

The contribution of artificial intelligence applications to the development of digital marketing tools (zendesk, ETSY, E-BAY, Ali Baba)

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Abstract:

Our research paper emphasizes the crucial role of artificial intelligence in developing digital marketing tools. We propose innovative AI-powered techniques to revolutionize application development. Digital marketing, a cornerstone of modern business, has created value for organizations and strengthened customer relationships through online services. The rapid pace of technological advancement has heightened competition, accelerating digital marketing. Marketers worldwide are using digital technology to improve service quality and efficiency.

Artificial intelligence is transforming marketing with advanced features like intelligent search, targeted ads, personalized content, automation, fraud prevention, image and voice recognition, sales forecasting, natural language processing, predictive customer service, and customer segmentation. AI provides businesses with deep customer insights, driving sales and revenue growth

This study analyzes the successful integration of AI into digital marketing strategies by global technology companies such as Zendesk, Etsy, E-Bay, and Alibaba. By examining their approaches and analyzing their statistics, we can gain valuable insights into effective AI implementation in this field

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Key words: *Chabot's, IKEA, artificial intelligence, e-commerce, content creation*

1- INTRODUCTION:

The digital revolution we are experiencing today has become an urgent necessity for economic institutions. The success of the latter is therefore linked to the extent to which they can keep pace with technological development, employ artificial intelligence applications in their marketing activities, and use modern techniques to market their various products that have a positive impact on their performance.

On the other hand, given these developments, in order to sustain markets and maintain market shares, the enterprise needs to adopt all available marketing methods to meet consumer needs and meet their growing needs and gain satisfaction. The application of artificial intelligence has evolved in the past few years, making it very popular in marketing, and making much use of various artificial intelligence techniques, thus making users of different services and products seek to use it over the coming period, thus enhancing market prestige and competition.

Formulation of the study:

Through the above, the following problems can be raised:

The effect of artificial intelligence applications on the development of digital marketing tools?

Importance of Study:

The importance of the study is due to the recent topic of artificial intelligence applications and techniques used in marketing and its effective impact, which has made it a subject of research and study with a view to determine the extent to which the latter has contributed to the development of digital marketing tools.

Targets of study:

- This study is intended to achieve the following objectives:
 - Identification of the motives for the adoption of artificial intelligence applications and techniques;
 - Identification of the most prominent A.I. apps,
 - Diagnosis of the role of artificial intelligence applications in digital marketing,

- The most commonly used brands for these applications,
- In order to learn about the various aspects of the study, the following points are addressed:
 - The concept of artificial intelligence.
 - The concept of digital marketing and its tools
 - The use of artificial intelligence in digital marketing
 - Artificial intelligence applications in digital marketing
 - Applied study (zendesk, Etsy. Ebay, Ali baba)

2- The concept of artificial intelligence:

2.1 - Artificial IQ definition: defined as ":(Nassira, 2023, p. 70)

simply a term that describes the way in which a computer program or machine can replicate different kinds of human behavior and thinking, such as motion and speech, and the ability to execute intelligence acquired to perform different things with less human intervention, and artificial intelligence experts know that it is a science that makes things smart, includes robots, and natural language.

According to the European Commission of 2018, artificial intelligence indicates: systems that offer intelligent behavior by analyzing their environment and taking action - with a certain degree of independence - to achieve specific goals.

DRIFT also defined artificial intelligence marketing as a science that makes marketing smart or digital.

The term artificial intelligence (AI) can be defined as: the ability of digital machines or computers to perform certain functions, simulated and similar to those of intelligent beings; such as the ability to thinking or learning from past experiences or other processes that require intellectual processes; and the aim of artificial intelligence is to reach intelligent systems that act in the way that humans behave in terms of learning and understanding.

2.2. Methods for integrating artificial intelligence into the digital marketing strategy: (Hanan, 2023, p. 223)

There are several ways to adopt artificial intelligence, including:

2-2-1: Chabot: Conversation robots can have voice and text discussions, and the last appears as chat squares on the computer screen. Clients can be served 24 hours a day, 7 days a week, and their data can be preserved for

future use, and furthermore, two talking robots have many uses, and a combination of conversation robots and artificial intelligence and machine learning is a new game changer.

2.2.2 - Email Marketing: Artificial intelligence enables marketers to allocate marketing campaigns via e-mail, thereby strengthening their marketing services and improving their search engines, based on user behaviors allowing them to send e-mails in response to specific activities with the help of artificial intelligence. Trademarks design e-mail messages to reach the target population. Customer behavior and preferences for information allocation can now be used to help them send the relevant e-mails to consumer mailboxes, and improve e-mail marketing performance, with subject line, product recommendations, and messages all tailored to client preferences.

2-2-3- Promotional Personalization: Whether it is product referrals, incentives, free gifts, or compensation, Artificial intelligence knows what works effectively with each consumer based on their history, preferences and behaviors when the consumer decides to abandon the shopping cart, artificial intelligence can be redirected by e-mail, either to persuade them to return and buy the product, or to suggest a similar option.

2-2-4- Digital Advertising: AI is often used for digital marketing to maximize efficiency; it is used on social networks to provide the best possible impression to their users. User data such as sex, age, interests and other factors are studied for appropriate advertising.

Marketers can identify accurate trends and even predict future trends using artificial intelligence techniques. They will also be able to make strategic decisions as a result, and brands can reduce the inefficiency of digital advertising and ensure that their money is spent wisely.

2-2-5- Internet Search: The way in which individuals conduct online searches has evolved, as a result, we must now think about how to change this by how marketers create and improve online content. Sound search and its algorithm Google, as well as other developments in artificial intelligence, are examples of new developments that have clouded online searches and improved search engines.

2.2.6 -E-Commerce: When implemented effectively, artificial intelligence may have a significant impact on e-commerce pioneers. From web site development and content to product recommendations, inventory control and customer support, artificial intelligence can do all that, artificial intelligence can also be used to predict e-commerce revenues,

conduct competitive market research, and detect client research trends, among other things.

2.2.7 Upgrade Your Online Shopping Experience: Artificial Intelligence (AI) in Digital Marketing has the ability to improve and modify online marketing to improve users ' shopping experience, and many institutions tend to experience different kinds of artificial intelligence, with virtual reality, individuals can test or test elements or clothing before buying them, rather than looking at their images. IKEA, the Swedish Furniture Manufacturing Foundation, is a great example of that. It raises the digital marketing of artificial intelligence to a new level, launching enhanced reality programs that will allow shoppers to see IKEA products at home. Users will be able to input measurements of their space into the application, and then customers will see a variety of things based on distinctive design and life stages.

2.2.8 Content Creation and Organization: Despite the fact that artificial intelligence will not be able to write its own political point of view in a weekly column or personal blog about the best and most effective advice for a given action, there are some areas where the content created by artificial intelligence may be valuable and attractive to visitors to the site, which can help you save a great deal of time and money. Artificial intelligence can actually produce stories and news based on facts and information, for example, it can create a human-like content by assessing hundreds of parts of information and processing many units of data. Artificial intelligence can not only create content, it can also regulate it. The content organization, assisted by the artificial intelligence of web sites, will allow better interaction with users and provide them with high - quality materials. This method is frequently used to make ad hoc content suggestions that viewers may find useful.

2.2.9 Predictive Analysis: Artificial intelligence makes data-based forecasts using statistical data and techniques and auto-learning in predictive analysis. Predictive models can be used in a variety of areas, including marketing, that enable you to predict the likelihood that a particular client will become a potential, that they can also predict other factors, such as the amount of supply required to complete the conversion or even the customers that are likely to make multiple purchases. The important thing to remember here is that predictive models are only as effective as the information they provide when they are built. As a result, if your data contains errors or a great deal of unpredictability, you will not be able to make accurate and accurate predictions.

2.2.10. User Experience and web Design: The web site experiment can be allocated using complex algorithms. Artificial intelligence can provide transactions and information more relevant to each user type after analyzing hundreds of data points on a single user (including geography, population composition, equipment, interaction with the site, etc.).

3- The concept of digital marketing and its tools:

Digital marketing is important because it provides opportunities to increase sales, add value and approach customers, provide an extension of the brand over the Internet and reach a wide range at low cost, thus helping to overcome the constraints often faced by enterprises.

3.1. Digital Marketing: (Nassira, 2023, p. 73)

Gilmore and others are defined as the use of the Internet and related techniques along with other marketing tools to implement traditional marketing processes and activities, and to find, communicate and value customers.

Digital marketing is defined as the integration of digital media, data and technology into marketing activities, where marketers use electronic media to promote products or services in the market in order to attract customers and allow them to interact with the brand.

In general, digital marketing is defined as marketing products or services using various digital technologies and channels to communicate with customers, mainly through the Internet, but also includes mobile phones and advertisements on the Internet and other digital media such as digital advertising, e-mail marketing and Internet brochures.

3-2- Digital Marketing Characteristics:(soufiane, 2022, p. 186)

Digital Marketing has many features that make it a welcome activity in any institution, including:

- Pluralization and integration of activities: Digital marketing through various digital instruments provides a diverse and integrated range of activities, as their orderly and effective use leads to a better signature of the brand in the minds of clients;
- **Rapid development:** Digital marketing is the result of technological developments that have affected various marketing activities, as well as keeping pace with the digital marketing of various new technological developments, as well as:

- Targeting segments of a single customer: In an effort to get clients to partner with the organization, the latter seeks to build a relationship with individual customers by knowing their preferences and designing an interactive database that allows the interaction process to continue.
 - Expansion of the customer's role as a producer: Today's digital platforms provide fertile ground for interaction between the enterprise and its customers, knowledge of their needs and desires and more by opening the way for customers to design what they want with all the specifications that suit them.
- **Design ease:** with digitization, each customer can choose the design that suits it on the enterprise's website or online means with a button click.

3-3- Web-based marketing:(Labidi & Chafia , 2022, p. 632)

the website is defined as a set of pages, texts, images and digital videos, linked to a coherent and interactive structure, a form of online marketing that most organizations rely on to implement their marketing strategy in terms of implementation of ideas, distribution and pricing of banking services. E-mail marketing: is a form of direct digital marketing, involving the timely transmission of ad hoc or targeted messages to current or potential clients, at low cost, and an effective way for the enterprise to enhance relationships with clients, and its advantages are also easy to measure by opening up messages.

Marketing through social media sites: social media marketing is known as the organization's use of social media online networks such as Facebook, Twitter, YouTube, Instagram, and other sites to create content about the services it provides and to share with audiences who spend their time on these networks, thereby increasing brand awareness, communicating directly with target clients, increasing traffic on the website.

Mobile marketing: Mobile marketing is defined as a marketing activity carried out through a widespread network, to which clients are continuously linked by using a mobile phone, where the tools offered by mobile marketing facilitate the implementation of various services, such as: stock-seeking, money transfer, payment of bills and transaction logs through the text message service and mobile phone applications.

4- The use of artificial intelligence in digital marketing: (Hanan, 2023, p. 223)

Internet marketing is one of the most important areas to benefit from artificial intelligence. It offers many digital marketing solutions that can contribute significantly to the development of this technology, in the coming period, in order to increase its access to digital marketing.

4-1- Artificial audio intelligence and automatic chat robots:

In the recent years, artificial intelligence technology has evolved to a great extent, so that it has become like normal audio communication between two people over the past period, and several new technology institutions are developing this technology substantially, in the coming period, in order to increase opportunities for its use in digital marketing.

Automatic chat robots have evolved dramatically, in the last few years, and their marketing function has evolved with them, with the possibility that these robots can be used to talk to consumers and chat with them through marketing pages in various social media, helping to respond to them on a continuous basis, and many of these robots are working on product specifications on e-commerce sites in a successful and cost-effective manner.

Examples of automatic Chabot's robots include those used by Domino's Pizza, which automatically responds to potential buyers, answers open questions to website visitors by treating the natural language and service clients 24 hours a day, 7 days a week, and maintains their data. It can also use interactive chat robots that rely on artificial intelligence, that can communicate with an infinite number of customers at the same time, and that can interact and start communications, regardless of whether they are installed on a site or application as they can be used to provide customer advice.

4.2. Increasing the intelligence of programmed advertising:

Artificial intelligence can support and enhance the performance of advertising multiple times, using data targeting potential customers: demographic composition, purchasing behavior, goals, interests, searches, and other data, thus helping to provide deeper analyses that were difficult to obtain before, and its techniques can communicate to media channels that are not used by competitors, so that they can be exploited, so that the shoppers

have an opportunity to understand clients and deal with them on an individual basis beyond the demographic composition.

4-3- Deepening consumer understanding:

customer slide analysis is one of the most fundamental aspects that can benefit from artificial intelligence, to improve its use in marketing campaigns where it provides detailed consumer information, by processing vast amounts of data, and by generating accurate perceptions of client behavior patterns, as can be easily divided, to determine the accuracy of the target group, the platforms they use, and what they prefer.

One of the advantages of using intelligence has also been that it can detect customer navigation patterns for the market website, and their purchasing behavior, using a large number of transactions stored in the cloud and analyzed, where it can make very accurate presentations to each client according to his or her interests and preferences. For example, Facebook uses artificial intelligence to improve the results of publicity campaigns and to identify the contents that might be comics or sarcastic, so Facebook logs for artificial intelligence and the production of a learning system for me to do this job, which identifies texts in photographs and videos, and then converts these texts to readable versions in a form that is very useful in tracking and controlling the content of the comics.

4-4- Improved content creation:

Artificial intelligence tools can create ad hoc content on a instantaneous basis, which people cannot do. Visions from research data allow professional marketers to focus particularly on the most important ways to attract their target audience, whether by e-mails, direct notices, blog articles, website content and social networking accounts, because smart algorithms can analyze important data about users, to help produce ad hoc content and presentations.

4-5- Improved options with better analysis of visitors:

Many visitor data analysis platforms move towards artificial intelligence, providing up tools to analyze visitors to websites, sending accurate reports to improve performance and suggesting ways to improve the performance of the site. There is also an AI writing that enables users to obtain accurate answers to their websites.

5- Artificial IQ applications in digital marketing:

5-1- Polytechnic:(Hanane.B & Boulehya , 2023, p. 229)

Blockchain is one of the most promising and most desirable techniques in the twenty-first century that has the potential to disrupt business models in a wide range of industries such as finance, supply chain management, trade, etc. based on the DLT, and these applications provide innovative solutions to a number of business problems in terms of safety and transparency. Yet there is growing interest in the range in which Blockchain can be applied in other industries as well as management processes. Here, we will focus primarily on digital marketing. Blockchain represents strong marketing support so that it can automatically collect, screen, store and update data bases to transform the customer vision approach.

It is the ideal platform for generating ideas because it gives priority to data-based marketing and is also a method of sharing rewards where the previously mentioned distributed teacher's book technique works to automate payments on any scale that allows brands to send financial incentives regardless of the small size of the interaction. Here, an important and effective element, transparency and confidence, is to help advertisers to select suitable publishers and determine the results of the marketing campaign, as well as to help build confidence and prevent fraud. This in turn reduces costs and accelerates the pace of transactions. This is why technological development in recent years has moved the business environment and accelerated its pace. Experts are now aiming to describe the current state of artificial intelligence in marketing operations and the extent to which it has contributed to providing smart marketing solutions to all major problems. The use of artificial intelligence in digital marketing has recently increased at significant rates, and in the future artificial intelligence is likely to significantly change marketing strategies and customer behavior. Marketing experts must therefore prepare a multidimensional framework to understand the influence of artificial intelligence, which includes levels of intelligence and types of tasks, as well as to determine the nature of intense interactions in practice and to learn more about its ethics, especially as it will be more effective in the near digital future.

5.2. Reviewing the literature of automated learning in marketing: (Latreche, 2023, p. 106)

A robotic learning is one of the most prominent applications of artificial intelligence and occupies a great place in business, focusing mainly on creating systems that learn or seek to improve performance. The algorithms are its main drivers. This is why AI agents are rapidly changing the world of business, generating increased interest on the part of researchers and experts in developing new marketing research that calls for the need to make the maximum benefit from the robotic learning process. Many academic marketing literatures that are still emerging and that use the methods of learning that are readily available have emerged, as academic marketing has begun to take advantage of e-learning methods for many years ago. SVM: It is one of the first robotic learning methods offered for marketing, and there are many foreign studies that have addressed the subject of robotic learning and compared it with multidimensional logarithmic models. The results of these studies have shown that SVM generally predicts better than these models and argue that while multi-border logarithm models can help extract ideas from SVM are the best in large-scale automatic settings. I also found that robotic learning methods have outstripped traditional marketing methods such as logistical decline and hierarchy.

- text Exploration for the traditional: This is one of the most recent techniques that has been developed and it is being done on the basis of the natural living language to facilitate the conversion and programming of unregulated texts in documents and databases to other organized ones. Here, an analysis of the market structure is being carried out and a perception is being made of the use of Opinions to facilitate the creation of brand maps with information.

6. Applied study (Zendesk /Etsy / E BAY / Ali baba) (hadjaj, volume 12 issue 4 2021, p. 336)

6-1-Ali Baba:

Ali Baba Chinese Foundation is the world ' s largest electronic commerce platform. AI is an integral part of the organization's day-to-day operations and is used to predict what customers may want to buy. By

processing the natural language, the company automatically creates product descriptions for the site.

It is the world's largest electronic commerce market that invests a lot in artificial intelligence and robotic learning to get its business up to high levels, and most giant companies, together with Ali Baba, are making substantial contributions to the Chinese technology market by helping the Chinese government to build an artificial intelligence industry worth \$1 trillion by 2030, and Ali Baba has seven research laboratories to focus on artificial intelligence and e-learning, natural language processing and network security.

6.2. Ebay:

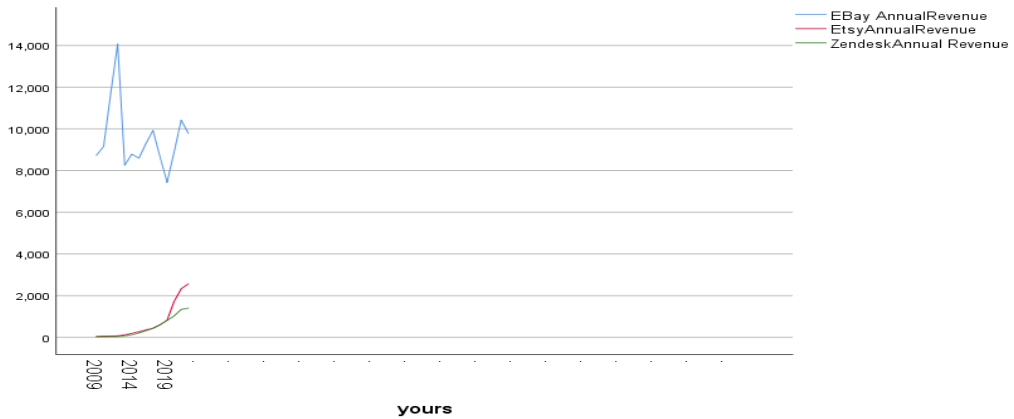
A multinational electronic trading company based in California, United States of America, facilitates consumer-to-consumer trade through its website and contributes to retail trade. Its website provides an electronic auction in which both individuals and companies can sell and purchase a variety of goods, products and services worldwide that rely heavily on artificial intelligence.

6-3-Etsy:

It is an application of electronic commerce via the Internet, focusing on antiquated elements or homemade elements and professional requirements, which fall under a wide range of categories including jewelry, bags, clothing, house decorations, furniture, and toys. All the ancient elements must be at least 20 years old, in 2016 Etsy revealed that he paid \$32.5 million to buy Blackbeard Technologies, an emerging company that developed artificial intelligence software used in market applications.

6-4-Zendesk:

An instant, simplified, paid chat service that helps you manage support requests, designed to help you prioritize and solve customer problems 24 hours a day, as well as allocate support messages through any channel you want, and it relies heavily on artificial intelligence through the use of automatic Chabot's.

Figure 01: Revenue growth rate (2009- 2019).

source: EvIEWS v12 outputs based on application locations

Table 01: Annual income development for applications :(Zendesk, Etsy, Ebay, Ali baba)

The highest annual income for E bay h reaches 14072, 2566 ETSY, and 1399 zendesk in the 14 observations we record, while we find that the deviation of the observation error is lower for zendesk.						
summarize EBay Annual Revenue Etsy Annual Revenue Zendesk Annual Revenue						
Variable	Obs	Mean	Std. Dev.	Min	Max	
EBayAnnual~e	14	9547.071	1655.482	7429	14072	
EtsyAnnual~e	14	691.8571	867.8721	52	2566	
ZendeskAnn~e	14	460.8571	497.2065	20	1399	
regress Zendesk Annual Revenue EBay Annual Revenue Etsy Annual Revenue						
Source	SS	df	MS	Number of obs	=	14
-----+-----				F (2, 11)	=	116.16
Model	3068493.89	2	1534246.95	Prob> F	=	0.0000
Residual	145291.823	11	13208.3476	R-squared	=	0.9548
-----+-----				Adj R-squared	=	0.9466
Total	3213785.71	13	247214.286	Root MSE	=	114.93

Source: EvIEWS v12 outputs based on application locations

Table 02: Table 02 : Adopting an income metric for these applications

The table shows us the extent to which the income scale is adopted for these applications. The table adopted the scale and accepted the accuracy of the income of these applications through $R^2 = 95\%$, as well as the probability of error that is less than 5%, so that $F < \text{Prob} = 0.000$.

Zendesk Annual Revenue	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
-----+-----						
EBay Annual Revenue	-.0294425	.0192731	-1.53	0.155	-.0718623	.0129774
Etsy Annual Revenue	.5545035	.0367638	15.08	0.000	.4735868	.6354202
358.3093 189.3688	1.89	0.085	-58.4887	775.1072	_cons	

Source : E views v 12 outputs based on application locations

Table 03: 95% confidence

Over all concordance						
Asymptotic confidence interval à 95 %		Asymptotic			Kappa	
Borne supérieure	Borne inférieure	Sig.	z	Erreur standard		
0.242	0.240	0.000	17.448	0.014	0.241	Concordance over all
a. The data sample contain 206 actual subjects and 5 indicators						

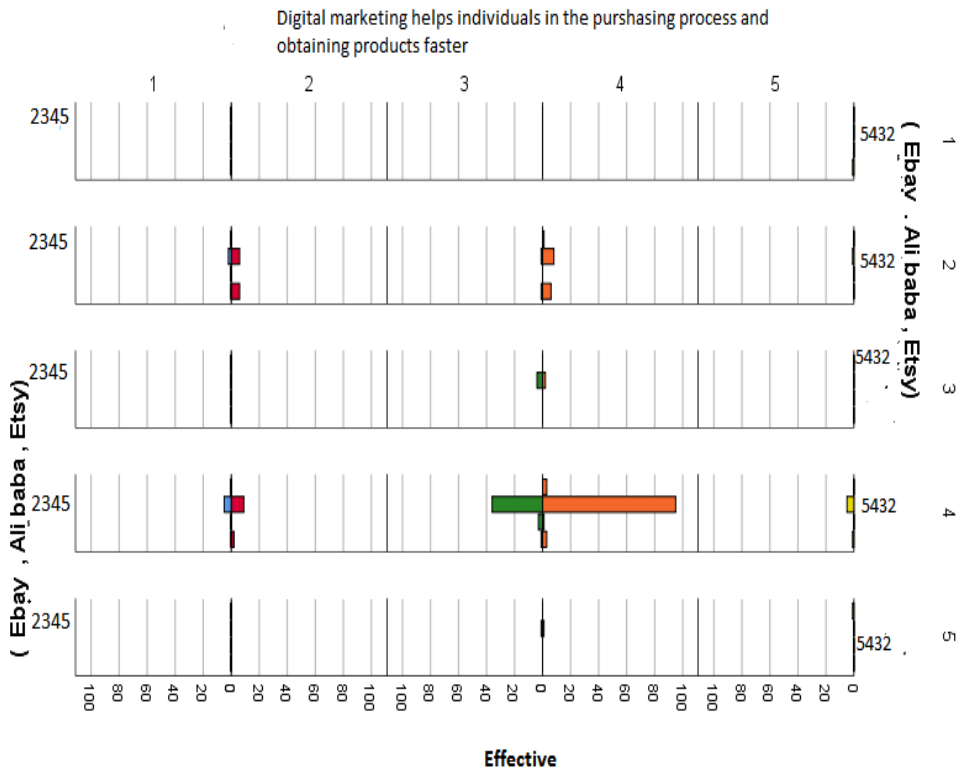
Source : EvIEWS v12 outputs based on application locations

Table 04 Analysis of the trends of the studied sample

Inter éléments corrélation matrix						
	<i>Relying on sites such as: (Ebay, Ali Baba, Etsy) to shop online and search for appropriate goods is effective for individuals in the purchasing Process</i>	<i>Social media (Facebook, Instagram) and others have become electronic markets for the individual</i>	<i>There is a difference between what is offered on electronic shopping sites (Ali Baba), for example, and what is actually presented to you in</i>	<i>The low costs of electronic products make online shopping the ideal</i>	<i>tall marketing helps individuals in the purchasing process and obtaining products</i>	<i>Digital marketing relieves the individual of the trouble of moving between stores and markets</i>
Digital marketing relieves the individual of the trouble of moving between stores and markets	1.000	.341	.013	.205	.131	.247
Digital marketing relieves the individual of the trouble of moving between stores and markets	.341	1.000	.096	.179	.013	.215
There is a difference between what is offered on electronic shopping sites (Ali Baba), for example, and what is actually presented to you in reality.	.013	.096	1.000	.588	.384	.308
The low costs of electronic products make online shopping the ideal choice	.205	.179	.588	1.000	.473	.263
Digital marketing helps individuals in the purchasing process and obtaining products faster	.131	.013	.384	.473	1.000	.438
Digital marketing relieves the individual of the trouble of moving between stores and markets	.247	.215	.308	.263	.438	1.000

source :(spss, p. v 20)

Figure 02 :It shows the stability of the studied sample



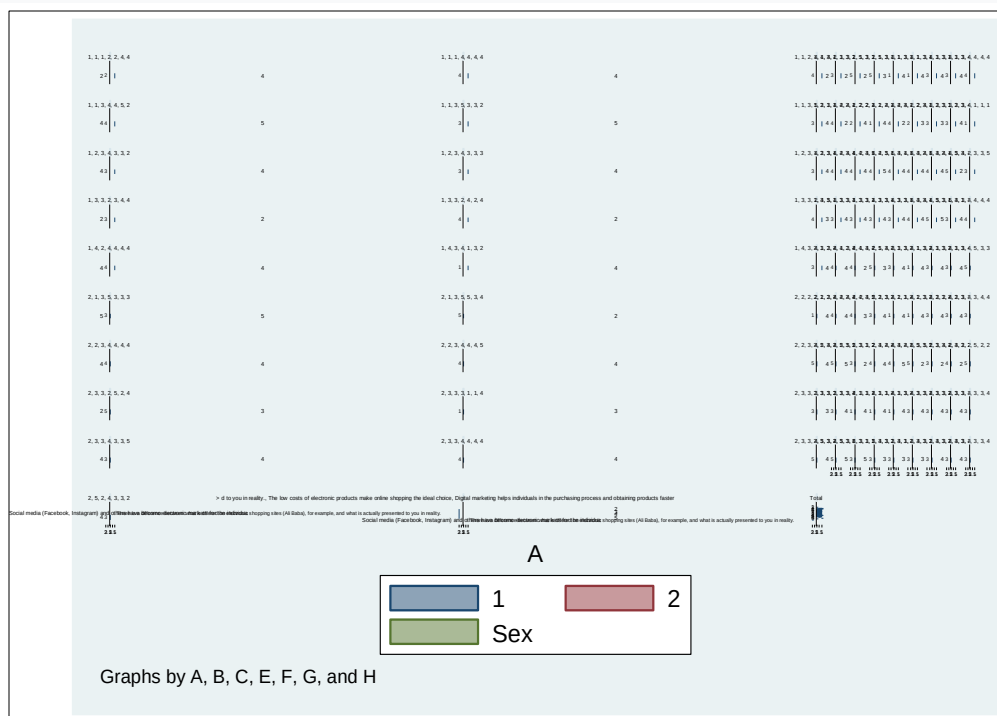
Source:(spss, p. v 20)

Table 07: The percentage of influence of social media devices on the views of the Studied sample.

The subpgp test shows a high percentage of the influence of the social sites of Facebook and Instagram on the orientation of individuals in the studied sample and the choice of sites for electronic purchasing				
tabulate E, subpop(H)				
E	Freq.	Percent	Cum.	
	2	18	8.70	8.70
	3	19	9.18	17.87
	4	158	76.33	94.20
	5	11	5.31	99.52
Social media (Facebook Instagram) an..		1	0.48	100.00

Source :(spss, p. v 20)

Figure 03 :The figure shows the stability of the studied sample



Source :(spss, p. v 20)

Figure 04 :The figure shows the stability of the studied sample



source :(spss, p. v 20)

5- Conclusion:

Artificial intelligence applications play an effective role in the electronic marketing of products of various shapes and types, which has made them today the focus of great interest among institutions in light of the business world, which is characterized by intense competition. Therefore, these applications have contributed to a significant and positive impact in the development of digital marketing tools, which in turn have found popularity among various segments of customers and markets. This is because the electronic shopper achieves ease of obtaining the products and information about them, as well as the availability of the alternatives offered.

Among the most important results reached through the research paper are the following:

- Today, artificial intelligence applications have become one of the mechanisms that cannot be ignored in digital marketing.
- Increase interest in artificial intelligence in various fields of life, especially Digital marketing, by providing the latest means and resources that Contribute to the development of digital marketing.
- The combination of artificial intelligence applications and technology has achieved a qualitative leap in the field of electronic business, starting from smart search to Chabot's to targeted advertisements. This has achieved a smooth and useful purchasing process for the online shopper, and it confirms that there is a more developed future for this sector.
- Artificial intelligence applications have the ability to analyze huge amounts of data faster and more accurately than the human element....
- The organization's marketing department can use this information to better identify the target audience and customize offers and content based on.
- Organizations must use artificial intelligence applications to facilitate the process of communicating with their target audience personally, which leads to strong relationships between the organization and its customers.

- Encourage research in the field of artificial intelligence in general.
- Work on developing digital marketing applications and platforms in Algeria

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