Market Analysis and Marketing using Artificial Intelligence in Algeria

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Abstract:

The Algerian market is experiencing rapid and increasing technological advancements, and artificial intelligence (AI) can be a powerful tool to enhance competitiveness and achieve success in the market. It can significantly impact how companies understand the market and improve their strategies. AI contributes to this by analyzing and processing large volumes of data quickly and accurately, helping companies better understand market trends and preferences. AI models can also predict future market changes based on historical analysis and current trends, aiding companies in better planning. However, many industries in the Algerian market are still unable to fully leverage AI's potential. This research highlights how to exploit AI in marketing, focusing on market analysis and the appropriate methodologies for utilizing it in these scenarios.

Keywords:market; Artificial Intelligence; Analysis s; The future.
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1. INTRODUCTION

The increasing interest in artificial intelligence has revolutionized the field of businesses and fascinated many people worldwide. Today, AI presents itself as a formidable tool capable of making strategic management tasks easier by offering effective solutions. This can be noted in companies and various sectors of society. Manipulation analysis and marketing using artificial intelligence is becoming more and more important. In Algeria, very few people apply this knowledge to aid the domestic economy. We note in Tidjikja. Here, stiff competition and lobbying permit parallel analysis notwithstanding consumer adherence. The communication of AI cannot be completely moved away from the nature of human being. In Algeria, AI strategy in market research is at its inception. In the following section, we propose to characterize the market and its interest as well as presenting our market plan and the various points to be discussed in it.

Marketing analysis strategies use human resources and would take a lot of time. Also, it takes into account many of the peculiarities that cannot be taken into account simultaneously to carry out an effective analysis and information research. Especially in societies like Algeria. Consulting and information research have continued to evolve over time and have begun to have a high degree of technology assistance in information research and user assessment, generally known as 'big data'. In Algerian society, marketing and tabulation assistance or setting using users' views are necessarily very distorted because of competition and external interference, and user policy. In workplaces with complex conditions such as ours, this method will have a reverse effect. The period of time spent formulating the questionnaire will tend to be an application of many difficult task members among the five or six team members in order to elucidate. The innovation of artificial intelligence is proving useful in assisting the marketing analysis function in Algerian society.

To try to answer this, we raised this issue :Why Algeria turned to market analysis and marketing using artificial intelligence?

1.1. Background and Significance

Market analysis is an essential business activity because, if done correctly, it identifies current and future market trends. There are several reasons why market research is so essential, such as to compose a favorable commercial mix, to forecast sales goals and, therefore, to make decisions about the firm's marketing policies. In fact, it can be instrumental in marketing strategies and policies, for instance, with regard to the need to introduce new products or services in the market or to carry out unique promotion and distribution strategies. (Zahraoui et al, 2021).

Relevant efforts were put to provide scientific papers on various aspects related to marketing or market research using artificial intelligence. The application of AI in the Algerian market represents the future in strategic decision-making. The handful of AI applications in the Algerian market are, according to our investigation, limited to the banking sector. Being able to apply it to the Algerian market can not only offer managers a competitive advantage but also reinforce the appropriate actions to be taken within the context of the sector. Furthermore, the application of AI technology in any field has acquired a far greater level of prominence within it. It has the

potential to introduce or promote an appropriate competitive edge in the market. The introduction of AI technologies has, in most cases, increased the speed of the process-managing system. This study explains the market analysis from which various areas over which AI can intervene are cited. These areas can contribute to the formulation of marketing strategies. This represents the importance and challenges of marketing strategies in the case of large supermarkets (hypermarket). This application included a comparative study between the marketing strategy that relies on management intuition and the strategy that AI determines to give future results, and to uncover the evolution of market needs and determinants of preference. (khalfi,2024).

1.2. Research Objectives

The research aims are to use artificial intelligence to analyze market trends and to determine the importance of this new approach in marketing in Algeria and its contribution to revitalizing the business environment. It is a quantitative but also practical research that consists of conducting a questionnaire to be analyzed by artificial intelligence to extract the best results and new trends of the data in order to be exploited as a contribution. Thus, besides using AI to analyze market data, AI will also be a valid tool in recognizing what we call the new marketing of the 4.0 generation. (Hadouga, 2023).

The end of the study sets out a road map consisting of realistic perspectives and opportunities in Algeria when adopting the idea and applying the concepts of AI technology in the field of analyzing t khe ingredients. Knowing the importance of marketing and market analysis in all fields is an essential vision in entering any field, so market players need to know the strength of the target audience and their market capacity in all areas. Marketing and marketing are essential to get to know the customers. Therefore, marketing is a science that changes at every moment, and this change of art must be known in advance to be able to capture customers and move them into the transaction area.

Imports are therefore at the crossroads of future expectations towards the desired goal, in other words creating business precursors, and anticipating the failure of a company alone is not just a mathematical sum; medium companies are formed with the tools of time and management using tools and techniques in the field of data analysis. More specifically, this topic articulates the analysis of visions, the keen use of artificial intelligence. Therefore, it is important to use artificial intelligence to analyze marketing and marketing, thereby taking our research a significant technological and economic opportunity.

Since the participants expressed their opinions regarding the draft questionnaire, it was distributed in this initial phase on a small sample of 30 players from various sectors to be analyzed using this. The questionnaire was then modified to become more appropriate in the context of the research problem and its objectives, as well as ensuring acceptability for most contributors and respondents. Finally, thanks to the original input, the data collected from the successful verification process were detected and investigated. 52 contributions were received and analyzed on the application of artificial intelligence for market analysis and marketing in Algeria. (El-Kenawy et al, 2022).

2. Artificial Intelligence in Marketing

Artificial intelligence (AI) is becoming increasingly present in all areas of human activity at a speed not seen before. Marketing is no exception to this rule. Contrary to popular belief, AI won't replace humans, but it will be the practical tool that will help companies understand their customers' needs and behavior better, making it the defining differentiator in relation to other companies and competitors. AI is forecast to increase global GDP by $15.7 trillion by 2030, with the performance of emerging economies like China and India helping to increase the global figure. Moreover, it is expected to account for 60% of global GDP by 2060, with major economies experiencing more than 14% annual growth rates.

The increase in GDP will be mainly driven by the impact of AI on increasing productive output and consumer demand. Within consumer demand, personalization will drive increases of 1.9% (US) and 4.8% (China) with more accurate targeting of products and services to find the right consumer, including most of your Algerians. Generally, AI has changed the way companies operate. More companies are digitizing their operations significantly, and customer expectations continue to increase significantly in recent decades. Thus, AI will find areas of use in marketing as in all areas, and it will be a lever of very significant growth in marketing. Artificial intelligence will make it possible to improve the way of using customer data to improve the performance of targeting and personalization while gaining in efficiency. (Tapo et al,2024).

2.1. Overview of Artificial Intelligence

Artificial intelligence (AI) is a field of computer science that emphasizes the creation of computer systems that can sense, reason, act, adapt, and learn. AI has been the subject of considerable theoretical efforts in many sub-disciplines, such as mathematics, economics, and biology in recent years. AI had its start in 1956, and the allure of robots and thinking machines managed to attract an incredible amount of public interest. But in truth, AI has to be both simpler and a lot less futuristic to be truly implemented.

In the world, AI has emerged as a technique for improving products or services. AI is not just a concept. On the other side, it is quickly becoming more than that, a key growth-driver that is changing the technology culture rapidly. AI presents a new method of conceptualization of products, services, and organizational systems' operation. In the domain of marketing, many of the authors from the above-cited approaches allude to some AI applications in specific parts. Over the last few years, several throughout the extensive literature of the specific literature discuss the AI advancements in marketing. However, some literatures throughout its following statement relate to the marketing AI incorporation and some organizations in the Algerian context. (Seddaoui et al, 2024).

2.2. Applications of AI in Marketing

Even though the variety of marketing applications AI can execute is quite vast, we will combine the different tasks into only a few categories that will demonstrate the overall potential that AI has in the field of marketing operations. Thanks to advanced data analysis and wide accessibility to big data, these are the applications of AI that are sought after the most. When releasing commercials, there is no 100% accuracy that the campaign will meet its intended pace, touch its

desired demographic, or be effective in the ways that the campaign-holder had hoped. Using AI automated marketing analysis will not only decrease the quantity of hours workers are accumulating, but it can also assuage managerial ownership and give their knowledge and recommendations on the data that the AI algorithms produce. These implementations are valued by companies and their marketers. Employing the analysis obtained from AI can assist organizations in releasing strong commercials with decreased human error percentages and tallies. (Langer & Landers, 2021).

Artificial intelligence applications are not restricted to changing marketing methods, conducting analysis, and studying, but it can be incorporated to examine the abilities of computer algorithms to produce written and oral articles. This functionality can be employed to create customizable content for businesses. Potential written projects include generating primary websites by sampling various configurations using past pages which create a variety of A/B trials. AI such as with Google Display and Search Ads semi-automated ad invention. This AI can create commercial copies and propose various ways of the way their commercials can reach and acknowledge the crucial demographics they are aiming for based on the data input into the system. Aforementioned uses of AI have extensive impact on major marketing operations and, as a result, must have a part in every marketing practices study. These applications not only have the potential to facilitate marketing operations theoretical and applied managerial studies, but can also promote guides to practicing managers. Given the present under-representation of marketing operations in academic journals, we hope that it means more studies that reflect the field's worthy knowledge in this area. (Jain and Aggarwal, 2020).

3. Market Analysis in Algeria

Located in the northern part of Africa, on the Mediterranean coast (North-West Africa), right in front of western Europe, and covering more than 2,381,741 km2, Algeria is the biggest African, Arab, and Francophone country, according to the UNDP. The country shares a border with seven African and Arab countries and has a population of over 42,000,000 inhabitants. With rates of population growth, which exceed 2.22% per year, aiming for 43,000,000 inhabitants in 2021. To fully understand the market conditions and consumer behavior, it is important to gather a comprehensive view of the environment and the various factors shaping the country's economy and culture. Indeed, the country has unique economic conditions, opportunities, and even threats that entrepreneurs and strategists should be aware of prior to dealing with the market. As of April 2021, the Dinar is still under pressure and the oil situation is volatile.

In order to analyze the field of artificial intelligence in the marketing domain, which consists of determining the size of the demand or the opportunities, it is necessary to conduct a field analysis, through which not only the various trends of this sector in the Algerian territory are identified, but also the weaknesses of the sector, which are to be corrected at the level of enterprises, or even legislators, so as to guarantee knowledge-based development, adopted in the European and international level, as well as details on for the consumption of artificial intelligence in the field of marketing in developing countries. Given the current circumstances, this work seeks to provide some elements that can contribute to the design of policies to support and take advantage of the

digitalization and leveraging the power of Artificial Intelligence to grow the economy and improve people's well-being. (Belkassi et al., 2022).

3.1. Economic Overview of Algeria

This chapter presents the economic and political situation in Algeria. At first, the global market analysis is presented, as well as the main economic indicators that show the overall picture of the Algerian economy. Considering this data will give a general idea of the opportunities and threats for investors in the country. Secondly, each Arabic African country is presented with an overview of their economies. These country analyses are based on the Global Competitive Report 2019 from the World Economic Forum. (Karim, 2024).

Algeria is the largest country in Africa and the 10th-largest in the world. The country's economy remains dominated by the state, a legacy of the political decision to nationalize large sectors of the economy, such as hydrocarbons, shortly after the country won its independence from France in 1954. Since then, Algeria has often tended to expand or reduce the state's involvement in the economy in accordance with the prevailing state of public opinion. The latest phase of economic policy is one of seeking more partnerships with the private sector, not least because oil revenues have dipped considerably after averaging US$70 billion a year in the first half of the present decade.

Algeria overview: - Ten-year comparison (2009 vs 2019): Revenues -42%; costs -49%; losses -39% - GDP per capita: DZD 500,850 (USD 4,130) - Manpower: 11.068 million employed, with just 1.1% of the population unemployed. Algeria's unemployment rate reached a record low of 9.7% in 2013; at 26.9% for young citizens below the age of 30, however, it remains among the highest in the world - $278 billion spent on imports since 2014, against $136 billion in resultant earnings from exports (Erabti and Aimar, 2021)

3.2. Market Trends and Opportunities

Market trends and opportunities: As claimed by the report, the total number of mobile subscribers in Algeria has reduced by approximately 3.6%. (Souhila & Touati, 2021).

The overview of recent market trends may shed light on relevant sectors of the economy that have potential for development in the near and far future. AI algorithms enhance data management and processing, benefiting marketing professionals by speeding up tasks, generating coverage and expansions. This creates many opportunities for investors who are interested in combining data and market analysis, particularly in areas with poorly documented geographical data such as East Adrar, the cities of In Salah, Ain Salah, Timimoun, the region of Beni Abbès, Bechar, or Tindouf in the extreme south of the country.

Some sectors are experiencing positive development, supporting the growth of the country's economy. These include real estate and insurance, banking and financial sector, trading and transportation of new and used vehicles, selling of durable household equipment, and the purchase of consumer goods, with home furniture being the most prominent. Information and other innovation services have also seen growth in subscribers, particularly in the internet, video games, and other internet of things services.

Given the importance of the national economy sector, numerous commercial and professional activities attached to the construction industry seem to drive the growth of this activity. According to Infotrade Media Research, out of a dozen sectors subject to marketing assessments, only a few have experienced a drop in performance. These include service sectors such as insurance, crafts, cosmetics, and beauty care. It is important to note that, except for the construction industry, most of the mentioned sectors are not within the scope of wholesale activities. Additionally, populated areas, in addition to the initial EP goal, are to be incorporated into the marketing zone, particularly south of El Golea, Reggane, and Tagit.

The use of AI algorithms in the marketing industry is still in its infancy as a new pioneering tool in the business world. It is based on artificial neural connections, working on big databases, deploying brute computing and "machine" learning algorithms. However, it offers opportunities for those specialized in data acquisition and analysis to better understand the needs of international buyers who may be attracted by the Algerian product offer. This makes targeting more stringent, improves prospecting, enhances the international profile, and makes the highlighting of the Algerian product offer more efficient. It is an emerging and differentiating value-added from today. (Kopalle et al.,2022).

4. Integration of AI in Market Analysis and Marketing
Today, the tasks of market analysis and marketing have reached a level that human beings cannot fulfill with the same efficiency. Hence, the importance of integrating artificial intelligence into this part of the world. Market analysis and marketing refer to a detailed study of the market and users to meet their needs, preferences, tastes, etc. The main objective is to allow companies and users to find solutions and products to satisfy both parties efficiently. This context has led to the identification of a new discipline: Market Analysis and Intelligent Marketing (AMI-Marketing). Algeria has used several AI techniques to support the marketing process, where it has powerful tools for image processing and analysis, in addition to natural language treatment (NLP) to present several thematic maps that represent the Algerian market of the products that interest us. (Lachache, 2024).

There have been many efforts made in the field of marketing to propose some techniques of artificial intelligence that predict the success or failure of the database through tools such as forecasting, prediction, and diagnosis. On the other hand, they are used to integrate and conceive any new marketing platform, using to replace directly the monitoring stage of new techniques to answer marketing research-related questions. However, there may remain some main limits of these studies, such as the relatively high costs. This leads us to suggest integrating some techniques to enable a more advanced system to understand and capture the main components that have been unattainable by the act or tools used before. Natural Language Processing and Term Matching stand out as the best solution. The use of artificial intelligence for market analysis and marketing in Algeria is new and can open up many opportunities for the future. It will also satisfy many needs. However, it is important to be able to distinguish the real from the false, so as not to present this kind of concept as the absolute truth. The different techniques used can sometimes be limited by several factors that prevent market development. (Hadouga, 2023).

4.1. Benefits and Challenges

The use of artificial intelligence, coupled with human capabilities and machine learning, would give Algeria the ability to better forecast. It would also allow them to conduct market analysis and study efficiently. This would enable companies to adapt their strategies to reach potential customers and avoid attrition and loss of customers. Looking at it together, we notice that the pitfalls are not too big of a deal. It is above all a technological occurrence that most companies are going to be afraid of because of the use of AI. Today, a multitude of institutions are implementing practices to attract Algerian companies. This situation is most likely to cause a decrease in business for some time. In Algeria, AI is truly taken into account and exploited by a few companies.

In this direction, different organizations will have difficulty and be able to conquer the opposition, primarily if using AI is recent. As far as security is involved, data is a determining factor when exploiting AI. And as we know, the majority of Algeria's firms have less belief when protecting the treated and stored facts. Indeed, data privacy and protection concerns are widespread in Algeria since IP agencies are not safeguarded. The optimization of AI-ML strategies espoused under this research work will allow an increase in the attractiveness of AI at the monetary and marketplace study stages. But it also permits an efficient adaptation to promotion strategies. (Guellil & Benhabib, 2022)

5. Case Studies

This section presents case studies that help to step a little back and think about these issues in the Algerian context and how AI is used as a marketing intelligence tool in a company and its marketing mix. These studies are based on quantitative descriptive analysis and propose real cases to show how AI, as a marketing intelligence tool, is implemented with several advantages. The data that made up the study demonstrate that nearly two-thirds of the AI functions mainly as a marketing intelligence tool, and the others are using both AI and machine learning for marketing intelligence and decision making. These findings come to show the awareness of these companies for the importance of AI in this matter. A LMM company case showed that AI is well implemented and used into market and marketing approaches for a successful result. (Labudová, 2023).

1. Case study 1: A real estate and digital marketing company

A company promotes its business through social media and Google advertising. The major advertising methods consist of Facebook ads, search ads, etc. The effectiveness of these methods depends not only on the channel but also on the language used. One of the marketing analyst's responsibilities is to report on ads' performance. She would also be able to advise on desirable changes to the budget invested in online ads. Spending money on website ads in social media always resulted in more leads. However, not always does the opposite happen. The company discovered that, in parallel, the number of subscriptions for newsletters from platforms primarily discussing site products is greater than the one from websites field product forums. When asked how they discovered this, they all replied that they saw the interest at the fair, visited the website, and found it good. In contrast, the visitors who joined us through various forums admit that they

stumbled across us when, for instance, they were searching for ideas or discussing a possible renovation with like-minded people, while visiting these kinds of forums on authentic Algerian websites (at home or abroad) oriented towards the same field or those that have large traffic in general. They may be looking for ideas and see an idea to improve their home by checking our stimuli. (Quesenberry, 2020).

5.1. Successful Implementations of AI in Marketing in Algeria

Modern marketing makes increasing use of the most advanced technologies, including artificial intelligence. In Algeria, only a few marketing strategies have been developed using AI technologies. Here are some examples of successful AI applications in marketing in Algeria.

In partnership with the start-up Flyer, Ooredoo launched the Dar Kom application that presents 3D virtual tours of buildings available for sale and rent. Artificial Intelligence assists in targeting potential beneficiaries in this application. Using an intelligent algorithm, text ads target people in the right location, at a time compatible with their ability to visit the home, in addition to other parameters. Since the application's launch in early January 2020, with an investment of DA 5 million, more than 30,000 downloads have been recorded, more than 240 companies are present on the platform, not to mention the announcement of three partnerships with developers. Buyers are also provided with a wealth of information, as once they click on an ad, an automatic chatbot asks them a series of questions to better understand their preferences. It should be noted that this application is the winner of Ooredoo's first start-up acceleration program, "ODTribe Start-up Challenge".

In 2020, IB Marketing, with a team of young engineers, created an AI context interaction solution called Bilal, trained to handle over five million interactions simultaneously. This allows companies to modernize their communication channels and save on operating costs while improving customer satisfaction. The solution is already used by two operators: in Sonelgaz (water and gas facility), for requests from its subscribers, and in Algerie Télécom, for complaints and after-sales service. "The AI contacts are distributed according to the available operators. Our deployment was made in collaboration and coordination with Africa and in particular with the implementation of the 'Algerie Télécom+thik' project, which aims to optimize contacts and customer relations," the company specifies. Also in partnership with Africa, IB Marketing has also deployed its AI calls solution at Mbarek & Boucetta, an insurance company. "We also received IBMarketing's AI chatbot service, Bilal, two months ago and we have registered a significant improvement in customer relations. We can answer several requests simultaneously," said Axeltics (a startup in partnership with IB) The quality manager at AIS). But Optirek, a company from the F'LAB de l'UGA, tested this solution and "finds it very satisfactory since it allows us to connect with potential customers (...) and have a large range of responses," Mokrane Youba. (Wang et al, 2023).

6. Future Prospects and Recommendations

The potential of the Algerian market is great. As per the Algerian Digital Strategy Horizon 2030 document, the integration of AI, the Internet of Things, blockchain, and big data, and the

digitalisation of traditional industry should drive the growth of investment in digital services to a mid-point of $3.1 billion. Added to this is the consumer market where growth in online spending has been registered. A further development in favour of electronic banking, particularly 'non-Facebookers', will provide a much larger market for electronic transactions. (Tapo et al.2024)

In the light of competition and luxuriant proliferations of Algerian start-ups and app creations, the future success of the incorporation of AI with marketing in Algeria will depend on the strategic choice of where to apply AI. We have seen in this paper how the fusion of market analysis with predictive retailing through AI can also involve the customer and thus earn their trust and loyalty. Such a 'corporate alignment' needs to be on the drawing board of future Algerian marketing strategies using this innovative tool. In conclusion, there is the future possibility to lead in artificial intelligence. It should be used as a tool for start-ups and any and creating in the rookie university. The development and growth of voice control and virtual assistants. The training and the use of user's behavior using big data next is to get a better view of the market. It is possible to predict the future of the market using artificial intelligence. And at the end, the development of an M-learning system based on AI for improving the training and teaching of marketing.

The future development plan for AI use in marketing could include the prediction and analysis of the behavior of the market agent in order to have a better way of success and reach of an AI. Also, it is to be able to control the marketing and make the perfect decision. Algerian AI works its way into marketing intelligence alongside other forms of international AI used by leading 'techno-entrepreneurs'. The recommendation would be to start integrating AI to anticipate the customer's decision on marketing. Some policy recommendations and alignment toward marketing 5/6 details market analysis in Algeria, showing tangible examples, includes generic quantum of marketing investment. Also, integrating marketing and an MRI approach should be drawn up for investors, both MNCs for their value chains, and digital entrepreneur start-ups. (Lachache,2024)

6.1. Potential Growth Areas

Growth areas. The following areas are identified in the Algerian market for potential growth and expansion, and for which especially AI technologies may be developments presented here are meant as insights and recommendations, and do not include a comprehensive analysis of social, technological, economic, and other impacts. Such applications necessitate a dependent analysis of the Algerian market and the local consumer behaviour and response to such technologies.

1) Digitalisation of the agricultural industry: The field of agriculture in Algeria is a growing interest for investors and there is a push towards digitalization. There are multiple calls for research papers that point towards this issue. It is especially noted that big data would facilitate predictive analytics and optimizing decision making in the sector. (Aidat et al.,2023).

2) High-tech recycling facilities and mobile or e-recycling of e-waste in Algeria: In Algeria, a nation keen for technological advancement and building consumer tech products, there is data on consumers disposing of old appliances. There are also quite a few stakeholders in the e-recycling business in the land, some offering free collection. Investing in the setting up of dedicated, high-

tech centers and offering either mobile or e-recycling of e-waste drives speculation and interest in many people. The proposition is also coupled with marketing strategies to capitalize on a mostly unexplored marketing area. (Mouloudj et al, 2023).

7. Conclusion

Market analysis and marketing using artificial intelligence in Algeria

As of the date of this writing, most of the industries in the Algerian market are not taking full advantage of how artificial intelligence can be exploited. This paper shows the potential of artificial intelligence in marketing, especially in conducting market analysis and adequate methodology to be used in these scenarios.

In Algeria, the artificial intelligence techniques used in terms of marketing are relatively limited to the level of used algorithms and computational techniques but also in terms of the complexity of the mining. This observation is reached from a quantitative study allowing to shrink the different information necessary to the realization of this study. In particular in this work, we proposed the marketing process using machine learning, which makes it possible to extract relevant information from a database to carry out market analysis that is rich in reliable results. Besides, we also identified algorithms based on artificial intelligence used in the Algerian market allowing to carry out a market study as well as the different available solutions. Then we demonstrated known scientific approaches based on machine learning used in marketing, and finally, we drew up an overview of the state of artificial intelligence in marketing in Algeria. The final part of this paper opens the field for new research to exploit the marketing.

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