

The Impact of Artificial Intelligence Applications on Increasing Sales in Telecommunication Companies: (A Field Study on Zain Telecommunication Company – Sudan)

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Abstract:

The study aimed to identify the impact of artificial intelligence applications (dynamic pricing, chatbot, intelligent content organization, and data analysis [algorithms]) on increasing sales in telecommunications companies. The study employed a descriptive-analytical approach and used a questionnaire as a data collection tool. A random sample of 82 employees from Zain Telecommunications - Sudan was selected. The study results indicated variations in the use of artificial intelligence applications within the company; however, all applications were at a high level. The study also found a high level of sales growth in the company and a statistically significant impact of artificial intelligence applications collectively on increasing sales, with an impact coefficient of 92.4%. The study recommended investing in artificial intelligence applications due to their provision of predictive analytics, improved sales forecasting, and better customer segmentation, which enhances the effectiveness of the company's marketing strategies. It also emphasized the need to maintain current sales strategies while periodically analyzing market trends and customer behavior. Additionally, the study suggested integrating artificial intelligence applications into all sales and marketing operations to drive revenue growth.

Keywords: Artificial Intelligence, Sales, Zain Telecommunications, Sudan.

أثر تطبيقات الذكاء الاصطناعي في زيادة المبيعات بشركات الاتصالات (دراسة ميدانية على شركة زين للاتصالات - السودان)

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المستخلص:

هدفت الدراسة إلى التعرف على أثر تطبيقات الذكاء الاصطناعي (التسعير الديناميكي، ريبوت المحادثة، تنظيم المحتوى الذي تحليل البيانات (الخوارزميات) في زيادة المبيعات بشركات الاتصالات. استخدمت الدراسة المنهج الوصفي التحليلي، والاستبانة كأداة لجمع المعلومات، وتم اختيار عينة عشوائية مكونة من (28) من العاملين بشركة زين للاتصالات- السودان. توصلت نتائج الدراسة إلى وجود تباين حول استخدام تطبيقات الذكاء الاصطناعي بالشركة، إلا أن جميعها جاءت بمستوى مرتفع، وجود مستوى مرتفع حول زيادة نمو المبيعات بالشركة، ووجود أثر ذو دلالة إحصائية لتطبيقات الذكاء الاصطناعي مجتمعة الديناميكي في زيادة المبيعات بالشركة، بمعامل تأثير بلغ (4.29%). أوصت الدراسة بضرورة الاستثمار في تطبيقات الذكاء الاصطناعي لما توفره من تحليلات تنبؤية وتحسين لتوقعات المبيعات وتقسيم العملاء بطريقة أفضل، مما يؤدي إلى زيادة فعالية الاستراتيجيات التسويقية بالشركة، ضرورة الحفاظ على استراتيجيات المبيعات الحالية مع تحليل اتجاهات السوق وسلوك العملاء بشكل دوري بالشركة، والعمل على دمج تطبيقات الذكاء الاصطناعي في جميع عمليات المبيعات والتسويق بما يؤدي إلى زيادة نمو الإيرادات بالشركة.

الكلمات المفتاحية: ذكاء اصطناعي، مبيعات، زين للاتصالات، السودان.

Introduction:

The current era has witnessed significant advancements in modern technology, particularly artificial intelligence, which has revolutionized various sectors by simulating human brain function. According to Ismail (2021), the adoption of artificial intelligence applications in marketing is a crucial factor in organizations' success in today's competitive landscape. Artificial intelligence facilitates effective communication with customers and provides essential data that enables companies to innovate their marketing strategies across all elements of the marketing mix.

To attract customers and boost sales, companies rely on sophisticated marketing strategies. The sales process involves multiple stages, from analyzing customer needs and offering targeted promotions to completing transactions and delivering post-sales

services. As companies strive to increase sales, they face numerous challenges, including intensifying competition and shifting consumer behaviors. To overcome these challenges and enhance their performance, companies must leverage cutting-edge technologies.

This study aims to explore the impact of artificial intelligence technologies on sales growth in companies.

Problem of the Study:

Companies face numerous challenges in their pursuit of achieving sustainable sales growth in a competitive environment that increasingly relies on modern technologies, amidst the complexity of consumer behavior. This necessitates the utilization of artificial intelligence technologies to address these challenges, increase sales, and improve overall performance.

Previous studies, such as Al-Asoudi (2023), have confirmed that the use of artificial intelligence applications, such as dynamic pricing, chatbots, intelligent content organization, and data analysis, contributes to the development of companies and the achievement of competitive advantage.

Additionally, a study by Seif El-Din (2021) found that integrating artificial intelligence with e-marketing technologies led to improved shopping experiences and increased efficiency of marketing processes.

Based on the above, the problem of the study is defined by the following main question:

Does the application of artificial intelligence affect the increase in sales in the company?

This question branches out into several sub-questions, which are:

1. What are the most important applications of artificial intelligence used to increase sales from the perspective of researchers?
2. How do researchers evaluate the reality of sales in light of artificial intelligence technologies?

3. To what extent can artificial intelligence technologies affect the increase in sales in the company?

Significance of the Study:

The significance of the study stems from the following:

1. **Scientific Importance:** The novelty and scarcity of studies that have addressed artificial intelligence applications, in general, and their impact on increasing sales, in particular, make it an area of interest for this study to investigate their effects and related aspects.
2. **Practical Importance:** The results of this study can support the development of artificial intelligence applications in Sudanese companies. The researcher hopes that the study's findings will contribute to directing the attention of top management in Sudanese companies to use artificial intelligence applications to increase their sales.

Objectives of the Study:

The study aims to achieve the following objectives:

1. To identify the most important artificial intelligence applications used to increase sales from the perspective of the respondents.
2. To explore the reality of sales in light of artificial intelligence technologies.
3. To examine the impact of artificial intelligence technologies on increasing sales in the company.

Hypotheses of the Study:

The Main Hypothesis:

There is no statistically significant effect of artificial intelligence on increasing sales in the company.

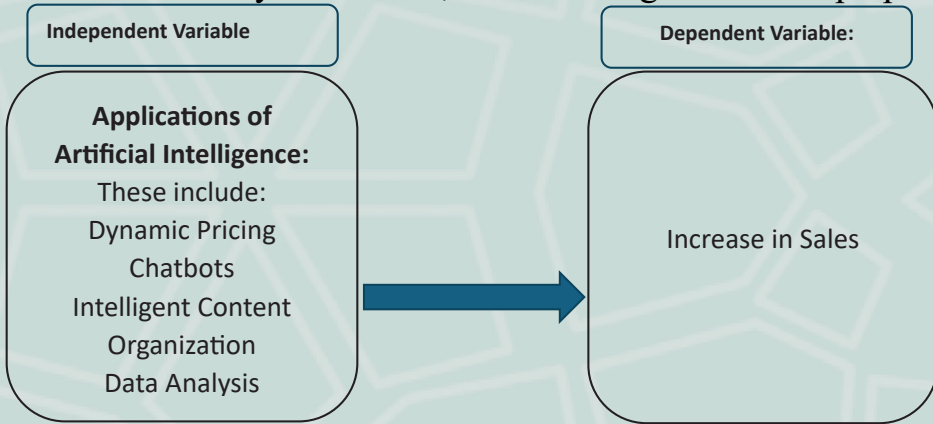
Sub-hypotheses:

1. There is no statistically significant effect of dynamic pricing on increasing sales in the company.

2. There is no statistically significant effect of chatbots on increasing sales in the company.
3. There is no statistically significant effect of intelligent content organization on increasing sales in the company.
4. There is no statistically significant effect of data analysis (algorithms) on increasing sales in the company.

Study Model:

Based on the study's variables, the following model was prepared:



Source: Prepared by the Researcher, 2025.

Methodology of the Study:

The study follows the descriptive-analytical approach and case study.

Data Collection Sources:

The study relies on primary sources:

1. Questionnaires
2. Personal interviews

In addition to secondary sources:

1. Books
2. Scientific research
3. Studies
4. Reports
5. Journals

6. Seminars and conferences related to the study topic.

Limits of the Study:

The study is limited to the following:

1. Geographical limits: Zain Telecommunications Company - Sudan.
2. Time limits: 2024.
3. Human limits a sample of employees of Zain Telecommunications Company in Sudan.

Previous Studies:

Study by Stone et al. (2020):

The study aimed to review the literature on artificial intelligence applications in strategic situations and identify the required research in the field of applying artificial intelligence to strategic marketing decisions. The study followed a literature survey methodology and consulted with marketing experts who were invited to contribute to the study. The results showed that artificial intelligence is applied in the process of making strategic marketing decisions, and that there are strong effects of applying artificial intelligence on all companies, especially large companies in competitive industries.

Study by Ismail (2021): The study aimed to identify the mediating role of attitude towards modern technologies in the relationship between the use of artificial intelligence and marketing innovation. The study followed a descriptive-analytical methodology, and used a questionnaire as a tool for collecting information, through a sample of (260) owners, managers, and marketers of electronic retail stores in Egypt. The results showed that relying on artificial intelligence applications in marketing is considered one of the most important factors for the success of organizations at present, as artificial intelligence provides ease and effectiveness of communication with customers, and provides the necessary data that helps the company to innovate in marketing regarding all ele-

ments of the marketing mix. Additionally, most marketers in the companies under study have a good attitude towards the benefits of artificial intelligence, but they need a deeper understanding to facilitate the process of relying on artificial intelligence applications.

Study by Saif Al-deen (2021):

The study aimed to identify the applications of artificial intelligence and their impact on the present and future of e-marketing. The study followed a descriptive methodology, a case study of Amazon company, during the period from (2004-2019). The results of the study concluded that the latest developments in our era have radically changed the expectations of shoppers on the one hand and the developments of marketers on the other, making e-shopping more customized for the customer, easier, and more responsive to their desires and time-saving. The integration of artificial intelligence applications with modern machines and technology has led to a qualitative leap in the field of e-shopping, from smart search and voice and visual search, through Chabot and automatic product description, to targeted advertising and warehouse and rapid shipping mechanisms, making the online shopping experience easy, beneficial, and smooth for the customer, paving the way for a more revolutionary future for this sector.

Study by Wamba, Samuel Fosso (2022): The study aimed to investigate the impact of artificial intelligence adoption on firm performance: The mediating effects of organizational agility and customer agility. The study sample consisted of senior managers and middle-level managers of supply chains in companies headquartered in the United States through an online survey. The results showed that artificial intelligence adoption is an important predictor of firm performance, organizational agility, and customer agility.

Study by Al-Wasil et al. (2023): The study aimed to investigate the impact of artificial intelligence technologies on improving digital marketing strategies. The study followed a descriptive and survey methodology, using Media Richness Theory, and a sample of experts in digital marketing or artificial intelligence was selected. The study reached several conclusions, including:

- Artificial intelligence helps improve digital marketing strategies and reach the target audience.
- Artificial intelligence technologies can be relied upon to write digital content to attract the target audience.
- Artificial intelligence technologies have contributed to improving the understanding of customer needs and providing customized solutions for them.
- Due to artificial intelligence, there is an increase in interaction and response from customers.
- Artificial intelligence enhances competition among social media applications.
- The use of artificial intelligence in digital marketing on social media will replace the human element.

Study by Fahim et al. (2023): The study aimed to investigate the impact of employing artificial intelligence tools on the effectiveness of digital marketing, with a case study on Amazon Egypt. The study used a descriptive-analytical approach and a questionnaire as a tool for collecting information from a sample of 340 employees at Amazon Egypt. The study found several results, including:

- A significant statistical relationship between artificial intelligence tools (data analysis, content customization, customer behavior prediction, targeted advertising, and chatbots) and the effectiveness of digital marketing.

Study by Al-Bambawi (2023): The study aimed to identify the most important artificial intelligence and big data technologies and their role in improving digital marketing methods from the per-

spective of marketing experts. The study followed a descriptive approach and used interviews as a tool for collecting information from a sample of 40 marketing experts on Upwork. The study concluded that artificial intelligence and big data technologies have contributed to the significant development of digital marketing, and that digital marketers rely heavily on them in their marketing campaigns. These tools and technologies facilitate marketing campaign tasks, save time and effort, and lead to results that are more accurate.

Study by Al-Asdoudi (2023): The study aimed to investigate the application of artificial intelligence mechanisms in digital marketing and its impact on achieving competitive advantages. The study used a descriptive-analytical approach and a questionnaire as a tool for collecting information from a sample of 60 experts, divided equally between practitioners and academics. The study found that:

- There is a high-perceived ease of use of artificial intelligence applications in digital marketing among experts.
- Artificial intelligence applications have a significant impact on the development of Egyptian companies and achieving competitive advantages.
- The most influential applications are intelligent content organization, dynamic pricing, and marketing analytics.

Study by Gao et al. (2023): The study aimed to investigate artificial intelligence in advertising: developments, challenges, and ethical considerations in targeting, customization, content creation, and ad optimization. The study followed a literature review methodology, reviewing 241 published papers on artificial intelligence in the Scopus database up to July 2023. The study found that:

- Artificial intelligence applications and impacts in the advertising industry cover four main elements: targeting, customization, content creation, and ad optimization.

- Artificial intelligence will have a significant impact on advertising, and there are many challenges and ethical considerations when implementing artificial intelligence in advertising.

Study by George et al. (2024): The study aimed to investigate the role of artificial intelligence in marketing strategies and performance. The study followed a descriptive methodology, using questionnaires and interviews as tools for collecting information from a sample of marketing professionals across various sectors, in addition to interviews with marketing leaders, artificial intelligence solution providers, and industry experts. The study found that:

- The use of artificial intelligence in marketing gives marketers advanced capabilities for data-driven decision-making.
- The use of artificial intelligence in marketing helps improve customer engagement. Automated systems supported by artificial intelligence and equipped with natural language processing not only enhance customer service but also contribute to generating potential customers by collecting valuable information about them.

Study by Al-Shahri and Abdullah (2024): The study aimed to determine the impact of using artificial intelligence means on improving the quality of supply services in the government sector. The study relied on a descriptive-analytical approach and a questionnaire as a tool for collecting information from a sample of 100 employees working in the Ministry of Human Resources and Social Development.

The results of the study showed that:

- There is agreement among sample members about the impact of artificial intelligence and its various applications on the quality of supply services within the ministry.
- The results of the study indicated a relationship between the use of artificial intelligence applications and the improvement of supply services in the ministry.

Research Gap between the Current Study and Previous Studies:

Despite the numerous previous studies that addressed the topic of artificial intelligence applications from various angles, there is a lack of research that links artificial intelligence applications to increased sales in Sudan. Many previous studies focused on the impact of artificial intelligence on marketing, e marketing, and performance, without exploring its impact on increasing sales. Therefore, this study aims to bridge this gap by providing an analysis of the impact of artificial intelligence applications on increasing sales.

What distinguishes the current study from previous studies?

The current study is distinguished from previous studies in that it addresses the topic of “increasing sales”, in addition to its focus on telecommunications companies operating in the Sudanese market, which adds scientific and practical value that distinguishes it from other previous studies.

First: Theoretical Framework:

1. Artificial Intelligence:

Artificial intelligence, according to Allami (2020: 1811), refers to a set of complex technologies based on systems and software that have the ability to simulate human intelligence, represented in the ability to learn and learn, logical perception and inference, and deliberately make decisions based on available data and information.

Golab-Andrzejak (2022) sees it as modern technologies capable of simulating the human mind in its thinking and decision-making through complex computer systems.

Al-Huwaymil (2024: 627) sees it as systems capable of simulating the human mind, having the ability to perform tasks and duties that require human intelligence. Those systems can also evolve on their own based on the data and information entered into them.

Rosa and Bechler (2024) defined it as the machine’s ability to re-

spond intelligently without direct human intervention.

Di Vaio et al. (2020: 293) clarified that artificial intelligence in marketing enables the analysis of big data quickly and accurately by leveraging artificial intelligence capabilities to make smart decisions. It provides high customization of marketing experiences, improves customer service by providing solutions that meet their needs, and enhances predictive analytics for customer trends, improves advertising campaigns, automates processes, analyzes sentiment, and determines optimal pricing.

Artificial intelligence in marketing also includes many applications, including:

a. **Dynamic Pricing:** Misra et al. (2019) explained that it is a technology that depends on pricing products according to market demand, consumer behavior, competition, and customer profile, by using cookies, number of visits, and their history, among other processes. This approach achieves maximum revenue and improves competitiveness.

b. **Chatbots:** Ma and Shaohui (2021) indicated that they are intelligent programs that rely on machine learning to interact with customers through text or voice messages to answer their inquiries, provide support, and meet their needs and desires. They are used in customer service around the clock, sales support, and are characterized by speed and accuracy based on data analysis.

c. **Intelligent Content Organization:** Hajjaj (2021) defined it as an intelligent technology used in creating content automatically according to customer behaviors and interests through data analysis (algorithms) important for users to help present customized content and offers.

d. **Data Analysis (Algorithms):** Berger et al. (2019) saw it as a technology that analyzes (image analysis, sentiment analysis, audience analysis, etc.) to understand customer opinions, identify target groups, and use its results to make effective marketing deci-

sions.

Sales:

The American Marketing Association defined sales as: “a personal effort related to enticing a prospective consumer and persuading him to buy a product/service or create a positive attitude towards it.” (Ali and Fathi, 2010: 5).

Rizwan (2014: 66) defined sales as: “a communication process between the seller and the buyer, where information is exchanged with the goal of convincing the prospective buyer to purchase the product.”

Fadlallah and Awis (2024: 188) defined sales as: “an exchange process of a product/service for a price, where the party paying the price is called the buyer, and the party providing the service and receiving the price is called the seller.”

Al-Hamdi et al. (2024: 147) stated that sales are: “the process of sellers providing products/services to consumers after receiving their value, based on an agreement between the two parties (seller/buyer)”.

Marzouq and Banawala (2020: 271) saw that increasing sales is a marketing goal that aims to increase the percentage of products or services offered during a specified period, according to the approach or means used to achieve this goal. This is done by activating promotional strategies within the company to stimulate a change in the consumer’s purchasing behavior and attract their attention to the services provided.

Marzouq and Banawala (2020: 271) and Luqma et al. (2023: 426) mentioned that increasing sales aims to achieve several goals, including:

- Encouraging consumers to try new products
- Attracting their attention away from competitors’ products
- Building and strengthening market share in the medium and long term

- Activating and motivating different sales forces
- Increasing demand and enhancing purchase quantities to achieve sustainable sales growth.

Second: Field Study

1. Study Methodology:

The study relied on the descriptive-analytical approach, which is the most suitable for the purposes of the study, which aims to identify the degree of use of artificial intelligence applications and their impact on increasing sales. This approach is concerned with describing the phenomenon in detail as it exists in reality through a sound scientific methodology, and presents the results in a quantitative manner that can be interpreted, and proposes the optimal methods that should be adopted.

2. Study Population and Sample:

The study population consisted of employees of Zain Telecommunications Company - Sudan. A simple random sample was selected, and the study sample consisted of (82) employees of Zain Telecommunications Company - Sudan. The questionnaire was distributed to them, and all the questionnaires collected were valid for analysis. Table (1) shows the description of the study sample.

Age Groups	Number	Percentage
30 years and less than 40 years	21	25.6
40 years and less than 50 years	40	48.8
50 years and above	21	25.6
Educational Level	Number	Percentage
Bachelor's degree, ,	19	23.2
Master's degree	37	45.1

Age Groups	Number	Percentage
Doctoral degree	26	31.7
Work experience	Number	Percentage
Less than 5 years	11	13.4
5 years and less than 10 years	10	12.2
10 years and less than 15 years	29	35.4
15 years and above	32	39.0

Source: Prepared by the researcher from the results of the field study, 2025

It is noted from Table (1) the following: The age group: The most represented group in the sample is (40 and less than 50 years) with a percentage of 48.8%, indicating that the majority of the respondents are within a middle-aged group with sufficient professional experience. The two groups (30 and less than 40 years, and 50 years and above) came equally with a percentage of 25.6% each, indicating a balanced representation between the two groups.

Regarding the educational level, the highest group among the respondents was those holding a master's degree with a percentage of 45.1%, followed by a doctoral degree with a percentage of 31.7%, reflecting the quality of the scientific qualification of the respondents. The sample of the study included holders of a bachelor's degree with a percentage of 23.2%, indicating that the study included different scientific levels.

In terms of practical experience, the results showed that the most represented group is (15 years and above) with a percentage of 39.0%, followed by the group of 10 and less than 15 years with a rate of 35.4%, indicating a high degree of experience among the

respondents. The sample, of the two groups (less than 5 years) came with a percentage of 13.4%, and the group (5 and less than 10 years) had a rate of 12.2%, indicating the existence of limited representation of less experienced cadres among the respondents.

Study Tool: To achieve the goal of the study and answer its questions, the study tool was developed based on the field reality, and it consists of two parts:

The first part: Demographic data: Includes (age, scientific qualification, and practical experience).

The second part includes the axes of the study, which includes the first axis of artificial intelligence (20) phrases, distributed over its four dimensions (dynamic pricing, chatbots, smart content organization, data analysis (algorithms)), and includes the second axis of increasing sales (7) phrases.

The performance was designed according to the five-point Likert scale (very high, high, medium, weak, very weak), to determine the degree of use of artificial intelligence applications and their impact on increasing sales at Zain Communications Company, Sudan.

Stability of the study tool

Cronbach's alpha coefficient was used to measure stability, and it is noted from Table (2) that the overall stability coefficient was (0.911), and that the stability values for the study variables ranged between (0.885-0.939). This indicates that the questionnaire has a high degree of stability, reassuring the researcher to apply it to the study sample.

Table 2: stability coefficients of the study tool

Variables	Number of paragraphs	Cronbach's Alpha
Dynamic Pricing	5	0,888
Chatbots	5	0.921
Smart Content Organization	5	0.885
Data Analysis (Algorithms)	5	0.939
Sales Increase	7	0.921
The total	27	0.911

Statistical Methods Used:

To answer the research questions and test its hypotheses, the researcher used the Statistical Package for Social Sciences (SPSS, version 25) and employed the following statistical methods:

- Frequencies and percentages to identify the demographic characteristics of the study sample.
- Descriptive statistical analysis tools, which use means and standard deviations to describe the study sample and its trends.
- Cronbach's Alpha test to determine the reliability of the questionnaire items.
- Regression Analysis: Regression analysis was used to test the statistical significance of the study's hypotheses.

Results of the Study, Discussion and Interpretation:

This part includes the analysis of the study axes to enable the discussion of its hypotheses by extracting the arithmetic means, and standard deviations, and ranking the fields of the study as follows:

Axis I: Artificial Intelligence Applications

To determine the level of use of artificial intelligence applications in the company under study, arithmetic means, standard deviations, and ranking were calculated to determine the opinions of the study sample individuals about the dimensions of artificial intelligence, as shown in Table (3).

Table (3): Descriptive Statistics of Artificial Intelligence Applications Dimensions

Dimension	Average	Standard Deviation	Response Rate	Order
Dynamic Pricing	4.07	0.93	High	3
Chatbots	3.99	0.96	High	4
Smart Content Organization	4.22	0.77	Extremely high	2
Data Analysis (Algorithms)	4.24	0.75	Extremely high	1
The total	4.13	0.85	High	–

Source: Prepared by the researcher from the results of the field study, 2025.

Table (3) indicates the descriptive statistics of the dimensions of the artificial intelligence axis. The dimension “Data Analysis (Algorithms)” obtained the highest response mean of (4.24) with a standard deviation of (0.75), indicating strong approval from the respondents on the importance of data analysis (algorithms). On the other hand, the dimension “Chatbots” ranked lowest with a response mean of (3.99) and a relatively higher standard deviation of (0.96), reflecting greater variation in opinions about its ability to improve customer service. The overall mean for the artificial intelligence applications axis was (4.13) with a total standard deviation of (0.85), indicating a clear consensus among the respondents that the company has a high interest in using artificial intelligence techniques.

Axis II: Sales Increase Reality

To identify the reality of virtual work teams' performance, the mean and standard deviation of the phrases measuring sales increase were calculated and ranked according to the respondents' answers, as shown in the following Table (4):

Table (4): Descriptive Statistics of Sales Increase Variable

Statements	Mean	Standard Deviation	Re-sponse Rate	Order
The company's sales have continuously increased over recent periods.	4.44	0.74	Ex-tremely high	2
The company regularly achieves its set sales targets.	4.11	0.86	high	6
There is a steady increase in demand for the company's products and services.	4.32	1.05	high	4
The company's sales strategies yield positive results in increasing sales.	4.51	1.02	Ex-tremely high	1
The company's ability to attract new customers successfully contributes to sales growth.	4.39	0.91	Ex-tremely high	3

Statements	Mean	Standard Deviation	Re-sponse Rate	Order
Enhancing customer experience has resulted in higher sales rates for the company.	4.12	0.89	high	5
The company achieves sustainable growth in annual sales volume.	4.10	1.10	high	7
The total	4.28	0.94	Ex-tremely high	–

Table (4) shows the descriptive statistics for the sales increase axis. The phrase “The company’s sales strategies yield positive results in increasing sales” recorded the highest response mean of (4.51) with a low standard deviation of (1.02), reflecting a strong consensus among the respondents on the positive impact of the sales strategy. On the other hand, the phrase “The company achieves sustainable growth in annual sales volume” ranked lowest with a mean of (4.10) and a relatively higher standard deviation of (1.10), indicating greater variation in the respondents’ opinions about its ability to sustain sales growth in the long term. The overall mean for the axis was (4.28) with a total standard deviation of (0.94), indicating that the respondents agreed on a high level of sales growth in the company.

Hypothesis Testing:

Main Hypothesis: There is no statistically significant impact of Artificial Intelligence applications on increasing sales at Zain Telecommunications Company.

To verify the hypothesis, regression analysis was used to identify the effect of the independent variable (Artificial Intelligence applications) on the dependent variable (increase in sales). Table (5) shows the results of the analysis:

Table (5): Results of Regression Analysis on the Effect of Artificial Intelligence on Sales Growth

Independent Variable	Regression Coefficients	T-Test Value	P-Value (Sig)
Constant Variable	.584	4.813	.000
Artificial Intelligence	.896	31.119	.000
Correlation Coefficient = 0.961		Coefficient of Determination = 0.924	
F-Test Value = 968.378		P-Value = 0.000	

Source: Prepared by the researcher from the results of the field study, 2025.

It is noted from Table (5) that there is a statistically significant effect of artificial intelligence applications as an independent variable (explanatory) on increasing sales as a dependent variable (response), and this effect is supported by the calculated F-value of (968.378), which is greater than the tabular value at a significance level of (0.000), indicating the existence of an effect of (artificial intelligence) on the dependent variable (increase in sales). This indicates that the regression curve is good for describing the relationship between the two variables, where the estimates indicated a strong positive correlation between the variables of (0.961a). Also, the value of the coefficient of determination (R²) for artificial intelligence applications was (0.924), which means that %92.4 of the variation in sales increase is explained by artificial intelligence applications, and % 7.6 is explained by other factors not included in the regression model.

Based on the previous model estimates, we reject the null hypothesis and accept the alternative hypothesis, which states that (there is a statistically significant effect of artificial intelligence applications on increasing sales at Zain Telecommunications Company). The current study agrees with many studies on the existence of an effect of artificial intelligence applications, such as the study of Stone et al. (2020), Ismail's study (2021) which showed strong effects of applying artificial intelligence on all companies, Ismail's study (2021) which clarified that relying on artificial intelligence applications in marketing is one of the most important factors for the success of organizations, and Seif El-Din's study (2021) which confirmed that the integration of artificial intelligence applications with machines and modern technology has led to a qualitative shift in the field of e-shopping. Also, Wamba, Samuel Fosso's study (2022) showed that artificial intelligence adoption is an important indicator of company performance, organizational agility, and customer speed. Al-Wasil et al.'s study (2023) clarified that artificial intelligence technologies have improved the understanding of customer needs and provided customized solutions for them. Fahim et al.'s study (2023) showed a statistically significant effect between artificial intelligence tools and the effectiveness of digital marketing. George et al.'s study (2024) showed that using artificial intelligence in marketing helps improve customer engagement.

After the main hypothesis, the following sub-hypotheses branch out:

First Sub-Hypothesis: Dynamic pricing has no statistically significant impact on increasing sales at Zain Telecommunications Company.

To verify the validity of the hypothesis, regression analysis was used to identify the effect of the independent variable (dynamic pricing) on the dependent variable (increase in sales). Table (6) shows the results of the analysis:

Table (6): Regression Analysis Results of the Impact of Dynamic Pricing on Sales Increase

Independent Variable	Regression Coefficients	T-Test Value	Significance Level (Sig)
Constant Variable	1.005	8.700	.000
Dynamic Pricing	.805	29.091	.000
Correlation Coefficient =.956 ^a		Coefficient of Determination = 0.914	
F-Test Value =846.285		P-Value =000 ^b	

Source: Prepared by the researcher based on the results of the field study, 2025.

As shown in Table (6), there is a statistically significant impact of dynamic pricing as an independent variable (explanatory) on increasing sales as a dependent variable (response variable). This impact is supported by the calculated F-value of (846.285), which is greater than the tabular value at a significance level of (0.000). This indicates that dynamic pricing has an impact on the dependent variable (increasing sales), indicating that the regression curve is good for describing the relationship between the two variables. The estimates indicated a positive linear correlation between the two variables of (.956a). The R-squared value (R²) for dynamic pricing was (.914), indicating that 91.4% of the variation in sales increase is explained by dynamic pricing, and 8.6% is explained by other factors not included in the regression model. Based on the previous model estimates, we reject the null hypothesis and accept the alternative hypothesis, which states that (there is a statistically significant impact of dynamic pricing on increasing sales at Zain Telecommunications Company).

Sub-Hypothesis Two: There is no statistically significant impact of chatbots on increasing sales at Zain Telecommunications Company.

To verify the validity of the hypothesis, the regression method was used to identify the effect of the independent variable (chatbots) on the dependent variable (increasing sales). Table (7) shows the results of the analysis:

Table (7) Results of Regression Analysis for the Impact of Chatbots on Increasing Sales

Independent Variable	Regression Coefficients	T-Test Value	Significance Level (Sig)
Constant Variable	1.238	9.261	.000
Chatbots	.763	23.433	.000
Correlation Coefficient = .934 ^a		Coefficient of Determination = .873	
F-Test Value = 549.108		P-Value = .000 ^b	

Source: Prepared by the researcher based on the results of the field study, 2025.

It is observed from Table (7) that there is a statistically significant impact of chatbots as an independent variable (explanatory) on increasing sales as a dependent variable (response variable). This impact is supported by the calculated F-value of (549.108), which is greater than the tabular value at a significance level of (0.000). This indicates that chatbots have an impact on the dependent variable (increasing sales), indicating that the regression curve is good for describing the relationship between the two variables.

The estimates indicated a positive linear correlation between the two variables of (.934a). The R-squared value (R²) for chatbots was (.873), indicating that 87.3% of the variation in sales increase

is explained by chatbots, and 12.7% is explained by other factors not included in the regression model. Based on the previous model estimates, we reject the null hypothesis and accept the alternative hypothesis, which states that (there is a statistically significant impact of chatbots on increasing sales at Zain Telecommunications Company).

Sub-Hypothesis Three: There is no statistically significant impact of smart content organization on increasing sales at Zain Telecommunications Company.

To verify the validity of the hypothesis, the regression method was used to identify the effect of the independent variable (smart content organization) on the dependent variable (increasing sales). Table (8) shows the results of the analysis:

Table (8) Results of Regression Analysis for the Impact of Smart Content Organization on Increasing Sales

Independent Variable	Regression Coefficients	T-Test Value	Significance Level (Sig)
Constant Variable	.340	1.783	.078
Intelligent Content Organization	.935	21.032	.000
Correlation Coefficient = .920 ^a		Coefficient of Determination = .847	
F-Test Value =442.357		P-Value =.000 ^b	

Source: Prepared by the researcher based on the results of the field study, 2025.

It is observed from Table (8) that there is a statistically significant impact of smart content organization as an independent variable (explanatory) on increasing sales as a dependent variable (response variable). This impact is supported by the calculated F-value of

(442.357), which is greater than the tabular value at a significance level of (0.000). This indicates that smart content organization has an impact on the dependent variable (increasing sales), indicating that the regression curve is good for describing the relationship between the two variables.

The estimates indicated a positive linear correlation between the two variables of (.920a). The R-squared value (R²) for smart content organization was (.847), indicating that 84.7% of the variation in sales increase is explained by smart content organization, and 15.3% is explained by other factors not included in the regression model. Based on the previous model estimates, we reject the null hypothesis and accept the alternative hypothesis, which states that (there is a statistically significant impact of smart content organization on increasing sales at Zain Telecommunications Company).

Sub-Hypothesis Four: There is no statistically significant impact of data analytics (algorithms) on sales growth at Zain Telecommunications Company.

To test the hypothesis, regression analysis was used to examine the effect of the independent variable (data analytics (algorithms)) on the dependent variable (sales growth). The results are presented in Table (9):

Table (9) Results of Regression Analysis for the Impact of Data Analysis (Algorithms) on Increasing Sales

Independent Variable	Regression Coefficients	T-Test Value	Significance Level (Sig)
Constant Variable	-.027-	-.257-	.798
Data Analysis (Algorithms)	1.016	41.783	.000
Correlation Coefficient = .978 ^a		Coefficient of Determination = .956	
F-Test Value =1745.850		P-Value =.000 ^b	

Source: Prepared by the researcher based on the results of the field study, 2025.

It is observed from Table (9) that there is a statistically significant impact of data analysis (algorithms) as an independent variable (explanatory) on increasing sales as a dependent variable (response variable). This impact is supported by the calculated F-value of (1745.850), which is greater than the tabular value at a significance level of (0.000). This indicates that data analysis (algorithms) has an impact on the dependent variable (increasing sales), indicating that the regression curve is good for describing the relationship between the two variables.

The estimates indicated a positive linear correlation between the two variables of (.978a). The R-squared value (R^2) for data analysis (algorithms) was (.956), indicating that 95.6% of the variation in sales increase is explained by data analysis (algorithms), and 4.4% is explained by other factors not included in the regression model. Based on the previous model estimates, we reject the null hypothesis and accept the alternative hypothesis, which states that (there is a statistically significant impact of data analysis (algorithms) on increasing sales at Zain Telecommunications Company).

Thirdly: Results and Recommendations

1. Results: The key findings of the study are summarized below:

- The use of artificial intelligence applications in the company varied, but all were rated highly. Data analysis (algorithms) had the highest mean score (4.24), while chatbots had the lowest (3.99).
- The study found a high level of sales growth in the company, with a mean score of (4.25). This suggests that the company's sales strategies are effective in driving sales growth.
- The study results confirmed a statistically significant impact of artificial intelligence applications combined on increasing sales in

the company, with a coefficient of effect of (92.4%).

- The study results showed a statistically significant impact of dynamic pricing on increasing sales in the company, with a coefficient of effect of (%91.4).
- The study results indicated a statistically significant impact of chatbots on increasing sales in the company, with a coefficient of effect of (%87.3).
- The study results confirmed a statistically significant impact of smart content organization on increasing sales in the company, with a coefficient of effect of (%84.7).
- The study results clarified a statistically significant impact of data analysis (algorithms) on increasing sales in the company, with a coefficient of effect of (%95.6).

Recommendations: In light of the study's findings, the researcher suggests the following:

- Leverage artificial intelligence applications to enhance predictive analytics, sales forecasting, and customer segmentation, thereby optimizing the company's marketing strategies.
- Continue implementing the company's existing sales strategies while regularly monitoring market trends and customer behavior.
- Integrate artificial intelligence applications into all sales and marketing processes to increase revenue growth in the company.
- Develop dynamic pricing models by incorporating competitor pricing data, demand fluctuations, and customer behavior to enhance profitability without negatively impacting customer loyalty.
- Enhance chatbot technology by integrating sentiment analysis (interactions) powered by artificial intelligence to improve customer experience based on purchase history and

preferences, thereby boosting sales growth.

- Leverage smart content analysis, which relies on artificial intelligence, to personalize content delivery to customer segments and analyze their behavior to increase sales.
- Expand the use of data analysis (algorithms) due to their significant impact on predictive analytics, decision-making systems, customer targeting, and overall sales performance in the company.

References:

- (1) Al-Asdodi, N. (2023). The Application of Artificial Intelligence Mechanisms in Digital Marketing and Their Impact on Achieving Competitive Advantages: A Field Study of Experts. *Journal of Media Research*, 67(2).
- (2) Bambawi, H. I. (2023). The Role of Artificial Intelligence and Big Data Technologies in Enhancing the Efficiency of Digital Marketing Methods from the Perspective of Marketing Experts. *Egyptian Journal of Media Research*, (82).
- (3) Al-Hamadi, B., Al-Rashdi, A., Mohammed, H. E., Seif, Z., & Abdullah, S. (2024). The Impact of Promotion on Sales Volume: A Field Study at Al-Mahdhar Company for Food-stuffs, Aden Branch. *Andalus Journal of Humanities and Social Sciences*, 11(106).
- (4) Al-Shahri, W., & Abdullah, S. (2024). The Impact of Using Artificial Intelligence Means on Improving the Quality of Supply Services in the Government Sector: An Applied Study on the Ministry of Human Resources and Social Development in the Kingdom of Saudi Arabia. *Journal of Economic, Administrative, and Legal Sciences*, (8).
- (5) Al-Huweimel, F. S. Q. (2024). The Impact of Applying Artificial Intelligence on Developing Financial Performance in the Hashemite Kingdom of Jordan. *Journal of Humanities and Natural Sciences*, 5(1).
- (6) Al-Wasil, M., Al-Ma'lem, S., Al-Harbi, R., & Al-Rifa'i, M. (2023). The Impact of Artificial Intelligence Techniques on Improving Digital Marketing Strategies. *Journal of the Arab Universities Union for Media and Communication Technology Research*, (11).
- (7) Ismail, A. N. (2021). The Mediating Role of Attitude towards Modern Technologies in the Relationship between the Use of Artificial Intelligence and Marketing Innovation: An Applied Study on the Egyptian E-Retailing Sector. *Journal of Financial and Commercial Research*, 22(3).
- (8) Hajjaj, I. M. A. (2021). The Impact of Using Artificial Intelligence Means on Developing Digital Marketing: An Ap-

- plied Study. Scientific Journal of Commercial and Environmental Studies, 12(4).
- (9) Ridwan, M. A. (2014). Excellence in the Art of Selling and Marketing and its Means of Achievement. Prepared by: Group Experts. Cairo: The Arab Group for Training and Publishing.
- (10) Saif al-Din, Q. (2021). Applications of Artificial Intelligence and their Impact on the Present and Future of E-Marketing: A Case Study of Amazon Company. Journal of Economic Omens, (7).
- (11) Ali, R., & Fathi, D. (2010). Sales Management. Amman: Dar Safaa for Publishing.
- (12) Fadl Allah, A. R., & Aweis, M. (2024). The Impact of Funded Digital Marketing Campaigns on Increasing Sales of Small and Emerging Projects: An Analytical Study on the Electronic Store of the Innovations Factory. Journal of the Arab Universities Union for Media and Communication Technology Research, (12).
- (13) Fahim, N. A. L., Abdel Hamid, T. A., & Amer, A. M. S. (2023). The Impact of Employing Artificial Intelligence Tools on the Effectiveness of Digital Marketing: Applied to Amazon Company. Scientific Journal of Commercial and Environmental Studies, 14(4).
- (14) Lagama, A. A. M., Saleh, S. A. R., & Hijazi, A. A. S. (2023). The Impact of Commercial Advertising on Sales in Telecommunication Companies: A Case Study of Telecommunication Companies in Al-Hasahisa and Rifa'a 2022-2023. Ibn Khaldun Journal for Studies and Research, 3(6).
- (15) Marzouk, S., & Benaoula, H. (2020). The Effect of Perceived Tourism Service Image on Increasing Tourism Agency Sales: A Case Study of a Convenient Sample of Tourists. Journal of Leadership for Business Economics, 6(4).
- (16) Allami, F.A.J., 2020. The impact of Artificial Intelligence Applications on the performance of the External Audit profession. International Journal of Innovation, 13(5).
- (17) Berger, Jonah A., Ashlee Humphreys, Stephan Ludwig,

- Wendy W. Moe, Oded Netzer and David A. Schweidel. (2019). "Uniting the Tribes: Using Text for Marketing Insight." *Journal of Marketing* (84): 1 - 25.
- (18) Gao, B., Wang, Y., Xie, H., Hu, Y., & Hu, Y. (2023). Artificial Intelligence in Advertising: Advancements, Challenges, and Ethical Considerations in Targeting, Personalization, Content Creation, and Ad Optimization. *Sage Open*, 13(4).
- (19) George, Sajan & Sasikala, B & Sopna, P & Umamaheswari, M & Dhinakaran, D.. (2024). Role of Artificial Intelligence in Marketing Strategies and Performance. *Migration Letters*.)21(.
- (20) Golab-Andrzejak, E. (2022). Enhancing Customer Engagement in Social Media with AI - a Higher Education case study. *Procedia Computer Science*, (207).
- (21) Ma, Shaohui, Fildes, Robert (2021) Retail sales forecasting with meta-learning, *European Journal of Operational Research*, Elsevier, 288(1).
- (22) Misra, Kanishka and Schwartz, Eric M. and Abernethy, Jacob. (2019) Dynamic Online Pricing with Incomplete Information Using Multi-Armed Bandit Experiments, *Marketing Science*, 38(2).
- (23) Rosa, W & Bechler, C. (2024). Unveiling the Adverse Effects of Artificial Intelligence on Financial Decisions Via the AI-IMPACT Model. *Current Opinion in Psychology*. (58).
- (24) Stone, M., Aravopoulou, E., Ekinci, Y., Evans, G., Hobbs, M., Labib, A., Laughlin, P., Machtynger, J. and Machtynger, L. (2020), "Artificial intelligence (AI) in strategic marketing decision-making: a research agenda", *The Bottom Line*. 33(2).
- (25) Wamba, S. F. (2022). Impact of artificial intelligence assimilation on firm performance: The mediating effects of organizational agility and customer agility, *International Journal of Information Management*. (67).