs with a responsive market orientation take a proactive approach to market developments, always seeking input from consumers and rivals to stay ahead of the curve. In today's fast-paced business world, SMEs must be agile and adaptable to remain competitive. By regularly monitoring the market, SMEs may efficiently predict changes in customer behavior and alter their plans appropriately. This proactive strategy not only helps to maintain existing consumers, but also attract new ones by providing innovative and specialized solutions. Finally, SMEs that prioritize market orientation are better prepared to flourish and expand in an ever-changing business context (Alnawas & Abu Farha, 2020).

4. Hypotheses development

4.1 The Effect of AI Application on Digital Marketing Performance

AI applications have revolutionized the way digital marketing is conducted, providing businesses with powerful tools to analyze data, personalize customer experiences, and automate processes (Arce et al., 2024). However, there is ongoing debate about the impact of AI on digital marketing performance (Abrokwah-Larbi & Awuku-Larbi, 2024). Some argue that AI can greatly enhance marketing efforts by increasing efficiency and effectiveness, while others believe it may lead to decreased human interaction and ethical concerns (Gołąb-Andrzejak, 2023). Ultimately, the effect of AI applications on digital marketing performance will depend on how businesses choose to utilize this technology. Those who embrace AI tools and use them to their full potential may see significant improvements in their marketing strategies and overall performance (Umamaheswari, 2024). On the other hand, businesses that rely too heavily on AI and neglect the importance of human interaction may risk losing the personal touch that consumers crave. It is crucial for companies to find a balance between AI and human involvement in order to maximize the benefits of both (Singh & Ahmed, 2024).

One way in which AI applications can contribute to better digital marketing performance for SMEs is through their ability to analyze vast amounts of data quickly and accurately (Singh & Ahmed, 2024). By utilizing AI applications, businesses can gain valuable insights into consumer behavior, preferences, and trends, allowing them to tailor their marketing strategies more effectively. Additionally, AI can help automate routine tasks, freeing up human resources to focus on more strategic and creative aspects of marketing campaigns (Enshassi et al., 2024). To that end, the combination of AI technology and human expertise can lead to more personalized and targeted marketing efforts, ultimately driving better results for SME businesses. AI

technology has revolutionized the way businesses approach their marketing efforts, allowing them to reach the right audience with the right message at the right time (Suleiman et al., 2021). With AI, companies can also optimize their advertising spend by identifying the most cost-effective channels and strategies. This level of precision and efficiency has the potential to significantly increase profit and drive growth for businesses of all sizes (Shanmugam et al., 2023).

In brief, the literature review shows that SMEs that implemented AI applications in their marketing strategies were able to compete in the market and boost their digital marketing performance significantly. AI technology helps SMEs streamline their marketing efforts, personalize customer interactions, and make data-driven decisions that lead to better outcomes. In the fast-paced world of digital marketing, staying relevant and competitive requires embracing innovation, and AI is a powerful tool that can help SMEs achieve their goals and drive success in today's market (Pereira et al., 2023). By leveraging AI technology, SMEs can gain a deeper understanding of their target audience and tailor their marketing strategies accordingly. With the ability to analyze vast amounts of data in real-time, SMEs can make informed decisions that are more likely to resonate with their customers. In essence, embracing AI in marketing can give SMEs a competitive edge and help them thrive in an ever-evolving digital landscape. Based on the aforementioned arguments, this study will test the following hypothesis in the domain of SMEs in the UAE.

Hypothesis (H1):

“AI applications have a significant effect on digital marketing performance”

4.2 The Effect of Responsive Market Orientation on Digital Marketing Performance

Responsive market orientation plays a crucial role in shaping the success of digital marketing performance. By being attuned to the ever-changing needs and preferences of consumers, businesses can tailor their marketing efforts to effectively reach and engage their target audience. This proactive approach not only enhances customer satisfaction and loyalty but also drives sales and revenue growth (Petzold et al., 2019). For example, a company that regularly conducts market research and analyzes customer feedback can quickly identify trends and adjust their digital marketing campaigns accordingly. By promptly responding to shifts in consumer behavior, they can stay ahead of competitors and maintain a strong online presence. This proactive approach ultimately leads to higher conversion rates and increased brand visibility in the digital marketplace. In today's fast-paced digital landscape, the ability to quickly adapt and respond to market trends is essential for staying ahead of the competition and maximizing the impact of digital marketing campaigns. Utilizing data analytics and consumer insights,

businesses can gain a deeper understanding of their target audience and fine-tune their marketing strategies accordingly (Lamore et al., 2013). In this regard, through continuously monitoring and analyzing market trends, businesses can stay agile and make informed decisions to capitalize on emerging opportunities. Ultimately, a customer-centric orientation is the key to achieving long-term success in the ever-evolving digital marketing landscape (Sharma et al., 2023).

The review of literature shows that responsive market orientation plays a crucial role in shaping the digital marketing performance of SMEs. By focusing on understanding and meeting the needs of customers in a timely and efficient manner, SMEs can effectively leverage digital marketing strategies to drive growth and success. This customer-centric approach allows businesses to tailor their online marketing efforts to resonate with their target audience, ultimately leading to increased brand awareness, customer engagement, and sales conversions (Tan & Liu, 2014). In today's digital age, where competition is fierce and consumer expectations are constantly evolving, a responsive market orientation is essential for SMEs to stay ahead and thrive in the marketplace. By continuously analyzing customer feedback and adapting their digital marketing strategies through responsive market orientation, SMEs can stay ahead of market trends and maintain a competitive edge (Lailin & Praswati, 2023). Therefore, prioritizing customer satisfaction and loyalty, businesses can build long-lasting relationships with their target audience and establish a strong brand reputation. Ultimately, a customer-centric approach to digital marketing not only drives growth and success but also contributes to the overall sustainability and longevity of the business (Abdul-Talib & Abd-Razak, 2020). Overall, a market-oriented approach in digital marketing can lead to increased customer satisfaction, brand loyalty, and ultimately, higher sales and revenue for SMEs (Narula et al., 2023). Thereby, continuously monitoring and analyzing consumer behavior and market trends, SMEs can make informed decisions that drive their digital marketing efforts towards success (Bodlaj, 2012). In conclusion, today's fast-paced and ever-evolving digital landscape, a market-oriented strategy is essential for SMEs to remain competitive and achieve sustainable growth in the long run. Based on the aforementioned arguments, this study will test the following hypothesis in the domain of SMEs in the UAE (Petzold et al., 2019). Based on the aforementioned arguments, this study will test the following hypothesis in the domain of SMEs in the UAE.

Hypothesis (H2):

“Responsive market orientation has a significant effect on digital marketing performance”

5. Research Methodology

This study applied quantitative methods to analyze the effects of AI applications and responsive market orientation on digital marketing performance. The population of this research includes

the executive managers, sales managers, and general manager of SMEs in three major provinces in the UAE, specifically Dubai, Abu Dhabi, and Al-Sharjah. Data instrument is self-administrated questionnaire. The data collection has been conducted on a sample of 50 respondents. Simple random sampling technique has been applied in the survey procedure. SPSS software is deployed to conduct data analysis. SEM is principal approach used to conduct data analysis and test the hypothesis of this study.

6. Result and discussions

The data collection has been conducted on a sample of 512 managers. Simple random sampling technique has been applied. SPSS software is deployed to conduct data analysis. A simple linear regression is used to test the hypotheses and assess the relationships between the variables. The evaluation of direct relationships is made through R-square, ANOVA, and Regression Coefficients. The model summary provides the initial information related to the regression strength between two variables. The data in Table 1 reveal details about the strength of relationships between AI and digital marketing performance of SMEs, as well as between responsive market orientation and digital marketing performance of SMEs.

Table-1: Summary of regression analysis.

Relationships	ANOVA (F-value)	R-Square	Unstandardized Coefficients B	Standardized Coefficients Beta	Sig. p-value
H1: AI applications → digital marketing performance	442.943	0.465	0.542	0.682	0.00
H2: Responsive market orientation → digital marketing performance	1209.697	0.703	0.843	0.839	0.00

The initial evaluation to the values in the model summary table enables the author to know how well the regression model predicts the variability between the variables. It is found the magnitude of R2 between AI and digital marketing performance of SMEs is moderates, while between responsive market orientation and digital marketing performance of SMEs is high. These values indicate the percentage of total variations in digital marketing performance which can be explained by the predictors (AI and digital marketing performance of SMEs) are satisfactory enough to consider considerable effects. Reading the level of significance of these relationship as shown in Table-1 indicates that the relationships between AI and digital marketing performance of SMEs as well as between responsive market orientation and digital marketing performance of SMEs are statistically significant (Sig.= 0.000 ≤ 0.05). Moreover, the strength of relationships is considered high. Therefore, it can be concluded that both AI and responsive market orientation have a significant impact on the digital marketing performance of

SMEs. The high level of significance and strength of these relationships suggest that implementing AI technology and focusing on responsive market orientation strategies can greatly improve the overall digital marketing performance of small and medium-sized enterprises. This research provides valuable insights for SMEs looking to enhance their digital marketing efforts and stay competitive in the ever-evolving digital landscape. By understanding the importance of AI technology and responsive market orientation, SMEs can better allocate resources and tailor their strategies to meet the demands of their target audience. With the right approach, SMEs can not only increase their online visibility and engagement but also drive sales and growth. As digital marketing continues to play a crucial role in business success, embracing these key factors can pave the way for long-term success and sustainability in the competitive digital market. Last, the outcome from ANOVA analysis reports the degree of regression model fit between Based on this result, hypotheses H1 and H2 are supported, which lead to a conclusion that both AI and responsive market orientation are essential factors that foster digital marketing performance of SMEs in the UAE.

6. Conclusions

The review of literature shows that to maintain competitiveness in the swiftly changing economic environment of today, organizations within SME domain must incorporate AI applications into their digital marketing strategies to gain customer trust. This study aims to examine the relationship between AI applications, customer trust, responsive market orientation, and digital marketing performance within the SME of UAE, emphasizing the potential mediating role of customer trust in this relationship. It has been shown that marketing, its activities, and practices have continuously evolved as a result of the great development in means of communication. Digital marketing performance has become the dominant form of marketing. It is no longer a luxury as much as it is a requirement to compete today. Technological development and progress have been accompanied by the emergence of multiple forms of AI. AI is based on applications that give the machine the ability to think, develop, and address problems like the human brain. AI occupies a prominent business place and has entered many fields. With a focus on innovation and continuous learning, the UAE has the potential to become a leader in AI-driven digital marketing strategies. With the right mindset and resources, SMEs in the UAE can leverage AI to not only enhance their marketing efforts but also build strong relationships with customers. The recommendation of this paper to companies that lies under SME category in the UAE is to focus on utilizing AI tools for personalized marketing campaigns and data analysis, businesses can better understand consumer behavior and tailor their strategies accordingly. This proactive approach will not only drive sales and revenue but also solidify the trust and loyalty of customers, ultimately leading to long-term success in the digital marketplace.

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