

PERCEPTIONS OF THE INFLUENCE OF ARTIFICIAL INTELLIGENCE ON ADVERTISEMENTS AMONG UNIVERSITY STUDENTS IN NIGERIA

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Abstract

This study examined the influence of artificial intelligence on advertisements among university students in Nigeria. The research design adopted were both survey and case study. Case study was chosen because the three universities that made up the population of the study, were selected from Enugu state. The philosophical underpinning that guided this study was that of diffusion of innovation. The sample was 384 picked via a multi-stage sampling procedure from three universities in Enugu state. The data gathered from the study were presented using mean and tables with percentage. Findings revealed that Nigerian university students were well exposed to AI; the exposure led to them been abreast with AI-driven advertisements; the students purchased products advertised via artificial intelligence; and lack of regulation, among others were identified as the challenges facing AI in relation to advertising as it concerns Nigerian undergraduates. The study recommends that Nigerian government should domesticate the laws that should regulate the application of AI technology in advertising; advertisers should be more creative in their generation of Ad contents via artificial intelligence; and for a better appreciation of AI-linked advertisements, structures should be put in place to ensure that improved technology base, maintenance of accountability and moral principles, as well as the protection of customer confidentiality, are all guaranteed.

Keywords: artificial intelligence, advertisements, influence, university students, Nigeria

Background of Study:

Advertisements are essential parts of global sales tactics used to educate, convince, and shape buyer's buying choices. Over time, technological improvements have drastically altered the field of advertisements, with the incorporation of Artificial Intelligence (AI) coming as an increasingly noticeable pattern. Nigeria, which boasts of the continent's biggest economy, is not unaffected of these shifts, especially as it concerns its digital native university students.

Artificial intelligence, also known as AI, is the modelling of cognitive abilities by machines,

allowing them to carry out duties which usually demand involvement from humans, like understanding, deductive thinking, as well as figuring out solutions. Interestingly, the term Artificial Intelligence for the first time, got a mention in 1956, in a summit (Russell and Norvig, 1995; Martínez-López and Casillas, 2013). At first, the goal was to create a computer mechanism that could mimic the actions of humans. While certain devices, such as household items as well as engines, assert to be intelligent, they lack the capacity to evaluate, perceive, act, and behave. According to Murgai (2018), Artificial intelligence is the combination of internet-based computing, interconnected gadgets, automation, devices,

online material development, and their integration into various corporate procedures and daily life activities.

According to Perez et al. (2018), the notion of AI preceded the development of automation. AI is now used in many areas, including enterprise, healthcare, agriculture, as well as construction, to better deliver to their intended consumers (Ribeiro et al., 2021).

AI has become a crucial tool for advertisers to effectively attract prospects. Many advertising projects require computerized procedures to ensure effectiveness (Negnevitsky and Intelligence, 2005). Managers in companies require an improvised cognitive ability framework for forecasting foreseeable occurrences (Martínez-López and Casillas, 2009; Casillas et al., 2012; Chen et al., 2021). AI can help enterprises manage interactions with customers, spot merchandise, categorize markets, create targeted ads, and address publicized negativities against their brands (Martínez-López and Casillas, 2013; Dubey et al., 2021).

The customer's loose openly composed remarks posted across different sites such as Twitter, Facebook, and different social networking sites are extremely useful to businesses for enhancing their offerings. The incorporation of AI in advertising has given rise to the notion of "smart advertising" (Vakratsas and Wang, 2020) in (Sun et al., 2022). Artificial intelligence has transformed the ways advertisements are done (Qin and Jiang, 2019). This does not limit itself to the layout of ads, instead it is to comprehend the audience's feelings and thoughts regarding advertising components (Abbas et al., 2018). To this end, understanding the buyer habits and way of life is vital (Li et al., 2021). However, comprehending the customer's way of life and conduct is very difficult where cutting-edge technological devices such as Artificial Intelligence is lacking (Di Vaio et al., 2020).

Universities students in Nigeria are a significant target for marketers because of their buying strength, effect over developments, and openness to the latest technological innovations. According to Valentine & Powers (2013), the current college students are technological savvy in the sense that they altogether have the capacity to leverage on the opportunities that the internet offers and rely

deeply on online platforms for numerous engagements which include e-transactions. However, Mitigating prejudice and disparity in data remains crucial for moral considerations as well as to build consumers' confidence in artificial intelligence algorithms (Toreini et al., 2020).

Thus, being technological savvy, these undergraduates are always connected to digital sites, networking sites, and mobile apps, resulting in them being ideally suited for AI-powered advertisements. Additionally, comprehending the way AI impacts advertising among Nigerian university students requires consideration of societal variations along with economic variables. Social norms, language choices, and economic inequalities may all have an impact on the efficacy and approval of automated marketing approaches across broad undergraduate audiences.

Statement of the Problem

Of a truth, the marriage between computing and advertisements has undergone substantial changes, with artificial intelligence playing a key part in the union. This can be seen in the manner in which AI, defined by algorithms that utilize machine learning alongside sophisticated statistical analysis, has transformed a variety of industries, such as advertising. Its effect on buyer habits, tastes, and choices is significant and keeps developing.

Nigeria, which boast of the continent's biggest economy, has a young demographic, with a significant percentage studying in universities. Also, it is a known fact that undergraduates are a population group defined by internet knowledgeability, technological savvy, as well as deep involvement in social networking sites. As a result, they remain a perfect prospect for advertisers looking to use artificial intelligence to impact how customers behave.

However, though this incorporation of artificial intelligence innovations into marketing approaches has grown in popularity around the world, there is a shortage of extensive knowledge about particular effects of artificial intelligence on advertising among undergraduates in Nigeria. This study seeks to fill this void through examining the degree in which AI influence undergraduate students' views, beliefs, as well as practices regarding advertised goods and services.

Research Questions

In order to tackle the research problem, these research questions were constructed:

1. What is the level of exposure of AI in connection to advertisements among undergraduate students in Enugu state?
2. What is the level of knowledge of AI related advertisements among undergraduate students in Enugu state?
3. To what extent has exposure to AI in connection to advertisements led to actual shopping among undergraduate students in Enugu state?
4. What are the challenges militating against AI connection to advertisements among undergraduate students in Enugu state?

Literature Review

Apriani et al. (2024), studied the role of artificial intelligence (AI) and its benefits in digital marketing strategy. It was found that implementing artificial intelligence in advertising can improve customized service, forecasting analysis, chatbots, client assistance, material effectiveness, advertising concentration, and digitization. Also, comprehension of the consumer conduct, intentionality, operational advertising, moral and accountable artificial intelligence, connection with other technological advances, and partnership with artificial intelligence suppliers and entrepreneurs are all effective approaches for integrating artificial intelligence in advertising enterprises. The study recommended, among others that to fully utilize artificial intelligence, businesses ought to make investments in artificial intelligence expertise, prioritize moral and accountable practices, secure user confidentiality and information, explore emerging innovations, and engage with artificial intelligence providers and companies.

Similarly, Haleem et al. (2022) carried out a literature-based study on artificial intelligence (AI) applications for marketing. By reviewing and analysing about 217 artificial intelligence related articles, the findings showed, among other things that language-based AI is used by advertisers to enhance the user interface through marketing platforms, cashiers, and involvement supervisors, while users are now able to count on virtual assistants to guide them

through the purchasing process rather than working it out on their own.

Following the path of the finding above, Nwachukwu (2023), worked on evaluating the influence of artificial intelligence marketing on customer satisfaction with products and services of telecommunication companies in Port Harcourt, Rivers State, Nigeria. It was found that artificial intelligence customisation has a crucial favourable effect on client happiness, as demonstrated by the elevated correlation parameters with both client fulfilment and subsequent patronage. Also, there exist a significant positive relationship between the recommendation system and future purchases and client referrals.

In another development, Oke et al. (2023) investigated the role of artificial intelligence in shaping sustainable consumer behaviour in a cross-section of Southwest, Nigeria. Data gathered were processed with the aid of SPSS version 20 and STATA version 12.0., and findings revealed inter alia that, customers feel that artificial intelligence has some effect on their preferences, as evidenced by individualized suggestions for products and services, however the degree of impact these tailored proposals have on whether or not to buy an item is somewhat minimal.

However, the findings above is a bit at variance with that of Avneet (2015), which in a quest to ascertain the applicability of automation in various fields, conducted a research on artificial intelligence and its application in different areas. The study predicted that although scientists are yet to fully grasp AI's capacity and potential, the innovation and its utilization are projected to exert profound implications on humanity in the coming years.

In the same vein, Yu (2021), in a bid to shed light on artificial intelligence innovation and its consequences for the growth of economy and humanity, while equally addressing the societal as well as the economic impacts on the pace and trend of artificial intelligence advancement, conducted a research on The role and influence of artificial intelligence on advertising industry. It was revealed that AI has invaded all pathways in the advertising sector as it contributes positively to industrial growth, and can substitute for wasteful manual labour, thereby improving total industrial productivity. The study also noted that businesses should

take note of the downsides of AI as it relates to several ethical dangers and data security.

In a qualitative research anchored on the cognitive theory, Sun et al. (2022), looked at employing natural language processing as artificial intelligence for analysing consumer opinion toward advertisement. Among other things, the study concludes that due to the availability of the virtual platforms, customers are well in tune with and engage digital advertisements.

Additionally, Nwachukwu and Miebi (2023), investigated artificial intelligence marketing practices: The way forward to better customer experience management in Africa (systematic literature review). The work found that AI advertising possess the capacity to alter buyer experience management in Nigeria.

Temitayo et al. (2023), with the aim to gauge the impact of artificial intelligence on the delivery standard of Nigerian telecoms businesses, with a special focus data mining, machine learning, and chatbots, carried a research on artificial intelligence and service quality of telecommunication firms in Nigeria. Result showed that data mining and chatbots had a considerable beneficial influence on telecoms customer satisfaction, but machine learning had a negative impact. The study then concludes that AI has an impact on customer satisfaction in Nigeria, with significant attention given to data mining and chatbot, which improve the calibre of service provided to Nigerian subscribers.

Also, Ananyi and Nwosu, (2023), studied artificial intelligence and economic aspects of public universities in Nigeria. It was found that employing AI improves the financial components of Nigeria's public educational institutions. Thus, it is critical to recognize that the incorporation of artificial intelligence in public educational institutions must be done with due regard for issues of security and ethics. The study suggested that by adopting artificial intelligence innovations and maximizing their opportunities, public educational institutions can provide exceptional learning and assistance to their students. Furthermore, public institutions should consider making investments in artificial intelligence technology and facilities so as to support the application of artificial intelligence

into diverse operational activities, including classroom administration.

Theoretical Framework

Diffusion of Innovation Theory

In 1962, E. M. Rogers developed this concept, one of the earliest in social science. It was initially used in communication to explain how an idea or product gradually gains traction and diffuses (or spreads) among a given population or social system.

According to Rogers, people eventually adopt a novel idea, habit, or product as a component of a social system. When someone adopts a virgin idea, they take a different action from what they did in the past (i.e. buy or apply a novel product, get and practice a new behaviour, etc). For a thought, behaviour, or product to be embraced, the person must consider it to be new or innovative.

This theory is relevant to this study due to the fact that artificial intelligence is still emerging and is new in its application in advertising. As it stands, all the respondents have embraced the incorporation of AI in advertising at some point initially, had some reservations about it. However, as time went by and as information about how to use the new idea continues to spread among the social system (i.e., internet users), some “early adopters” provided “early majority” and “late majority” with guided information on the operations of AI-driven advertisements which over time resolved the doubts they had about the technology.

Research Methodology

Research Design

This study was conducted using both the survey research design and a case study. The survey method was opted for in the sense that it is most appropriate to answering the study's research questions. According to Nworgu (2018), a survey research design as a procedure in which a set of people or items are examined by gathering and interpreting data from only a subset of the people or items thought to be representative of the group as a whole. The sample refers to the individuals or items studied as a representative of the entire group (the population). Then, the choice for case study was judging from the fact that the three higher institutions which were made of

one federal, one state and one private universities that made up the population of the study, were picked from Enugu state.

Population of the Study

The population of this study was made up of all the students in the three universities- University of Nigeria Nsukka (UNN), Enugu State University of Science and Technology (ESUT), and Coal City University (CCU) which were used as representative universities for federal, state and private universities respectively in Enugu state. As was gotten from the academic planning unit of these universities, UNN has 42,300 students; ESUT has 50,000 students, while Coal City University has 999 students. Therefore, the population for this study was 93,299 students drawn from the three universities. The figure was arrived at by summing up the population of students from the universities.

Australian calculator was used to determine the sample size of 383 used in the study. Multistage sampling technique was utilized in picking the universities, faculties, departments and levels of the respondents. Copies of the questionnaire were administered to the respondents in the selected levels using the quota sampling process and with the principle of oversampling, one additional sample was added to create a balance of 32 copies for each level of the respondents thereby bringing the sample size to 384.

Table showing the list of universities, faculties, departments and levels that were picked

For this study, descriptive statistics of mean and tables with percentage was used to analyse the research questions. A four-point Likert scale of strongly agree, agree, disagree and strongly disagree were also adopted for ease of statistical analysis. A weighted mean score of 2.5 and above implied that the questionnaire item was accepted while 2.4 and below indicated rejection.

Presentation of Findings

What is the level of exposure of AI in connection to advertisements among undergraduate students in Nigeria?

SA = Strongly Agree; A = Agree; Disagree; SD = Strongly Disagree

| | | | | | | |
|-----------------|--------|---|---|--------|---|------------|
| ITEM STATEMENTS | S A | A | D | S D | M | RATI NG |
|-----------------|--------|---|---|--------|---|------------|

| UNIVERSITIES | Faculties | Departments | Level | Total |
|---------------------------------------|---------------------|-------------------------|-------|-------|
| COAL CITY UNIVERSITY | Natural & Applied | Chemical Sciences | UT | 32 |
| | Education | Education Foundation | AT | 32 |
| ENUGU STATE UNIVERSITY OF SCIENCE AND | Engineering | Electrical/Electronic | UT | 32 |
| | Management Sciences | Business Administration | AT | 32 |
| UNIVERSITY OF NIGERIA | Agriculture | Food Science and | UT | 32 |
| | Health Sciences & | Nursing Sciences | AT | 32 |

| | | | | | | |
|---|---------|---------|--------|--------|---------|--------------|
| To what extent are undergraduate students in Enugu state exposed to AI-driven advertisements? | | | | | | |
| a. Fully exposed | 22 2 | 11 3 | 2 4 | 2 1 | 3. 4 | Accep ted |
| b. exposed | 81 4 | 23 4 | 4 1 | 2 4 | 3. 0 | Accep ted |
| How often do you see advertisements powered by AI? | | | | | | |
| a. Very often | 30 1 | 53 6 | 2 - | | 3. 7 | Accep ted |
| b. Often | 19 9 | 83 5 | 6 3 | 3 3 | 3. 1 | Accep ted |
| c. | | | | | | |

The above findings indicate that the respondents are really exposed to AI-driven advertisements. Supporting this, (Mariani and Borghi, 2021; Yu, 2020) in (Suraña-Sánchez, C., & Aramendia-Muneta, M. E., 2024), hold that in the area of AI-powered revolutions, intelligent machines have found usage in a variety of industries, including hospitality such that recently, robots have been used in hotels and resorts to improve customer experiences.

What is the level of knowledge of AI related advertisements among undergraduate students in Nigeria?

SA = Strongly Agree; A = Agree; Disagree; SD = Strongly Disagree

| | | | | | | |
|--|----|---|---|--------|---|------------|
| | SA | A | D | S D | M | RATIN G |
|--|----|---|---|--------|---|------------|

| | | | | | | |
|--|-----|----|-----|---------|---------|----------|
| I know about AI related advertisements | 321 | 40 | 19 | - | 3. 8 | Accepted |
| Do you click and view the advertisements or ignore the advertisements? | | | | | | |
| a. Click and view the advertisements | 348 | 18 | 14 | - | 3. 9 | Accepted |
| b. Ignore the advertisements | 70 | 80 | 123 | 1 06 | 2. 3 | Rejected |

Findings from the table above are in tandem with the work of sun et al. (2022) which reported that as a result of to the prevalence of the virtual platforms, customers are well in the know about and engage digital advertisements.

To what extent has exposure to AI I connection advertisements led to actual shopping among undergraduate students in Nigeria?

SA = Strongly Agree; A = Agree; D = Disagree; SD = Strongly Disagree

| | | | | | | |
|--|---------|---------|--------|--------|---------|--------------|
| | SA | A | D | S D | M | RATIN G |
| I used to purchase AI advertise d products | 25 8 | 10 4 | 1 6 | 2 | 3. 6 | Accepte d |
| I purchase AI advertise d products | | | | | | |
| a. Dail y | 17 3 | 20 1 | 6 | - | 3. 4 | Accepte d |
| b. Wee kly | 21 7 | 14 1 | 9 | 1 3 | 3. 4 | Accepte d |

The study by Oke et al. (2023), points to the direction of the findings in the table above as it reported that buyers believe that artificial intelligence has a measure influence on their decisions, as showcased by individualized

suggestions for products and services, although the degree of effect these tailored proposals have on whether or not to buy an item is low.

What are the challenges militating against AI in connection to advertisements among undergraduate students in Nigeria?

SA = Strongly Agree; A = Agree; D = Disagree; SD = Strongly Disagree

| | S A | A | D | S D | M | RATI NG |
|--------------------------------|---------|---------|--------|--------|---------|--------------|
| Identity theft | 31 8 | 42 | 1 1 | 9 | 3. 8 | Accept ed |
| Lack of standardisation | 20 1 | 14 8 | 1 9 | 1 2 | 3. 4 | Accept ed |
| Lack of access to the internet | 18 8 | 14 8 | 3 2 | 1 2 | 3. 3 | Accept ed |

The findings from the table above identified identity theft, lack of standardization and lack of access to the internet as some of the challenges facing AI in relation to advertising among undergraduates in Enugu state. Agreeing to these findings, (Mobayo et al., 2021; Imhanyehor, 2021; Okwu, 2021) pointed out a number of new obstacles to the implementation of artificial intelligence in Nigeria, including understanding, competence in the area or mechanism, sufficient electricity availability, technological resources, and confidence in structures powered by AI.

Also, Parasuraman, (2021) for instance, stressed the need to establish statutory and supervisory guidelines for regulating the operation and check of the algorithm.

Conclusion

Notable findings that emanated from this study reveal that the respondents have a high level of contact with AI in relation to advertisements which means that these advertising methods are with them and part of their daily activities. This exposure equally translated to knowledge as their responses showed that they are exposed to AI which in turn enables them to engage advertisements put up via AI, thereby showing that there is a significant relationship between exposure and the choices buyers make. On the other hand, various challenges ranging from regulation to security and the likes, are there

that should be tackled so as to properly guide the application of AI in advertising.

Recommendations

Going by the findings of this study, the following recommendations are made by the researchers:

1. Measures need to be put in place to deal with the obstacles associated with artificial intelligence-driven advertisements, such as enhancing the technology base, maintenance of accountability and moral principles, as well as the protection of customer confidentiality.
2. Advertisers need to be generating more compelling and pertinent artificial intelligence-driven contents which should reflect university students' tastes and desires.
3. Nigeria government in particular, should localise the use and the rules guiding the application of this technology in advertising.
4. More studies are needed in this area to better understand the long-term impacts and consequences of artificial intelligence-driven advertising on buying habits and cultural standards across university students in Nigeria.

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