

The Effect of Applying Artificial Intelligence in Shaping Marketing Strategies: Field Study at the Jordanian Industrial Companies

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Abstract

This study aimed at identifying the effect of applying artificial intelligence in shaping marketing strategies in the industrial companies listed in Amman stock market. The sample consisted of (65) marketing managers of the companies incorporated in the study. The study revealed the existence of an effect of applying artificial intelligence in shaping marketing strategies (cost leadership, differentiation, focus, alliance, diversification and direct marketing).

In the light of the results, the researchers offered a number of recommendations the most prominent of which are: Practicing better use of modern and developed technological programs based on artificial intelligence styles, connecting between the application of artificial intelligence styles and the development of marketing strategies in a way that fosters the attention to embrace developed new products and giving more care to the implementation of artificial intelligence styles.

Key words: Artificial intelligence, marketing strategies, industrial companies

Introduction

Artificial intelligence is one of the computer's sciences that seeks developed methods to be programmed to perform actions and deduction similar, even if in narrow limits, to those of human intelligence. It is a science that initially defines human intelligence, specifies its limits and then simulates some of its characteristics. This science aims at understanding the complicated mental processes of human brain and then interpreting those mental processes to equivalent computer processes that increase the ability of the computer to solve sophisticated problems. The origins of artificial intelligence science are found in researches that study (Representation Model) styles in the computer's memory and (Search & Match Methods) among its elements, (Goal Reduction) in addition to different kinds of reasoning such as logic, analogy or induction.

The computer's artificial intelligence is identified as the ability to represent computer models to one of life fields, specifying the basic relations among its elements then originating the reactions that suit the events and attitudes of field. Subsequently, artificial intelligence is first related to representing a computer model to a certain field then retrieving and developing it and secondly to its analogy with the attitudes and events of the research field to reach useful reasoning's.

As for marketing strategy, it is the way through which resources are allocated, distributed and used to fulfill the needs and desires of consumers and establish a competitive advantage for the company. As a result, it is a work scheme to specify and analyze the target market and develop a marketing blend to meet the needs and desires of that market. Taking into consideration that marketing strategy is based on specifying the tracked message, marketing and financial goals, specifying the intended groups and needs through marketing offers and then pinpointing the competitive state of the production lines that contribute in accomplishing the goals of the plan;

it is also possible to benefit from the applications of artificial intelligence to realize the goals of marketing strategy and developing the performance by using sub-strategies such as developing after sales services, predicting the market, developing new market segments, analyzing market portion and other strategies.

Using these facts, and in order to obtain more understanding to shaping marketing strategies by using artificial intelligence applications in the Jordanian industrial companies listed in Amman stock market, this study comes to identify the effect of applying artificial intelligence in shaping marketing strategies through a field study in those companies.

The Study`s Problem

In spite of the numerous researches on the Arabic and international levels on the subject of marketing strategies, Arabic efforts skill need a lot of enrichment due to the importance of the issue and marketing and technological changes that are greatly developed depending on using artificial intelligence style that requires the necessity of keeping up with these changes especially in the domain of shaping marketing strategies.

This research is trying to answer the following key question: "Is there any effect of applying artificial intelligence in shaping marketing strategies in the industrial companies listed in Amman stock market?", and from this question emerged the following sub-questions:

1. Is there an effect of applying artificial intelligence in shaping cost leadership strategy?
2. Is there an effect of applying artificial intelligence in shaping cost differentiation strategy?
3. Is there an effect of applying artificial intelligence in shaping cost focus strategy?
4. Is an effect of applying artificial intelligence in shaping cost alliance strategy?
5. Is there an effect of applying artificial intelligence in shaping cost diversification strategy?
6. Is there an effect of applying artificial intelligence in shaping cost direct marketing strategy?

The Study`s goal

This study aims at identifying the effect of applying artificial intelligence on shaping marketing strategies from the perspective of marketing managers in the industrial companies listed in Amman stock market.

The study`s Importance

The importance of this research stems from that it depends on inducing and diagnosing the present situation of artificial intelligence applications and their effect in shaping the marketing strategies of the industrial companies listed in Amman stock market. In addition, artificial intelligence science programs are useful in many areas of daily life which has become digital! Even though no one can predict future, it is clear that the computer together with human intelligence will have a huge and obvious impact on daily life.

The Study`s Hypothesis

This study is based on the following main hypothesis: "There is no effect of applying artificial intelligence in shaping marketing strategies in the industrial companies listed in Amman stock market. From this hypothesis stemmed the following sub-hypothesis:

1. There is no effect of applying artificial intelligence on shaping cost leadership strategy.
2. There is no effect of applying artificial intelligence on shaping differentiation strategy.
3. There is no effect of applying artificial intelligence on shaping focus strategy.
4. There is no effect of applying artificial intelligence on shaping alliance strategy.
5. There is no effect of applying artificial intelligence on shaping direct marketing strategy.

Procedural Definition

Artificial Intelligence: It is one of the modern computer sciences that detect developed methods to perform actions and deductions similar, even if in narrow limits, to those of human intelligence. Marketing strategies:

The strategies adopted by a company to realize duration and continuity in the target markets. Cost leadership strategy: It is the company's commitment to be the least costly producer in its domain of specialty plus keeping an acceptable standard of quality.

This includes choosing and targeting the profitable customer, getting use of the advantages of economic size purchase, selecting local raw materials that meet the required specifications if available, following laborsaving policy and increasing productivity, presenting typical products in a specific collection and using technology in all production stages which lessens and controls the general and promotion costs. Differentiation strategy: It is to differentiate the company's products from those of the competitors' and make them favorable to customers in the target markets. This includes accurate understanding to the customers' needs, expenditure on researches and studies, meeting customers' needs, expenditure on researches and studies, meeting customers' needs and offering products of higher quality. Focus strategy: It is the specialty to produce the product to a specific sector in the target markets. This includes choosing the market sector in which the company can realize competitive advantages, control costs and increase the affectivity of marketing activities.

Alliance Strategy: It is joining blocs of similar companies that lead to vertical and horizontal integration in the target markets in order to compete with foreign products and integrate with raw materials suppliers, agents and sales outlets. Diversification strategy: It is offering diverse collection of products to meet the requirements of the target markets. This includes presenting different products, offering a new collection of products to new markets and depending on independent suppliers of raw materials and production inputs. Direct marketing strategy: this is the company's dependence on the available data basic, care for the continuity of updating information about its products, direct marketing communication and direct distribution to its clients in the target markets.

Methodology of the Study

The Study's Population and Sample

The population of study included all the industrial companies listed in Amman stock market counting (84) companies (monthly bulletin of Amman stock market, November 2011). The questionnaires were distributed on the marketing managers of those companies using census method. (69) Questionnaires which rated (82.1%) were recollected and by sorting them out, four questionnaires were excluded due to information incompleteness whereby the sample rested on (65) managers of said companies which were analyzed realizing a percentage of (77.38%) of total population.

Analysis Unit

To achieve the purpose and aim of the study, the researchers collected data and information about the present study's variables depending on a sampling unit which included all marketing managers in the industrial companies listed in Amman stock market.

The Study's Type and Nature

This study can be considered as a descriptive analytical study as the researchers used the descriptive method to describe the concepts related to artificial intelligence and marketing strategies in addition to analyzing its variables to deal with when testing its hypothesis and declaring the results and recommendations of the study. The researchers conducted this study in the real environment of the companies without any restrictions or pressures that might control the final results and negatively reflect on the recommendations. Therefore, the present study is considered a field study as the collected information has been taken directly from the marketing managers. It is also an analytical deductive study as the researchers have used the quantitative approach to collect information from clients through a specially designed questionnaire for the purposes and aims of this study and its prospective course.

Data Sources

The researchers relied on two kinds of sources which are: Secondary sources such as management books, scientific materials, and specialized bulletins and periodicals that look into artificial intelligence and marketing strategies; as well as primary sources through designing and developing a written questionnaire for the subject matter of this study.

Furthermore, to check the reliability of the tool and its ability to measure the study's variables, it was presented to a jury of specialized experts in addition to extracting the internal consistency coefficient using (Cronbach's Alpha) amounting to (92.47%) which is considered an excellent dependable percentage to adopt the results of present study.

The Statistical Methodology of the Study

The researchers used the statistical methods of (spss) to analyze data where they depended on arithmetic means to identify the importance of the questionnaire's expressions. They also used standard deviation to clarify the scope of responses' dispersal off their arithmetic means plus using simple regression analysis to test the hypothesis.

Previous Studies

The study of Saleh, Faten (2009) aimed at identifying the effect of applying and using artificial intelligence and emotional intelligence methods in taking decisions. The study revealed a positive correlation between the application of artificial intelligence method and the quality of administrative decisions due to the fact that the administrative manager cannot take decisions in separation of using the tools and methods of artificial intelligence because of the multiplicity of administrative jobs and levels. The results also revealed a positive statistical significant relationship between motives as one of emotional intelligence applications and the quality of decision making. Moreover, the results pointed out a positive statistical significant relationship between the type of the used intelligent program and the quality of decision making where they indicated that the intelligent program will generate high quality administrative decisions contrary to other traditional systems.

The study of Abdil-Majeed, KutaibahMazen, (2009) aimed at identifying the effect of using artificial intelligence in electrical engineering applications. The study showed that the neural network tends to modeling tools whereupon we get higher amount of information. The neural network is recommended to be used in projects that need detecting a relationship between the information and the required results. The study also indicated that genetic algorithm s technique is used to identify the best values the system gets, therefore, it is recommended to be used with the projects that an idealistic outcome between the outputs. In the study of MichealNegnevistky, (2008), he pointed out that expert systems are they key of real success in the field of artificial intelligence despite the large number of intelligent developments in the different domains of human knowledge. It would be wrong to exaggerate in appreciating the capabilities of this technique as the difficulties are very complicated and located in both technical and social worlds. The study also revealed that expert systems are confined to a limited experience range that attends all the related human psychological factors: And as result to this tight range, the expert systems lack being flexible and consistent as the user wishes as when an expert system is given a task that differs from the traditional problems, it might or might not be able to solve it.

The study of Robert Craig (2001) indicated that when the organization needs to take a decision to solve a complicated problem, it usually resorts to the advice of experts who have enough experience about the nature of the problem and realize the available alternatives, success chances and expected costs. The results of the study also stated that the expert systems are, in fact, decision making systems or any computers or software to solve problems that can reach a certain level of performance that equals or even goes beyond that of human experts in some specialties especially in solving obstinate knots, and that expert systems are naturally an applied branch of artificial intelligence that has certain applications in medical diagnosis, metal exploration and computer hardware. Furthermore, expert systems prevail in some complicated applied domains such as real estate management, power management, companies' plans and error analysis.

The Theoretical Frame

Only humans are described with sanity as mental abilities of man are very important for all life affairs. The domain of artificial intelligence is to mechanize human intelligence and study its mental abilities. One of the most important reasons to study artificial intelligence is trying to understand human brain processes away from philosophy, psychology and anatomy which also care for human brain. Artificial intelligence, as a science, seeks to construct intelligence to the extent that attends understanding that intelligence. The domain of artificial intelligence is regarded as one of the most successful domains today as it has already moved from the phase of research and investigation to the grounds of commercial use. The applications of artificial intelligence proved high efficiency in many fields and was applicable in companies and industrial and non-industrial establishments.

Artificial intelligence aims at enabling the computer to simulate the intelligence processes that take place in the human brain in a way that makes the computer able to solve problems, take logical and well organized decisions the same way in which the human brain thinks, model computer programs for any domain in life and improve the basic relations among its elements (Mahmoud andAtyyat, 2006).

Artificial Intelligence

The term "intelligence" incorporates many mental capabilities related to the ability to analyze, plan, solve problems and practice fast mental simulation. It also includes the capacity of concrete thinking, collecting and coordinating ideas, grasping languages and fast learning. Although the prevailing general concept of intelligence as a behavioral privilege independent from creativity, character, wisdom and even the power of conning related to memory. Artificial intelligence is a branch of computer science that aims to make computers perform tasks nearly similar to human intelligence processes such as learning, deduction and decision making. Artificial intelligence, as a term, is given to the most recent computer science which belongs to the most recent computer science which belongs to the modern generation of the computer. It aims at making the computer simulate the intelligence processes inside the human brain and to give it the ability to solve problems and make logical and well organized decisions like the human brain. These Processes Include:

1. Learning: Acquiring information and the rules that use this information.
2. Explanation: using previous rules to arrive at approximate or fixed conclusions.
3. Spontaneous or self-correction.

Artificial intelligence is one of computer science branches that cares for mechanizing the intelligent behavior in humans and for which we need:

1. Data system: Used to model information and knowledge.
2. Algorithms to outline the the way of using this information.
3. Software language to model the information and algorithms.

The science of artificial intelligence is in search for developed methods to be programed to perform deeds and inferences similar, even if in narrow limits, to those ascribed to human intelligence. Herewith, it is science that first looks into defining human intelligence, limiting its dimensions them simulating some of its characteristics. It is necessary here to explain that this science does not try to compare or resemble the human brain that is created by God, to whom belongs might and majesty, to a machine made by man but aims at understanding the complicated mental processes performed by human brain while practicing "thinking" then interpreting those processes to equivalent computer processes that increase its ability to solve complicated problems (Al-Hisaini, p: 211).

Human Intelligence

Allah the Almighty says in his noble Quran: "And among His signs is that He shows you the lightning, for fear and for hope, and He sends down water (rain) from the sky, and therewith revives the earth after its death. Verily, in that are indeed signs for a people who understand".Allah, to whom belongs Might and Majesty, also says: "verily, in the creation of the heavens and the earth, and in the alternation of night and day, there are indeed signs for men of understanding". These noble verses indicate the importance of mental processes first in distinguishing the human being from other creatures and secondly to differentiate one person from another. Although intelligence is one of the most important processes or activities performed by human mind, it is hard to define accurately: Is it the ability to deduce? Is it the ability to obtain and apply knowledge? Or the capability to comprehend, imagine and influence things in the sensory world? There is no need to involve in deep philosophical debate as intelligence can be defined with all that and even more. In wide scope intelligence may contain all mental processes such as giftedness, innovation and control of movement, senses and emotions. As for the domain of studying artificial intelligence of computers, it can be defined within the humans ability to conceive things, analyze their characteristics and make inferences, thus, it represents man`s ability to develop a mental model of one life`s domains, specify its elements and extract their interrelations then generate the reactions that suit the events and attitudes of that domain.

Of the most important benefits of this mental model which is unintentionally generated by man is that it helps him to specify the facts which are related to subject matter of the research and simplify the complicated steps of the real image. If, for example, the research domain was the doctor generates about the patient, the mental model the doctor generates about the patient would focus on the important relations such as blood pressure and sugar and cholesterol percentage in the blood and would exclude the insignificant relations such as the patients favorite food, his clothes` size and the color of his car and on (Abdil-Nour, 2005, p: 244).

The Difference between Artificial Intelligence and Human Intelligence

The computer`s artificial intelligence can be defined as the ability to represent computer models of a certain domain, specify the basic relations between its elements the originate the reactions that suit the events and attitudes of that domain, so artificial intelligence is connected to representing a computer model of a certain domain then retrieving and developing it. It is also related to its comparison with the attitudes and events of the researcher`s domain to reach useful inferences. It is clear that the difference in definition between artificial and human intelligence is the ability to originate the model, as a human being is able to invent and innovate that model while a computer model is a mere representation to a model that has already been generated in the human mind. The difference also lies in the types of deductions that can be extracted from the model as man is able to use different kinds of mental processes such as innovation, creativity and all kinds of reasoning while computer processes are restricted to limited inferences according to commonly agreed axioms and rules which are programmed in the same program.

Marketing Strategies

Marketing strategy is one of the issues that received the attention of many researchers in the marketing and management domain, in addition to the attention of those who occupy leading posts in high administrations while thinking of their companies` positions in the future. This obliges those in charge to persistently seek building contemporary strategies To move with their companies to a better situation or stand due to the changes that take place in the external context (Idris and Al-Mursi, 2006, p: 22). The quest starts with specifying the vision and message, placing targets, suggesting a strategy and rests with implementation operations (Johnson, 2006, p: 9). the success or failure of companies in the world of business depends on the well-arranged preparation and management of their strategic option in the light of power and weakness points of their interior resources or in the way they deal with the opportunities and threats of the external environment. Moreover, shaping and executing the strategic option is the base on which the survival, growth and development of these companies depend under vague future circumstances (Wheelen & Hunger, 2004, p: 12).

The continuance of those companies depends on strategy management which is an analytical process that aims at selecting and locating the company`s position in the future in accordance with the existing changes and developments; hence, strategy is regarded as the specification of the post the company occupies in the marketplace that puts it in a competitive position depending on the products and services it offers to its present and potential clients.

(Michael, 1996, p: 48) suggests that there are several bases to allocate the strategic position of the company which are:

1. Products collection bases: That is focusing on the products variety to make the client able to choose according to his needs. The company offers a limited collection of products using some distinguished activities like fast service and low prices. In other words, establishing a distinguished and valuable position for the company with its activities that differ from those of its competitors.
2. Clients needs basis: The Company tries to meet all needs of the clients correcting the necessary activities. i.e. contrasting and choosing the alternatives by presenting a unique blend of value to the clients which is difficult to be provided by others.
3. Access to clients' basis: This happens when the ways of access to clients of similar needs differ and that depends on their geographical distribution and that requires a set of activities to reach them in the best possible ways.

(Kotler& Keller, 2006, p: 56) refer to porter`s strategies that represent a good starting point to any strategic thinking, and those strategies are:

1. Overall cost leadership: This strategy is based on the least cost of production inputs compared to competitors. This means a substantial reduction in the overall costs of any industry through depending on a set of purposeful procedures. Concentrating on this strategy means offering a service or product and selling it in a market described of sensitivity to prices. This might happen through finding finding a cheap source of raw materials or depending on achieving big savings, i. e. distributing fixed costs and a big number of production units, getting rid of agents and depending on the company`s own sales outlets, using production and sales methods that reduce the costs or using the computer to lessen the working labor (Kotler& Keller, 2006, p: 56).
2. Differentiation: The company can establish a distinguished competitive position (competitive advantage) for itself by creating a higher level of differentiation to its products than that of its competitors. This enables the organization to impose the price it wishes in addition to increasing the sold units and developing a high degree of loyalty of the consumers to its trademarks. There are two ways to achieve efforts to reduce cost and risk level for the consumer and the second is represented in the company`s efforts to create more unique advantages in its products than those in the competitors' products (Haikal, 2011, p: 71).
3. Focus: This strategy means offering a predecessor services that fulfill the needs of a certain sector of consumers or a particular geographic area. This makes the organization seek the use of a competitive advantage in the market through presenting cheaper products than its competitors because because of focus on cost reduction or presenting products with distinguished quality, specifications or client services.
4. Alliance: This means joining blocks that lead to vertical and horizontal integration by arranging alliances with other organizations to achieve certain goals, impalement projects beyond the geographic limits of the organization to foster the competitive ability, in addition to integration with raw materials suppliers, agents and sales outlets and share power and knowledge with other organizations to improve the competitive position (Al-Sakarnah, 2005, p: 103).
5. Diversification: This strategy means that the company produces a varying collection of products that differ in description, size, quality and price in order to present a number of products to the consumers. It also means depending on independent suppliers to provide the company with raw materials and production inputs without trying to serve different market sector (Haikal, 2011, p: 72).
6. Direct marketing: This concept appeared in the age of the internet between 1995 and 2000, and it deepened in the newmillennium when the different specialized international companies started to move away from old methods and depend on the methods and techniques of direct marketing as a strategy to establish direct dialogues and relationships with clients. One of the most prominent results of information revolution was the panoramic outlook of the traditional policies which were adopted by the companies in the field of personal sales which created changes in the methods of managing and organizing personal sales and reaching clients through data basis, companies` sites, direct dialogue and clients` electronic mail. Labtops, mobile phones , internet and information networks greatly affected the efficiency and effectiveness of salesmen in the new millennium as well as affecting the philosophy and activity of marketing by generating many real changes that can be summarized as follows: (Al-Rabeea, 2007, p: 32).
 - a- The emergence of reversed marketing that moved initiative to the hands of clients.
 - b- The appearance of space marketing that transformed the world into a small village and one market.
 - c- The appearance of virtual companies in the form of sites on the electronic web (www).
 - d- The appearance of interrelated or interactive marketing which focuses on the relationship with clients on the long run.

Data Analysis and Hypothesis Test

The information in tables (1) and (2) showsthe arithmetic means and standard deviations of artificial intelligence and kinds of marketing strategies variables.

Table (1) the Arithmetic Means and Standard Deviations of Artificial Intelligence Variable

Serial	Expression	Arithmetic means	Standard deviation	Result
1	Using modern developed technological software to develop-marketing strategies	3.794	.8658	Effective
2	Caring for new developed products to satisfy customers	3.695	.9119	Effective
3	Training the workers in marketing management continuously to keep up with the technological developments of marketing strategies	3.771	.8432	Effective
4	Using modern technological and computer devices and equipment to develop marketing strategies	3.971	.8665	Effective
5	Depending on marketing experts to develop marketing strategies continuously	3.717	.9302	Effective
6	Using developed software languages to develop marketing strategies	3.925	.8712	Effective
7	Depending on using intelligent programs to develop marketing strategies	3.764	.9557	Effective

The former table (1) shows that the arithmetic means of artificial intelligence variable ranged between (3.695-3.971) and that expression (4) that states "using modern technological and computer devices and equipment to develop marketing strategies" was the highest among the answers, while expression (2) that states "caring for new developed products to satisfy customers" was the least attended among the answers. In general, it is noticed that the responses of the sample were positive concerning artificial intelligence variable.

Table (2) the Arithmetic Means and Standard Deviations of the Types of Marketing Strategies

Serial	Expression	Arithmetic means	Standard deviation	Result
	Cost leadership strategy			
8	increasing the company's commitment to reducing the cost and keeping an acceptable level of quality	3.7712	.96855	effective
9	using technology in all working stages which reduces the costs	3.7681	.97650	effective
10	choosing the least costly raw materials that suit the required specifications	3.7618	.85184	effective
	Differentiation strategy			effective
11	Providing the best quality products to the market	4.0425	.82117	effective
12	Understanding and meeting the needs and desire of the customers	3.9387	.79954	effective
13	Allocating part of the profits for researches and studies to develop products	3.5495	.93647	effective
	Focus strategy			
14	Choosing marketing programs that can achieve competitive advantage	3.7241	.94120	effective
15	Choosing the marketing activities that elevate its position in the market	3.8561	.78132	effective
16	ensuring the needed marketing capabilities to serve a particular market	3.8373	.90412	effective
	Alliance strategy			

17	Joining alliance with suppliers and agents to generate more efficient marketing activities	3.8656	.86341	effective
18	Joining blocks with the companies that work in the sector to compete with foreign products	3.3632	1.0337	effective
19	Integrating with sales outlets to exceed the limitations of resources	3.7665	.88042	effective
	Diversification strategy			
20	Offering different and multiple products with several trademarks	3.9481	.92107	effective
21	Offering new products in the markets periodically	3.7028	.76963	effective
22	Variation of sales outlets to sell products	3.7854	.82150	effective
	Direct marketing strategy			
23	Depending on the available data basis of customers	3.8325	.93666	agree
24	Keeping direct marketing communication with customers	3.7692	.94578	agree
25	Modernizing information about products	3.7995	.78092	agree

The information in the above Mentioned Table (2) indicates the Following

- 1- the arithmetic means of cost leadership strategy variable ranged between (3.7618-3.7712) and expression (8) that states "The company`s commitment to reduce the cost of its products with keeping an acceptable level of quality" was the highest among the average of answers, while expression (10) which states "choosing the least costly raw materials that suit the required specification s" was the least among the average of answers. Generally, all the arithmetic means were higher than the average of theof the used tool which was (3) and that indicates that the responses to the items of cost leadership strategy variable were positive.
- 2- The arithmetic means of differentiation variable rangedbetween (3.5495-4.0425) and expression (11) which states "offering the highest quality of its products in the market" received the highest rate of answers while expression (13) which states "collocating part of the profits for researches and studies to develop its products" was the least among average answers. Generally, the response of the study`s sample to differentiation strategy variable were positive.
- 3- The arithmetic means of focus strategy variable ranged between (3.7241-3.8561) and expression (15) which states "choosing the marketing activities that elevate its position in the market" received the highest rate of answers while expression (14) which states "choosing marketing programs that can achieve competitive advantage" was the least among average answers. In general, the responses of the study`s sample to the items of focus strategy variable positive.
- 4- The arithmetic means of of alliance strategy variable ranged between (3.3632-3.8656) and expression (17) that states "joining alliances with suppliers and agents to generate more efficient marketing activities" was the highest among answers while expression (18) that states "joining blocks with the companies working in the same sector to compete with foreign products received the least rate among averages. Generally, the responses of the sample to the items of alliance strategy variable were positive.
- 5- The arithmetic means of diversification strategy and its development ranged between (3.7028-3.9481) and expression (20) which states "offering different and multiple products with several trademarks" received the highest rate of answers while expression (21) that states "offering new products in the market periodically" received the least rate. Generally, the responses of the sample to diversification strategy variable items were positive.

- 6- The arithmetic means of direct marketing strategy variable ranged between (3.6792-3.8325) and expression (23) that states "depending on the available data basis about customers" received the highest rate of answers while expression (24) states "keeping direct marketing communication with customers" received the least rate. Generally, the responses of the study's sample to the direct marketing strategy variable items were positive.

The study's hypothesis were also tested and the following table shows the results of the simple regression test of these variables:

Table (3) The Results of the Simple Regression Test to the Effect of Artificial Intelligence on Shaping Marketing strategies

Dependent variable	sig.	R²	T calculate	T table	Statistical decision
Cost leadership strategy	1.671	9.456	.460	.000	Nullity rejection
Differentiation strategy	1.671	8.821	.462	.000	Nullity rejection
Focus strategy	1.671	3.375	.370	.000	Nullity rejection
Alliance strategy	1.671	5.486	.418	.000	Nullity rejection
Diversification strategy	1.671	9.605	.460	.000	Nullity rejection
Direct marketing strategy	1.671	5.923	.409	.000	Nullity rejection

($\alpha \leq 0.05$)

The decision rule in this kind of test states that if calculated T value was higher than T (table), null hypothesis is rejected and the alternative hypothesis is accepted. As a result, the information in table (3) clarifies the following:

1. Calculated T was (9.456) while its table value was (1.671), and by comparing the values, it was clear that the calculated value was higher than the table value. Therefore, we reject null hypothesis and accept the alternative hypothesis that states "There is an effect of applying artificial intelligence on shaping the strategy of cost leadership" which is confirmed by the value of (sig.) which amounts to zero as it is less than 5%. The results also refer to that the inconsistency in the independent variable explains a rate of (.460) of the inconsistency in the strategy of cost leadership.
2. Calculated T was (8.821) while its table value was (1.671), and by comparing the values, it was clear that the calculated value was higher than the table value. Therefore, we reject null hypothesis and accept the alternative hypothesis that states "There is an effect of applying artificial intelligence on shaping the strategy of differentiation" which is confirmed by the value of (sig.) which amounts to zero as it is less than 5%. The results also refer to that the inconsistency in the independent variable explains a rate of (.462) of the inconsistency in the strategy of differentiation.
3. Calculated T was (3.375) while its table value was (1.671), and by comparing the values, it was clear that the calculated value was higher than the table value. Therefore, we reject null hypothesis and accept the alternative hypothesis that states "There is an effect of applying artificial intelligence on shaping the strategy of focus" which is confirmed by the value of (sig.) which amounts to zero as it is less than 5%. The results also refer to that the inconsistency in the independent variable explains a rate of (.370) of the inconsistency in the strategy of focus.
4. Calculated T was (5.486) while its table value was (1.671), and by comparing the values, it was clear that the calculated value was higher than the table value. Therefore, we reject null hypothesis and accept the alternative hypothesis that states "There is an effect of applying artificial intelligence on shaping the strategy of alliance" which is confirmed by the value of (sig.) which amounts to zero as it is less than 5%. The results also refer to that the inconsistency in the independent variable explains a rate of (.418) of the inconsistency in the strategy of alliance.
5. Calculated T was (9.605) while its table value was (1.671), and by comparing the values, it was clear that the calculated value was higher than the table value. Therefore, we reject null hypothesis and accept the alternative hypothesis that states

"There is an effect of applying artificial intelligence on shaping the strategy of diversification" which is confirmed by the value of (sig.) which amounts to zero as it is less than 5%. The results also refer to that the inconsistency in the independent variable explains a rate of (.460) of the inconsistency in the strategy of diversification.

6. Calculated T was (5.923) while its table value was (1.671), and by comparing the values, it was clear that the calculated value was higher than the table value. Therefore, we reject null hypothesis and accept the alternative hypothesis that states "There is an effect of applying artificial intelligence on shaping the strategy of direct marketing" which is confirmed by the value of (sig.) which amounts to zero as it is less than 5%. The results also refer to that the inconsistency in the independent variable explains a rate of (.409) of the inconsistency in the strategy of direct marketing.

Results

- 1- There is an effect of applying artificial intelligence in shaping cost leadership strategy as these applications obliges the company to reduce the cost of its products with keeping an acceptable level of quality.
- 2- There is an effect of applying artificial intelligence on shaping differentiation strategy as these applications urge the company to attend providing the highest quality of its products in the market.
- 3- There is an effect of applying artificial intelligence on shaping focus strategy as these applications urge the urge the company to choose the marketing activities that boost its position in the market.
- 4- These is an effect of applying artificial intelligence on shaping alliance strategy as these applications urge the company to join alliances with suppliers and agents to generate more efficient marketing activities.
- 5- There is an effect of applying artificial intelligence on shaping diversification strategy as these applications help the company to offer different and multiple products with several trademarks.
- 6- There is an effect of applying artificial intelligence on shaping direct marketing strategy as these applications increase the company`s dependence on the available data basis about the customers.

Recommendations

The researchers recommend the following:

- 1- Better use of modern developed software technology based on artificial intelligence methods due to their importance in developing marketing strategies.
- 2- Connecting between the process of applying artificial intelligence methods and the development of marketing strategies in a way that foster the attention in producing new and developed products to satisfy customers.
- 3- Developing the workers` skills in marketing management and training them continuously to keep up with technology development as this will program their work technologically and qualify them to deal with artificial intelligence methods more efficiently.
- 4- Using modern technological and computer equipment and devices by the Jordanian industrial companies to develop their marketing strategy.
- 5- The importance of holding lots of workshops about artificial intelligence and making use of the available experts to develop marketing strategies continuously.
- 6- Giving more attention to practicing artificial intelligence methods application as well as using developed software languages in order to develop marketing strategies.
- 7- Dedicating a partial of profits by the Jordanian industrial companies for researches and studies to develop their products depending on intelligent programs to develop marketing strategies.

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