



THE RELATIONSHIP BETWEEN USING ARTIFICIAL INTELLIGENCE METHODS IN DEVELOPING DIGITAL MARKETING AT THE OIL MARKETING COMPANY

Researcher: Israa Abdel Hussein Issa,
Imam Ja'afar Al-sadiq University, Baghdad, IRAQ
Israa.abid86@gmail.com

Dr. Hussein Muhammad Saad,
American University of Culture and Education, Lebanon
huosseinsaad@yahoo.com

A B S T R A C T	KEY WORDS
<p>The study aimed to demonstrate the relationship of the use of artificial intelligence in developing digital marketing at the Oil Marketing Company, by applying this study to the employees of the (SOMO) Oil Marketing Company, and on an innovation consisting of 120 people at the (SOMO) Oil Marketing Company in an intentional manner. The use was used Description Analytical, a statement regarding the variables of the study must be excluded, and it will be distributed to the colored figures of the study, and it will be compiled, analyzed, and the hypotheses for the study will be tested through the use of the statistical packages program (SPSS), where it has been communicated that: There is a statistically significant relationship between artificial intelligence in the development of digital marketing. There is a statistically significant relationship between the diversity in the use of social media in marketing in the development of digital marketing, and the existence of a statistically significant relationship between the diversity in digital advertising in the development of digital marketing, in addition to the existence of a statistically significant relationship between the diversity of after-sales services in The development of digital marketing, and the existence of a statistically significant relationship between the use of e-mail in the development of digital marketing.</p>	<p>Artificial intelligence - marketing - digital oil marketing company.</p>

Introduction

Technology is considered the best tool in our present world, which is constantly changing to meet the needs of the future, advance any society, and ensure the well-being and happiness of individuals (Hajjaj, 2021, p. 21). In light of the successive developments of modern technological means used in

organizations, the organization no longer relies on the traditional use of needs in the workplace. Technology has easily made room for communication within organizations, and has worked to improve their management and work to upgrade and advance them towards a new and better institutional reality based on advanced technology, the most important of which is artificial intelligence.

The great technical development contributes to the increasing role of artificial intelligence in the development of various sectors - including marketing (Al-Joboy, 2020, p. 26). Marketing based on artificial intelligence can contribute to improving brand positioning, the relationship with customers, and advertising, that is, in almost all aspects of marketing. Similar to the competencies that are relied upon in manufacturing and controlling quality errors (Al-Hawamdeh, 2019).

Marketing with artificial intelligence is done by relying on artificial intelligence to collect customer and company data and use this data to implement things that a person or group cannot implement. Artificial intelligence can improve marketing campaigns and customer journeys, as well as attract, nurture, and convert potential customers into business customers (Al-Fagi, 2012, p12).

Despite the technical progress in artificial intelligence methods, and its importance in developing the field of electronic marketing, and what artificial intelligence methods can provide in terms of collecting and classifying customer data (Bosnan, 2012, p14), identifying needs and creating effective means of communication that lead to quality marketing. Digital marketing in the (SOMO) oil company is the subject of the current study, as the researchers noticed the weakness of the electronic marketing methods in the company, and the lack of use of artificial intelligence methods, which confirms the importance of the study and thus the problem of the study appeared.

Objectives of the Study

The study aims to identify the relationship between the use of artificial intelligence methods in developing digital marketing at the Oil Marketing Company, through:

- Learning about the relationship between the variable artificial intelligence and the development of digital marketing
- Identify the relationship between the variable use of social media in marketing and the development of digital marketing
- Identify the relationship between the digital advertising variable and the development of digital marketing
- Recognizing the relationship between variable after-sales services and digital marketing development
- Identify the relationship between the variable use of email and the development of digital marketing.

The importance of studying

-The importance of this study is due to the modernity in the use of artificial intelligence methods in general, and in digital marketing in particular, which makes it a focus of interest for the student and researcher, and the study aims to know its effects, aspects of its application, and aspects associated with it. Especially since artificial intelligence is one of the elements of the future of marketing in the present time.

-The results of the current study benefit Oil Company in finding a modern way to develop its digital marketing.

-The current study benefits researchers to benefit from the research point and develop their scientific research in the field of artificial intelligence and digital marketing.

The problem of the study

Based on what was mentioned in the introduction to the study regarding the narration of the importance of artificial intelligence and development in digital marketing, and what the researchers observed of the increasing interest in digital marketing in the field of marketing through reviewing published research and periodicals that dealt with the variables of the current study, and based on prior knowledge of the importance of the marketing process in companies. Which is used to increase the effectiveness and success of marketing, by exploiting time, and providing all interaction and communication procedures at all time periods, which can be achieved through means of artificial intelligence. Therefore, the problem of the study is to know the impact of means of using artificial intelligence in developing digital marketing at Oil Company in Iraq.

The problem of the study can be represented by answering the following main question: What is the relationship between using artificial intelligence methods in developing digital marketing at Oil Marketing Company?

Study questions

From the main question that was posed above in the problem of the study, several sub-questions are branched out:

- What is the relationship of the artificial intelligence variable in the development of digital marketing?
- What is the relationship of the variable of using social media in marketing to the development of digital marketing?
- What is the relationship of the digital advertising variable in the development of digital marketing?
- What is the relationship of the after-sales service variable in the development of digital marketing?
- What is the relationship of the variable use of email to the development of digital marketing?

Study hypotheses

The study hypotheses were formulated as follows:

Main hypothesis: There is a statistically significant relationship between the dimensions of the means of using artificial intelligence and the development of digital marketing at the oil marketing company.

The following sub-hypotheses branch out from the main hypothesis:

The first sub-hypothesis: There is a statistically significant relationship between the artificial intelligence variable in the development of digital marketing

The second sub-hypothesis: A statistically significant relationship was found between the variable of using social media in marketing and the development of digital marketing

The third sub-hypothesis: There is a statistically significant relationship between the digital advertising variable in the development of digital marketing

-The fourth sub-hypothesis: There is a statistically significant relationship between the after-sales services variable in the development of digital marketing

The fifth sub-hypothesis: There is a statistically significant relationship between the variable of using email in developing digital marketing

Study Approach

The current study followed the descriptive analytical approach, which aimed to identify methods of artificial intelligence methods in developing digital marketing. It also used a survey of a sample of employees of the Oil Marketing Company on digital marketing and its development.

Study population

The study population consists of employees of the oil marketing company

The study sample

The study sample consisted of 120 employees of the oil marketing company in a purposive manner.

Data collection tool

Data for the study was collected through a special questionnaire that was designed based on previous studies.

Study model

The relationship model between the study variables was built according to the following:

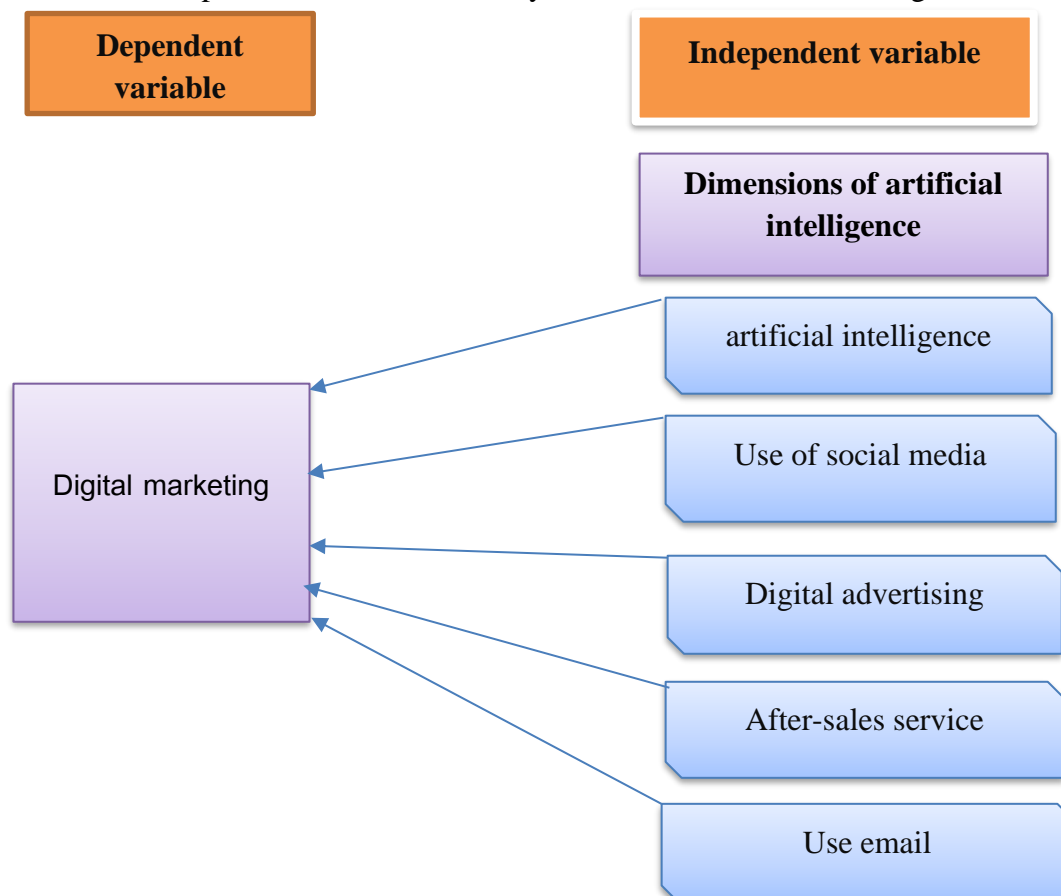


Figure 1: The relationship between the study variables

Source: Prepared by the researchers based on previous studies (Hajtaj, 2021), (Salah, 2020).

The concept of artificial intelligence:

Artificial intelligence refers to systems that mimic human intelligence to perform tasks and that can improve themselves based on the information they collect. It is related to the ability to think superiorly and analyze data more than it is related to a specific place or function. It is also used in a number of tasks, which process natural languages to understand customers and allow them to ask questions and obtain information. These robots can also learn over time so that they can add greater value to customer interactions. And also understand customer problems faster and provide more efficient answers (Dimitris, 2019, p12).

The concept of digital marketing:

The concept of electronic marketing is one of the new and innovative concepts in the world of marketing. It is noted that its concept has a kind of ambiguity. This is due to the belief that marketing only takes place through the Internet. This reason confirms the importance of giving an accurate definition of electronic marketing through marketing and its functions via All digital technologies, and there are those who believe that electronic commerce is electronic marketing (Dan, 2019, p12).

Applied study**Study Approach**

The current study falls within the framework of descriptive survey studies that aim to identify the relationship between the use of artificial intelligence methods in developing digital marketing at the (SOMO) Oil Marketing Company on a sample of the company's employees specializing in marketing. The questionnaire was used as a study tool to collect data, classify it, analyze it, interpret it, and draw conclusions.

Reliability using Cronbach's alpha method

The researchers calculated the alpha coefficient for each scale used in the study in order to test the reliability of these scales. Table No. (1) shows the values of the Cronbach's alpha coefficient.

Table No. (1): Alpha coefficient for each scale used in the study

Variables	The value of Cronbach's alpha coefficient	Number of paragraphs
Dimensions of artificial intelligence		
Artificial intelligence variable	0.604	5
Social media use variable	0.845	5
Digital advertising variable	0.751	5
After-sales service variable	0.816	5
Email usage variable	0.714	5

Source: Prepared by the researchers based on the outputs of the statistical program (SPSS).

The table above indicates that all Cronbach's alpha reliability values for the variables of the study tool were greater than 0.6, which means a high degree of reliability and validity of the content of the study variables.

Description of the study sample

The researchers determined some features of the study sample's vocabulary using statistical standards, as follows:

Table No. (2): Characteristics of the study sample

Type	the number	%
Gender		
male	79	%68.8
Females	41	%34.2
job position		
president	2	%1.7
vice president	4	%3.3
Head of the Department	14	%11.7
employee	100	%83.3
Years of Experience		
From 1 to 5 years	24	%20
From 6 years to 10 years	51	%42.5
From 11 years to 15 years	15	%12.5
From 16 years and over	30	%25

Source: Prepared by the researchers based on the outputs of the statistical program (SPSS).

Results of descriptive statistics for the study variables

The two researchers described the opinions of the study sample with regard to all study variables, and statistical analyzes were conducted on the collected data to prove some of the relationships that serve the research, using the statistical package program SPSS, represented by the standard deviation, the arithmetic mean, the relative importance, and the item score and its level.

Results of the descriptive statistics of the opinions of the study sample regarding the variable artificial intelligence**Table No. (3): Artificial Intelligence variable**

Number of Paragraphs	Standard Deviation	Mean	Result	Level	Relative Importance	Rank
1	I deal with social media easily					
	0.871	4.08	agree	High	%81.6	3
2	I have the ability to interact with interactive chatbots					
	0.843	4.06	agree	High	%81.2	4
3	I have the ability to use search engines to obtain information					
	0.721	4.28	agree	High	%85.6	1
4	Use e-mail to receive and send information					
	0.693	4.20	agree	High	%84	2
5	Oil Marketing Company provides its services and assistance through the website					
	0.849	4.03	agree	High	%80.6	5

Source: Prepared by the researchers based on the outputs of the statistical program (SPSS).

The data presented in the table above show that the highest arithmetic mean is for paragraph (3), which states: "I have the ability to use search engines to obtain information," as its value reached

(4.28), and its standard deviation represents (0.721), and it was the result of the opinions of individuals. The study sample agreed with the content of the paragraph, and the importance percentage was (85.6%), and its level was high. While the lowest arithmetic mean is for paragraph (5), which states: "The Oil Marketing Company provides its services and assistance via the website," where its value was (4.03), and its standard deviation represented (0.849), and the result of the opinions of the study sample members was agreement to The content of the paragraph was (80.6%) important, and its level was high.

Results of the descriptive statistics of the opinions of the study sample regarding the variable of using social media in marketing

Table No. (4): The variable of using social media in marketing

Number of Paragraphs	Standard Deviation	Mean	Result	Level	Relative Importance	Rank
1	I have an account on Facebook, Twitter and Instagram					
	0.784	3.92	agree	High	%78.4	5
2	I love engaging with social media					
	0.803	4.17	agree	High	%83.4	3
3	I am interested in following product announcements through social media					
	0.830	4.32	agree	High	%86.4	2
4	I am interested in communicating at any time through social media					
	0.769	4.33	agree	High	%86.6	1
5	Use social media to advertise products					
	0.818	4.11	agree	High	%82.2	4

Source: Prepared by the researchers based on the outputs of the statistical program (SPSS).

The data presented in the table above show that the highest arithmetic mean is for paragraph (4), which states: "I am interested in communicating at any time through social media." Its value reached (4.33), and its standard deviation represented (0.830), and it was the result of the opinions of individuals. The study sample agreed with the content of the paragraph, and the importance percentage was (86.4%), and its level was high. While the lowest arithmetic mean is for paragraph (1), which states: "I have an account on Facebook, Twitter, and Instagram," where its value was (3.92), and its standard deviation was (0.784), and the result of the opinions of the study sample members was agreement with the content of the paragraph, the importance percentage was (78.4%), and its level was high.

Results of the descriptive statistics of the opinions of the study sample regarding the digital advertisements variable

Table No. (5): Digital advertising variable

Number of Paragraphs	Standard Deviation	Mean	Result	Level	Relative Importance	Rank
1	I am interested in publishing advertisements through the media					
	0.822	4.28	agree	High	%85.6	1
2	The creative design in the advertisement attracts attention					
	0.710	4.02	agree	High	%80.4	4
3	Advertising products through electronic applications attracts more attention than traditional advertisements					
	0.952	4.21	agree	High	%84.2	3
4	(SOMO) Oil Marketing Company allocates a sufficient budget for digital advertising					
	1	3.98	agree	High	%79.6	5
5	I can determine the target groups in digital advertising					
	0.957	4.22	agree	High	%84.4	2

Source: Prepared by the researchers based on the outputs of the statistical program (SPSS).

The data presented in the table above show that the highest arithmetic mean is for paragraph (1), which states: “I care about publishing advertisements through the media,” as its value reached (4.28), and its standard deviation represented (0.822), and the result of the opinions of the study sample members was The percentage of approval on the content of the paragraph was (85.6%), and its level was high. While the lowest arithmetic mean is for paragraph (4), which states, “The (SOMO) Oil Marketing Company allocates a sufficient budget for digital advertising,” as its value reached (3.98), and its standard deviation represents (1), and the result of the opinions of the study sample members was agreement with the content. paragraph, the importance percentage was (79.6%), and its level was high.

Results of the descriptive statistics of the opinions of the study sample regarding the after-sales services variable

Table No. (6): After-sales services variable

Number of Paragraphs	Standard Deviation	Mean	Result	Level	Relative Importance	Rank
1	I can provide after-sales services at any time through the website					
	0.944	4.18	agree	High	%83.6	2
2	We communicate with the customer on an ongoing basis					
	1	4.04	agree	High	%80.8	4
3	(SOMO) Oil Marketing Company is interested in training employees on digital marketing through electronic applications					
	0.922	4.13	agree	High	%82.6	3
4	(SOMO) Oil Marketing Company uses an automated customer response method to provide direct support to the customer					
	1	3.97	agree	High	%79.4	5
5	The Oil Marketing Company website contains a database of all clients					
	0.900	4.22	agree	High	%84.4	1

Source: Prepared by the researchers based on the outputs of the statistical program (SPSS).

The data contained in the table above show that the highest arithmetic mean is for paragraph (5), which states, “The Oil Marketing Company’s website contains a database of all customers,” as its value reached (4.22), and its standard deviation represented (0.9), and it was the result of opinions The members of the study sample agreed with the content of the paragraph, and the importance percentage was (%), and its level was high. While the lowest arithmetic mean is for paragraph (4), which states, “The (SOMO) Oil Marketing Company uses an automated response method to the customer to provide direct support to the customer,” where its value was (3.97), and its standard deviation represents (1), and it was the result of the opinions of the sample members. The study aimed to agree on the content of the paragraph, and the importance percentage was (79.4%), and its level was high.

Results of the descriptive statistics of the opinions of the study sample regarding the variable of using e-mail

Table No. (7): Email usage variable

Number of Paragraphs	Standard Deviation	Mean	Result	Level	Relative Importance	Rank
1	(SOMO) Oil Marketing Company has an email account					
	1	4.03	agree	High	%80.6	4
2	I use e-mail in advertising					
	1	4.02	agree	High	%80.4	5
3	You can respond to customers and send announcements via email in an automated manner					
	1	4.09	agree	High	%81.8	2
4	Interests in digital marketing among company members are increasing					
	0.995	4.05	agree	High	%81	3
5	Email helps you see all the latest news from Oil Marketing Company quickly and easily					
	1	4.13	agree	High	%82.6	1

Source: Prepared by the researchers based on the outputs of the statistical program (SPSS).

The data presented in the table above show that the highest arithmetic mean is for paragraph (5), which states: “E-mail helps to see everything new at Oil Marketing Company quickly and easily,” as its value reached (4.13), and its standard deviation represents (1), The result of the opinions of the study sample members was agreement with the content of the paragraph, and the importance percentage was (82.6%), and its level was high. While the lowest arithmetic mean is for paragraph (2), which states, “I use e-mail for advertising,” as its value reached (4.02), and its standard deviation represents (1). The result of the opinions of the members of the study sample was agreement with the content of the paragraph, and it was The percentage of importance was (80.4%), and its level was high.

Testing the study hypotheses

This study carried a main hypothesis and five sub-hypotheses branched out from it. They were all investigating the relationship between the dimensions of the means of using artificial intelligence and the development of digital marketing. In order to examine the study’s hypotheses, automated

processing was relied upon using the statistical package system (SPSS), and using the Pearson statistical method, which resulted in the following results:
Main hypothesis test: There is a statistically significant relationship between the dimensions of the means of using artificial intelligence and the development of digital marketing at the oil marketing company.

Table No. (8): Correlation coefficient between dimensions of artificial intelligence and digital marketing development

Variables	Correlation coefficient value	Statistical significance	Result
Dimensions of artificial intelligence		0.000	Significant at 0.01
Artificial intelligence variable	0.932		
Social media use variable	0.934		
Digital advertising variable	0.973		
After-sales service variable	0.966		
Email usage variable	0.958		

Source: Prepared by the researchers based on the outputs of the statistical program (SPSS).

From the table above it is noted that the probability value (0.000) is less than (0.01), and therefore there is a statistically significant relationship between at the significance level of 0.01, and with a correlation coefficient estimated at (0.932), for the artificial intelligence variable, and (0.943) for the social media use variable, (0.973) for the digital advertising variable, (0.966) for the after-sales services variable, and (0.958) for the email use variable.

Testing the first sub-hypothesis: There is a statistically significant relationship between the artificial intelligence variable in the development of digital marketing

Table No. (9): Correlation coefficient between the artificial intelligence variable and digital marketing development

Variables	Correlation coefficient value	Statistical significance	The result
Artificial intelligence variable	0.943	0.000	Significant at 0.01
Digital marketing			

Source: Prepared by the researchers based on the outputs of the statistical program (SPSS).

From the table above, it is noted that the probability value (0.000) is less than (0.01), and therefore there is a statistically significant relationship between the artificial intelligence variable and digital marketing development at the significance level of 0.01, with a correlation coefficient estimated at (0.943).

Testing the second sub-hypothesis: There is a statistically significant relationship between the variable of using social media in marketing and the development of digital marketing

Table No. (10): Correlation coefficient between the variable of using social media and the development of digital marketing

Variables	Correlation coefficient value	Statistical significance	Result
Social media use variable	0.880	0.000	Significant at 0.01
Digital marketing			

Source: Prepared by the researchers based on the outputs of the statistical program (SPSS).
From the table above, it is noted that the probability value (0.000) is less than (0.01), and therefore there is a statistically significant relationship between the variable of using social media and the development of digital marketing at the significance level of 0.01, with a correlation coefficient estimated at (0.880).

Testing the third sub-hypothesis: There is a statistically significant relationship between the digital advertising variable in the development of digital marketing

Table No. (11): Correlation coefficient between the digital advertising variable and digital marketing development

Variables	Correlation coefficient value	Statistical significance	Result
Digital advertising variable	0.973	0.000	Significant at 0.01
Digital marketing			

Source: Prepared by the researchers based on the outputs of the statistical program (SPSS).

From the table above, it is noted that the probability value (0.000) is less than (0.01), and therefore there is a statistically significant relationship between the digital advertising variable and the development of digital marketing at the significance level of 0.01, with a correlation coefficient estimated at (0.973).

Testing the fourth sub-hypothesis: There is a statistically significant relationship between the after-sales services variable in the development of digital marketing

Table No. (12): Correlation coefficient between the after-sales services variable and digital marketing development

Variables	Correlation coefficient value	Statistical significance	Result
After-sales service variable	0.966	0.000	Significant at 0.01
Digital marketing			

Source: Prepared by the researchers based on the outputs of the statistical program (SPSS).
From the table above, it is noted that the probability value (0.000) is less than (0.01), and therefore there is a statistically significant relationship between the after-sales services variable and digital marketing development at the significance level of 0.01, with a correlation coefficient estimated at (0.966).

Testing the fifth sub-hypothesis: There is a statistically significant relationship between the variable of using email in developing digital marketing

Table No. (13): Correlation coefficient between the variable of using email and the development of digital marketing

Variables	Correlation coefficient value	Statistical significance	Result
Email usage variable	0.958	0.000	Significant at 0.01
Digital marketing			

Source: Prepared by the researchers based on the outputs of the statistical program (SPSS).

From the table above, it is noted that the probability value (0.000) is less than (0.01), and therefore there is a statistically significant relationship between the variable of using email and the development of digital marketing at the significance level of 0.01, with a correlation coefficient estimated at (0.958).

Conclusion

It is evident from the above results

- 1-There is a statistically significant relationship between the dimensions of the means of using artificial intelligence and the development of digital marketing at the oil marketing company.
- 2-There is a statistically significant relationship between the variable artificial intelligence in the development of digital marketing
- 3-There is a statistically significant relationship between the variable of using social media in marketing and the development of digital marketing
- 4-There is a statistically significant relationship between the digital advertising variable in the development of digital marketing
- 5-There is a statistically significant relationship between the after-sales services variable in the development of digital marketing
- 6-There is a statistically significant relationship between the variable of using email in developing digital marketing
- 7- A large number of employees use the Internet and its applications, meaning that they have an increased desire for this field, which prompts marketers to deal with the Internet because it is a positive and effective market, easy to use and available to many users.
- 8-The importance of using data and information and what is easily provided by artificial intelligence methods, which are useful in digital marketing that can be collected and obtained through social media.
- 9- Attention is paid to digital advertisements for products, which draw the attention of users to (SOMO)'s products through creative publishing and design. Artificial intelligence methods help speed up the publication of advertisements and create an atmosphere of effective communication.
- 10- Artificial intelligence means achieve the most important principles of digital marketing quality through after-sales service, as artificial intelligence means provide automatic response features that allow communication at any time and from anywhere, which achieves interactivity.

Recommendations

Based on the above results, the researchers recommend the following:

- 1-Work more on using the dimensions of artificial intelligence in developing digital marketing at the Oil Marketing Company. This is of great importance in reaching correct marketing decisions.
- 2-Focus on using artificial intelligence methods to use search engines to obtain information about the Oil Marketing Company.
- 3- Developing the skills of employees at the (SOMO) Oil Marketing Company with the aim of dealing with artificial intelligence methods to a large extent. This would work to program the work of employees in a technological manner that qualifies them to deal with modern methods more effectively.
- 4- Linking the process of applying artificial intelligence methods and developing digital marketing in the (SOMO) Oil Marketing Company, in a way that strengthens the various administrative levels in the company.
- 5- Holding several workshops on the dimensions of artificial intelligence and development of digital marketing at the (SOMO) Oil Marketing Company, as well as asking employees to prepare research and studies related to this to increase the application of the dimensions of artificial intelligence in the company.
- 6-The need to pay more attention to the practice of applying artificial intelligence methods in order to develop marketing strategies.

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