“Artificial intelligence and marketing innovation: The mediating role of organizational culture”

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ARTIFICIAL INTELLIGENCE AND MARKETING INNOVATION: THE MEDIATING ROLE OF ORGANIZATIONAL CULTURE

Abstract

The rapid advancement of artificial intelligence (AI) is transforming the e-commerce landscape, prompting businesses to adopt innovative marketing strategies. This study investigates the relationship between AI applications and marketing innovation in Egyptian e-commerce retailers, with a focus on the mediating role of organizational culture. The research employed a quantitative approach, utilizing a survey to gather data from 260 Egyptian e-retail store owners, managers, and marketers. The findings reveal a significant positive correlation between AI applications and marketing innovation, with organizational culture playing a crucial mediating role. The correlation coefficient (R) between AI and organizational culture was found to be 0.76, indicating that AI explains 57% of the variance in organizational culture. Similarly, the correlation coefficient (R) between AI and marketing innovation was 0.70, suggesting that AI explains 49% of the variance in marketing innovation. Path analysis further demonstrated a significant indirect effect of AI on marketing innovation through organizational culture. The study concludes that the integration of AI into marketing strategies can substantially enhance innovation, particularly when complemented by a supportive organizational culture. It underscores the importance for e-commerce retailers to invest in AI technologies and cultivate a culture that embraces technological advancements to drive marketing innovation and achieve sustainable competitive advantage.

Keywords artificial intelligence, marketing innovation, e-commerce retail stores

JEL Classification M14, M31, O39

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INTRODUCTION

In today's digital age, the rapid advancement of artificial intelligence (AI) technologies is revolutionizing various business sectors, particularly in the realm of e-commerce. Traditional marketing approaches, which often entail substantial financial investments, are becoming less effective against the backdrop of intensifying competition and the proliferation of online retail platforms. This shift has prompted businesses to embrace innovative strategies that utilize artificial intelligence to achieve a competitive advantage (Afifah et al., 2022; Huang & Rust, 2020).

AI has emerged as a crucial driver of marketing innovation, enabling companies to analyze vast amounts of data, gain deep insights into customer behaviors, and personalize marketing efforts with unprecedented precision. These capabilities are particularly vital in the e-commerce sector, where customer expectations are constantly evolving, and personalized experiences are key to retaining and attracting customers (Davenport et al., 2019). AI applications in marketing include chatbots for customer service, dynamic pricing models, personalized recommendations, and predictive analytics, all of which contribute to more efficient and effective marketing strategies (Miller, 2022).

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However, the successful implementation of AI in marketing is heavily influenced by the organizational culture. A culture that promotes innovation, agility, and openness to new technologies can significantly enhance the effectiveness of AI applications. Conversely, a resistant or inflexible organizational culture can hinder the adoption of AI, thereby limiting its potential benefits (Dekimpe, 2020). Understanding how organizational culture mediates the relationship between AI applications and marketing innovation is crucial for businesses striving to achieve a sustainable competitive advantage in the digital marketplace (Gacanin & Wagner, 2019).

1. LITERATURE REVIEW

The integration of artificial intelligence (AI) into marketing practices has garnered significant attention due to its potential to revolutionize how businesses operate. AI's capabilities in data analysis, customer engagement, and personalization make it a valuable tool for enhancing marketing strategies and achieving competitive advantages. The need to adapt to these advancements has driven organizations to re-evaluate their marketing strategies, leading to a deeper exploration of AI's impact on various marketing dimensions. One of the primary benefits of AI in marketing is its ability to transform customer experience management (CEM). Modern technologies facilitate the shift from traditional to intelligent CEM, significantly enhancing customer interactions and satisfaction. Continuous development and integration of AI technologies are crucial to staying competitive in the market, as they offer substantial returns by improving operational efficiency (Grewal et al., 2020). Investments in AI are not merely about adopting new tools but about fundamentally transforming how businesses engage with customers.

AI-driven applications like machine learning, big data, and data mining provide companies with superior efficiency and competitive edge. These technologies enable businesses to analyze vast amounts of data quickly and derive actionable insights that can inform marketing strategies (Balducci & Marinova, 2018). However, the accuracy and reliability of these AI applications can be a concern. Implementing AI solutions requires careful consideration and continuous monitoring to ensure they deliver accurate and reliable results (Marchand & Marx, 2020). Understanding customer needs and preferences is critical for innovation, and AI plays a pivotal role in this process. By analyzing market and competitor data, AI helps businesses develop innovative products and strategies that cater to evolving consumer demands (Wirth, 2018). This ability to derive insights from data allows companies to maintain a competitive edge by continuously updating their marketing approaches. The synergy between AI and human intelligence is also crucial, as it enables businesses to utilize human capabilities more effectively (Huang & Rust, 2021). This integration ensures that marketing strategies are both data-driven and creatively inspired, maximizing their impact.

AI's influence extends across various elements of the marketing mix, including product development, pricing strategies, promotional activities, and distribution logistics. For instance, dynamic pricing strategies driven by AI can adjust prices in real-time based on market conditions, inventory levels, and customer behavior (Kumari, 2023). This approach ensures that prices remain competitive while maximizing revenue. Similarly, AI-driven market analysis helps in identifying customer needs more accurately, leading to the development of products that better meet these needs (Han et al., 2023). The transition from traditional to digital promotional campaigns is another area where AI has made a significant impact. AI enables more precise control over the content, location, and timing of promotions, enhancing customer engagement and overall marketing effectiveness (Murár & Kubovics, 2023). By personalizing marketing messages based on customer data, AI helps businesses deliver more relevant and compelling content, increasing the likelihood of conversion and customer retention (Babatunde et al., 2024).

Applications such as chatbots, dynamic pricing, targeted offers, data analysis, and content recommendation are at the forefront of AI-driven marketing innovations. Chatbots, for example, interact with customers in real-time, answering questions, providing product recommendations, and facilitating purchases (Ma & Fildes, 2021). This

level of interaction improves customer satisfaction and frees up human resources for more complex tasks. Dynamic pricing adjusts prices based on demand, inventory, and customer profiles, ensuring competitive pricing and optimized inventory management (Sánchez-Cartas & Katsamakas, 2024). Targeted offers and personalized ads further enhance customer engagement by delivering content tailored to individual preferences and behaviors (Farseev, 2023).

Organizational culture plays a crucial role in the successful adoption and implementation of AI technologies. A culture that promotes innovation, flexibility, and openness to new technologies can significantly enhance the effectiveness of AI applications (Kusumawati & Yulistiyono, 2022). When employees feel their input is valued in the adoption process, they are more likely to support and champion these changes. Leadership also plays a critical role in fostering a culture that embraces AI. Leaders must communicate the value and potential of AI clearly and consistently, aligning these new tools with the organization's broader goals and values (Shanti et al., 2023).

However, cultural barriers can hinder AI adoption if not properly managed. Overcoming these barriers requires intentional efforts from leadership to foster a more dynamic and flexible organizational environment (Aiswarya et al., 2024). Addressing privacy concerns associated with AI is also crucial for building trust within the organization and with customers. A culture that prioritizes ethical considerations in business practices will be better positioned to manage these challenges effectively (Fousiani et al., 2024). Innovation in marketing encompasses various elements of the marketing mix, including product, price, promotion, and distribution. Innovation is defined as the introduction of new ideas and technologies that reshape existing concepts, while renewal involves reshaping these ideas to develop new solutions (Muis et al., 2024). This process is essential for the survival and competitiveness of business institutions, as it enhances their ability to keep pace with market developments and adapt to changing consumer needs (Joudeh et al., 2023).

In the context of e-commerce, AI applications have become indispensable for driving marketing innovation. These technologies enable businesses to analyze customer data more effectively, identify trends, and develop strategies that resonate with their target audience. AI's ability to process large volumes of data quickly and accurately provides a significant advantage over traditional marketing methods. This capability is particularly valuable in e-commerce, where customer preferences and behaviors can change rapidly (Verma et al., 2021). The mediating role of organizational culture in the relationship between AI applications and marketing innovation is a critical area of the study. Understanding how organizational culture influences the adoption and effectiveness of AI technologies can provide valuable insights for businesses looking to leverage AI for competitive advantage (Osman et al., 2023). A culture that supports technological advancements and encourages innovation can amplify the positive impact of AI on marketing outcomes. Conversely, a resistant or inflexible culture can limit the benefits of AI, hindering its potential to drive marketing innovation (Seranmadevia & Kumara, 2019).

The research has shown that companies with a strong innovation-oriented culture are more likely to succeed in integrating AI into their marketing strategies. These organizations are better equipped to manage the challenges associated with AI adoption and to leverage its capabilities to enhance their marketing efforts (Behl et al., 2023). By fostering a culture that values innovation and embraces change, businesses can create an environment where AI technologies can thrive. The impact of AI on marketing innovation is also influenced by external factors such as market conditions, regulatory environments, and technological advancements. Companies must navigate these factors carefully to maximize the benefits of AI. For instance, regulatory considerations around data privacy and security can affect how AI technologies are implemented and used. Businesses must ensure compliance with relevant regulations while leveraging AI to enhance their marketing strategies (Chou et al., 2022).

In conclusion, the integration of AI into marketing practices offers significant potential for enhancing customer engagement, driving innovation, and achieving competitive advantages. The success of AI adoption depends not only on the technological capabilities of the AI tools, but also

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on the organizational culture that supports their implementation. By understanding the interplay between AI applications and organizational culture, businesses can better harness the potential of AI to drive marketing innovation and achieve sustainable competitive advantage. This study aims to provide insights into these dynamics, offering valuable guidance for e-commerce retailers looking to leverage AI for improved marketing outcomes.

The purpose of this study is to examine how artificial intelligence (AI) applications, organizational culture, and user attitudes interact to influence marketing innovation in Egyptian e-commerce retailers. This purpose can be achieved by answering the following main question: Is there a significant relationship between the use of AI applications in marketing and marketing innovation (product innovation, price innovation, promotion innovation, and distribution innovation) considering the organizational culture in e-commerce retailers in Egypt?

The hypotheses under scrutiny in this research are as follows:

H1: There are significant differences among the companies under study concerning the concepts of artificial intelligence, organizational culture, and marketing innovation.

H2: There is a statistically significant relationship between AI and the organizational culture in the companies under study.

H3: There is a statistically significant relationship between AI and marketing innovation in the companies under study.

H4: There is a statistically significant relationship between the organizational culture and marketing innovation in the companies under study.

H5: There is a statistically significant relationship between AI applications and marketing innovation through the organizational culture in the companies under study.

2. METHODOLOGY

This study utilizes a quantitative research design with a descriptive and analytical approach to explore the relationship between artificial intelligence (AI) applications and marketing innovation in e-commerce retailers in Egypt. The mediating role of organizational culture is also examined.

The primary method of data collection for this study was a survey. A structured questionnaire was designed and distributed electronically via email and social media platforms. The survey targeted Egyptian e-retail store owners, managers, and marketers who use search engines and social media for promotion.

The population size for this study was approximately 800 companies operating in the e-commerce retail sector in Egypt. A random sample of

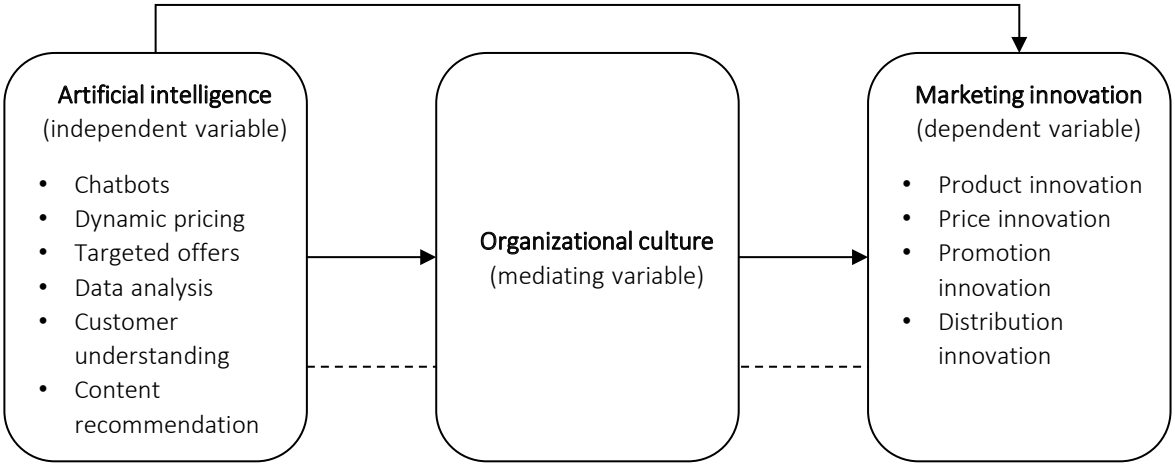

Figure 1. Research model

260 respondents was selected based on the sample size calculation law, ensuring representativeness and statistical significance. The sample size was calculated using the following formulas for an unlimited population: $n = (z^2 * \hat{p}(1-\hat{p})) / \varepsilon^2$, for finite population: $n' = n / (1 + (n-1)/N)$, where z is the z score, ε is the margin of error, N is the population size, $\hat{p}$ is the population proportion.

To ensure a sufficient response rate covering all sample units, 300 questionnaires were distributed between December 2023 and March 2024. Out of these, 260 completed responses were received, resulting in a response rate of 86%. The distribution of the study "sample individuals" according to the different activities is presented in Table 1.

Table 1. Distribution of study sample individuals by activity

Activity	Sample size distribution	Percentage
Clothes and shoes	75	29%
Food products	20	7%
Mobile phones and accessories	55	21%
Perfumes and cosmetics	57	22%
Cars	18	6.6%
Household tools and appliances	35	13%
Total	260	100%

A questionnaire was developed to collect primary data for addressing the research problem and hypotheses. It consisted of four sections: demographics, AI applications, organizational culture, and marketing innovation. Three-point Likert scale (agree, neutral, disagree) was utilized to measure respondents' agreement with statements. The specific scale used is detailed in Table 2.

The study's instrument demonstrated "high reliability", with Cronbach's alpha of 0.734 and internal consistency of 0.856. Reliability coefficients for all dimensions of the independent, mediating, and dependent variables were also high, supporting the generalizability of the findings.

Table 3. Reliability and Internal consistency coefficients of the research variables using Cronbach's alpha

Dimensions of the study	Number of items	Reliability coefficient	Validity coefficient
Dimensions of the independent variable (artificial intelligence applications)			
Chatbot	3	0.792	0.890
Dynamic pricing	3	0.667	0.817
Targeted offers	3	0.683	0.827
Data analysis	3	0.695	0.834
Customer understanding	4	0.786	0.887
Content Recommendation	3	0.753	0.868
Total dimensions of artificial intelligence applications		0.727	0.853
The mediating variable (organizational culture)			
10		0.808	0.899
Dimensions of the dependent variable (marketing innovation)			
Product innovation	6	0.562	0.750
Price innovation	4	0.772	0.879
Promotion innovation	4	0.638	0.799
Distribution innovation	4	0.715	0.846
Total dimensions of marketing innovation		0.669	0.818
Total dimensions of artificial intelligence and the organizational culture and marketing innovation (total dimensions of the independent variable, the mediator, and the dependent variable)		0.734	0.856

Table 2. Measures of the research variables and the number of items in the survey

Variable	Type	Dimensions	Number of questions
Artificial intelligence applications	Independent	Chatbot	3
		Dynamic pricing	3
		Targeted offers	3
		Data analysis	3
		Customer understanding	4
		Content recommendation	3
Organizational culture	Mediating		10
Marketing innovation	Dependent	Product innovation	6
		Price innovation	4
		Promotion innovation	4
		Distribution innovation	4

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3. RESULTS

To test *H1*, one-way ANOVA test was used to explore potential differences in AI understanding, organizational culture, and marketing innovation among companies, as proposed in hypothesis *H1*. The results are shown in Table 4.

Table 4 confirms a significant difference in AI understanding among companies (p = 0.000), supporting the hypothesis. Scheffe post-hoc test was employed to identify the source of this difference, with results shown in Table 5.

Table 5 highlights significant differences in AI understanding between specific company types: food vs. mobile phone (p = 0.000), cosmetics vs. car (p = 0.001), and household appliances vs. car (p = 0.002). No significant differences were found between the other company pairings.

One-way ANOVA test was employed to evaluate potential differences in organizational culture among companies, with results in Table 6.

Table 6 shows a significant difference in organizational culture among companies (p = 0.000), supporting the hypothesis. Scheffe post-hoc test was used to identify the source of this difference, with results presented in Table 7.

Table 7 reveals significant differences in organizational culture between specific company types: food vs. shoe stores (p = 0.000), food vs. mobile phone stores (p = 0.000), and household appliances vs. car stores (p = 0.000). No significant difference was found among mobile phone, perfume, and cosmetics stores.

One-way ANOVA test was conducted to evaluate potential differences in marketing innovation among companies, as shown in Table 8.

Table 8 shows a significant difference in marketing innovation among companies (p = 0.001), supporting the hypothesis. Scheffe post-hoc test was then applied to identify the source of this variation, with results displayed in Table 9.

Table 4. Results of one-way ANOVA test

Source of variation	Sum of squares	Degrees of freedom	Mean square	F calculated	p-value
Between groups	20.003	5	4.0006	5.185	0.000
Within groups	200.309	254	0.788		
Total	220.312	259			

Table 5. Table of multiple comparisons around the concept of artificial intelligence

p-value	Mean difference	Pairwise comparison
0.871	–0.0080	Clothing and shoes with food products
0.000	0.3545	Food products with mobile phones and accessories
0.990	–0.0050	Mobile phones and accessories with perfumes and cosmetics
0.001	0.3360	Perfumes and cosmetics with cars
0.002	0.3260	Cars with home appliances and tools

Table 6. Results of one-way ANOVA test

Source of variation	Sum of squares	Degrees of freedom	Mean square	F calculated	p-value
Between groups	22.180	5	4.436	8.566	0.000
Within groups	200.700	254	0.790		
Total	222.88	259			

Table 7. Table of multiple comparisons regarding organizational culture

p-value	Mea difference	Pairwise comparison
0.000	0.2592	Clothing and shoes with food products
0.000	0.3750	Food products with mobile phones and accessories
0.500	–0.0760	Mobile phones and accessories with perfumes and cosmetics
0.000	0.3670	Perfumes and cosmetics with cars
0.000	0.3367	Cars with home appliances and tools

Table 8. Results of one-way ANOVA test

Source of variation	Sum of squares	Degrees of freedom	Mean square	F calculated	p-value
Between groups	19.500	5	3.9000	4.1090	0.001
Within groups	200.030	254	0.787		
Total	219.530	259			

Table 9. Table of multiple comparisons regarding marketing innovation

p-value	Mean difference	Pairwise comparison
0.578	–0.0760	Clothing and shoes with food products
0.925	–0.0035	Food products with mobile phones and accessories
0.500	–0.0022	Mobile phones and accessories with perfumes and cosmetics
0.002	0.3670	Perfumes and cosmetics with cars
0.000	0.3367	Cars with home appliances and tools

Table 9 highlights significant differences in marketing innovation between perfume and cosmetics stores and car stores ($p = 0.002$), as well as between car stores and household appliance stores ($p = 0.000$). No significant differences were observed among other store types.

The results of the ANOVA tests support H1, indicating significant differences in AI understanding, organizational culture, and marketing innovation among the different types of companies.

To investigate the relationship between AI and organizational culture (*H2*), simple linear regression analysis was conducted. The nature and extent of this relationship are presented in Table 10.

The analysis revealed a positive statistically significant relationship ($p = 0.000$) between AI and organizational culture, with correlation coefficient (R) of approximately 0.77, indicating a strong association. Additionally, the coefficient of determination (R^2) of 0.59 suggests that AI explains 59% of the variance in organizational culture. These findings confirm the hypothesis *H2*.

To further investigate the relationship between AI applications and organizational culture, a stepwise multiple regression analysis was employed. The nature and strength of this relationship are presented in Table 11.

Analysis confirms a statistically significant relationship ($p < 0.01$) between AI applications and organizational culture, with correlation coefficient (R) of approximately 0.67, indicating a strong association. The coefficient of determination (R^2) of 0.46 suggests that AI applications explain 46% of the variance in organizational culture. The multiple regression analysis further supports H2 by demonstrating a statistically significant relationship between various AI applications and organizational culture.

Table 10. Output of simple linear regression analysis method

Correlation coefficient (R)	Coefficient of determination (R^2)	t-value	Significance level
0.770	0.592	17.405	0.000

Table 11. Artificial intelligence applications and organizational culture

No	Artificial intelligence applications	Correlation coefficient (R)	Coefficient of determination (R^2)
1	Chatbot	0.630	0.396
2	Dynamic pricing	0.570	0.324
3	Targeted offers	0.770	0.592
4	Data analysis	0.752	0.565
5	Customer understanding	0.625	0.397
6	Content recommendation	0.728	0.528
Correlation coefficient(R): 0.679 Coefficient of determination (R^2): 0.461 F-test value: 12.435			

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Table 12. Output of simple linear regression analysis method

Correlation coefficient(R)	Coefficient of determination (R^2)	t-value	Significance level
0.709	0.50	22.422	0.000

To investigate the relationship between AI and marketing innovation (*H3*), simple regression analysis was performed. The type and strength of this relationship are presented in Table 12.

The analysis revealed a positive statistically significant relationship (p = 0.000) between AI and marketing innovation, with correlation coefficient (R) of approximately 0.70, indicating a strong association. The coefficient of determination (R^2) of 0.50 suggests that AI explains 50% of the variance in marketing innovation. These findings support the hypothesis that there is a statistically significant relationship between artificial intelligence and marketing innovation in the surveyed companies. To further investigate the relationship between AI applications and marketing innovation, stepwise multiple regression analysis was employed. The nature and strength of this relationship are presented in Table 13.

The analysis confirms a statistically significant relationship (p < 0.01) between AI applications and marketing innovation, with correlation coefficient (R) of approximately 0.70. However, the dimension of dynamic pricing showed a weak relationship and did not significantly impact marketing innovation. The coefficient of determination (R^2) of 0.49 suggests that AI applications, excluding dynamic pricing, explain 49% of the variance in marketing innovation. The multiple regression analysis further strengthens H3, showing a significant relationship between AI applications (with the exception of dynamic pricing) and marketing innovation.

To investigate the relationship between organizational culture and marketing innovation (*H4*), a simple linear regression analysis was conducted. The specifics of this relationship are presented in Table 14.

The analysis revealed a positive statistically significant association (p = 0.001) between organizational culture and marketing innovation, with a correlation coefficient (R) of approximately 0.67, indicating a moderate association. The coefficient of determination (R^2) of 0.48 suggests that organizational culture explains 48% of the variance in marketing innovation. These findings support the hypothesis that there is a statistically significant relationship between organizational culture and marketing innovation in the companies examined. These findings support H4, confirming a statistically significant relationship between organizational culture and marketing innovation.

To test hypothesis *H5*, which proposes a mediating effect of "organizational culture" on the relationship between AI applications and marketing innovation, a path analysis was conducted using AMOS v. 24. The results, including direct and in-

Table 13. Artificial intelligence applications and marketing innovation

No.	AI applications	Correlation coefficient (R)	Coefficient of determination (R^2)
1	Chatbot	0.714	0.509
2	Dynamic pricing	0.622	0.386
3	Targeted offers	0.765	0.585
4	Data analysis	0.746	0.556
5	Customer understanding	0.590	0.348
6	Content recommendation	0.780	0.608

Correlation coefficient (R): 0.702
Coefficient of determination (R^2): 0.498
F-test value: 19.244

Table 14. Output of simple linear regression analysis method

Correlation coefficient (R)	Coefficient of determination (R^2)	t-value	Significance level
0.670	0.448	17.900	0.001

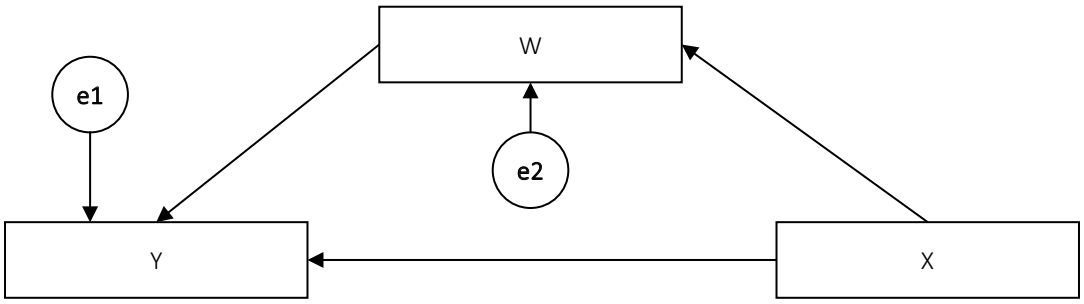

Figure 2. Path analysis model showing the impact of artificial intelligence on marketing innovation through the mediation of organizational culture

direct effects, are visualized in Figure 2, where X represents AI applications, W represents organizational culture, Y represents marketing innovation, and e1 and e2 represent residuals.

The results of the path analysis are shown in Table 15.

Table 15 demonstrates a significant positive direct effect of AI (X) on organizational culture (W) (coefficient = 0.686, $p < 0.01$), indicating that a one-unit increase in AI leads to a 68% increase in organizational culture. Similarly, a significant positive direct effect was observed between organizational culture (W) and marketing innovation (Y) (coefficient = 0.680, $p < 0.01$), suggesting a 68% increase in marketing innovation with a one-unit increase in organizational culture. Furthermore, a significant direct effect of AI (X) on marketing innovation (Y) was found (coefficient = 0.490, $p < 0.01$), implying a 49% increase in marketing innovation with a one-unit increase in AI. This suggests a partial mediation effect of organizational culture.

The analysis also revealed a significant indirect effect of AI on marketing innovation through organizational culture (coefficient = 0.455), indicating a 45% increase in marketing innovation due to the mediating effect. The model fit indices (Table 15) demonstrate excellent model fit: GFI = 1.000, CFI = 1.000, and RMSEA < 0.05. These results confirm the hypothesis that organizational culture mediates the relationship between AI applications and marketing innovation. These results confirm hypothesis H5, demonstrating that organizational culture partially mediates the relationship between AI applications and marketing innovation.

4. DISCUSSION

The results of this study paint a compelling picture of the transformative potential of AI in the Egyptian e-commerce landscape. The strong positive relationship between AI applications and marketing innovation suggests that AI is not merely a technological tool but a catalyst for strategic change. This finding resonates with the broader literature, which increasingly recognizes AI's ability to enable data-driven, personalized marketing strategies that enhance customer engagement and drive business growth (Davenport et.al., 2019; Miller, 2022).

Table 15. Results of path analysis

Variables/paths	Path coefficient value (β)	Standard error	p-value (significance)
Results of estimated model quality indicators			
GFI	**CFI**	**Chi-square**	**RMSEA**
Direct effect			
X→Z	0.686	0.041	***
Z→Y	0.680	0.054	***
X→Y	0.490	0.033	***
Indirect effect			
(X→Z) →Y	0.455		

Note: *** significant at 1% level.

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The study's emphasis on the mediating role of organizational culture adds another layer of complexity to this narrative. The significant correlation between AI adoption and organizational culture suggests that AI's influence extends beyond operational efficiency, shaping the very fabric of how organizations operate. This aligns with previous research highlighting the importance of a culture that embraces innovation and adaptability in realizing the full potential of AI (Thompson & Wright, 2019; Gacanin & Wagner, 2019). The partial mediation effect further underscores the interplay between technology and culture, suggesting that while AI can drive innovation, its impact is amplified within a supportive organizational environment.

The observed variations in AI understanding and marketing innovation across different company types raise intriguing questions about the contextual factors that influence AI adoption and its impact on marketing practices. The study's findings suggest that the relationship between AI and marketing innovation is not uniform but is shaped by industry-specific dynamics and organizational characteristics. Future research could delve deeper into these nuances, exploring how factors such as market maturity, competitive intensity, and regulatory environments influence the adoption and impact of AI in different sectors.

The study's limitations, including the reliance on self-reported data and the focus on a single national context, suggest avenues for future research. Longitudinal studies could track the evolution of AI adoption and its impact on marketing innovation over time, while cross-cultural comparisons could shed light on how cultural nuances influence the relationship between AI and marketing practices. Additionally, future research could explore the role of leadership in fostering an innovative culture and facilitating AI adoption, as well as the ethical considerations surrounding the use of AI in marketing.

Finally, this study contributes to the growing body of knowledge on the transformative potential of AI in marketing. It highlights the importance of both technological adoption and cultural adaptation in leveraging AI for competitive advantage. The findings suggest that e-commerce retailers in Egypt, and potentially in other emerging markets, can harness the power of AI to drive marketing innovation and achieve sustainable growth by investing in AI technologies and cultivating an organizational culture that embraces change and innovation.

CONCLUSION

The purpose of this study was to investigate the relationship between artificial intelligence (AI) applications and marketing innovation in Egyptian e-commerce retailers, focusing on the mediating role of organizational culture. The research aimed to determine how AI applications influence marketing innovation and the extent to which organizational culture mediates this relationship.

The study's findings revealed a significant positive relationship between AI applications and marketing innovation, with organizational culture acting as a partial mediator. AI applications such as chatbots, dynamic pricing, targeted offers, data analysis, and content recommendation were found to significantly enhance marketing innovation. Additionally, a positive correlation between AI applications and organizational culture was identified, highlighting the role of a supportive culture in leveraging AI effectively.

From these results, it can be concluded that the integration of AI in marketing strategies significantly boosts innovation, especially when supported by conducive organizational culture. Companies that invest in AI technologies and foster a culture that embraces technological advancements are more likely to achieve sustainable competitive advantages through enhanced marketing innovation.

In summary, this study underscores the importance of both AI applications and organizational culture in driving marketing innovation. E-commerce retailers should focus on cultivating an innovative organizational culture while investing in AI technologies to maximize their marketing outcomes and maintain a competitive edge in the rapidly evolving digital marketplace.

AUTHOR CONTRIBUTIONS

Conceptualization: Abdelrehim Awad.
Data curation: Abdelrehim Awad.
Formal analysis: Abdelrehim Awad.
Methodology: Abdelrehim Awad.
Supervision: Abdelrehim Awad.
Writing – original draft: Abdelrehim Awad.
Writing – review & editing: Abdelrehim Awad.

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