VOL. 06 NO. 6,
NOVEMBER, 2024
E-ISSN 3027-1401
P-ISSN 3026-9148



African Scholar Publications & Research International
www.africanscholarpub.com

Journal of Arts and Sociological Research (JASR)

Bridging the Gap: A Conceptual Review of Big Data Analytics Knowledge by Brand Communication Campaign Managers in Nigeria

Ajilore Kolade Ph.D., Oguchi Ajaegbu Ph.D., & Sharon Nkanim Ugbo

Department of Mass Communication, Babcock University, Ilishan-Remo, Ogun State, Nigeria

Corresponding Author: sharonugbo@gmail.com

Abstract

Big data analytics has revolutionized various industries, including advertising, by enabling more precise targeting, enhanced customer insights, and improved campaign performance. Yet, there is a noticeable gap in the knowledge and application of big data analytics among brand communication campaign managers in Nigeria. This review aims to bridge this gap by examining the state of big data analytics knowledge within the Nigerian advertising industry. Key challenges faced by brand communication campaign managers were identified through a comprehensive literature review and analysis of existing studies premised on the Technology Acceptance Theory. This review highlights the disparity between global advancements in advertising analytics and the slower adoption rate in Nigeria. The implications of the knowledge gap on the effectiveness of brand campaigns and the overall industry growth were discussed. Furthermore, strategies were proposed to enhance big data analytics proficiency among Nigerian brand communication campaign professionals. Findings reveal that the Nigerian advertising industry can leverage big data to achieve more effective and efficient marketing outcomes by addressing these challenges. The review underscores the importance of equipping brand communication campaign

managers with the necessary skills and knowledge to harness the power of big data, ultimately contributing to the industry's competitiveness in the global market.

Keywords: Big data, Big data analytics, Knowledge gap, Brand campaign, and Brand communication campaign managers

Introduction

The advertising industry is undergoing a profound transformation driven by technological advancement, the Internet, and the proliferation of digital channels. Among these technological innovations, big data analytics has emerged as a powerful tool for understanding consumer behaviour, optimizing advertising strategies, and making informed decisions (Hamed et al., 2024). Thus, knowledge of big data analytics becomes necessary because integrating big data analytics has become indispensable for optimizing marketing strategies and enhancing decision-making processes in Nigeria's rapidly evolving advertising landscape. More so, the Internet has provided opportunities for individuals and organizations to interact online, hence, data is generated as people surf the Internet for information, engage brands, and shop online which results in a large amount of information that can be collected and analyzed. This large data is what is referred to as big data. Big data has immense potential for gaining valuable insights and driving informed decision-making (Gwani, 2023).

However, the sheer volume of data generated can be overwhelming, hence, big data analytics offers a way for businesses to harness this big data and use it to gain consumer insights (Vasilopoulou et al., 2023). Big data analytics encompasses collecting, processing, and the analysis of large volumes of data from diverse sources to extract valuable insights and inform decision-making. It is the complex process of getting information on hidden patterns, market trends, and consumer preferences (Garduno, 2022). Furthermore, big data analytics enables real-time monitoring and optimization of advertising campaigns, allowing practitioners to adapt strategies quickly in response to changing market conditions and consumer behaviour (Gupta & Kumar, 2020). However, limited knowledge of how to harness modern research techniques to gain

comprehensive consumer insight effectively has made brand communication campaign managers seek to adopt advanced research methods like big data analytics that would effectively provide insight into the changing needs of consumers because it is difficult in this era to reach customers through traditional marketing methods (Cavlak & Cop, 2021).

Big data analytics is revolutionizing decision-making processes in Nigeria (Gwani, 2023). It incorporates machine learning algorithms and Artificial Intelligence (AI) to offer a more sophisticated approach to understanding and interpreting data, unlike the traditional processing methods which do not adequately do so. Global businesses are adopting various technologies to gain a competitive advantage to enable them to cope with the changing business landscape in the digital world (Ginting, 2020). By harnessing big data, organizations can gain valuable insights, improve operational efficiency, enhance business intelligence, and drive innovation and economic growth. Consequently, businesses that operate traditional processing methods cannot adjust and cope with the requirements of the current era (Pournarakis et al., 2017, Hasan, 2021). This is because new concepts have emerged to meet the needs of the digital economy and require an understanding of the concepts and tools for a successful adaptation.

As a burgeoning economy, the Nigerian business scene has witnessed a surge in digital transformation across various industries, including advertising. However, the extent to which brand communication campaign managers in the country have embraced and mastered big data analytics remains a subject of exploration. Big data analytics plays an important role in various sectors, from enhancing business intelligence to facilitating evidence-based policymaking. The technology can effectively use the information collected conveniently and visually to solve applied problems and make informed decisions (Shkuropat, 2020).

Despite the global trend towards big data analytics such as widespread adoption across industries including advertising, scholars like Hamed et al., (2024); Alawneh and Alkhatib (2020) argue that investment in infrastructure with a growing use of advanced analytics techniques such as machine learning, artificial intelligence, predictive analytics, and deep learning by businesses globally is not evident in developing economies because awareness and understanding among both management and employees remain significantly low. This limited understanding hinders the utilization of advanced analytical techniques that could enhance campaign effectiveness (Hamed et al., 2024). Particularly concerning big data analytics tools proficiency, ethical and

privacy implications. The extensive collection and analysis of consumer data raise concerns about privacy infringement, data misuse, and the potential for algorithmic bias. Moreover, the perceived complexity of big data analytics technologies and the rapid pace of innovation present obstacles for brand communication campaign managers seeking to leverage these tools effectively.

Considering the above-listed issues, this review examined relevant concepts and explores variables crucial to understanding big data analytics knowledge by brand communication campaign managers in Nigeria, shedding light on existing gaps in the literature and identifying areas for improvement. Hence, by identifying key areas of existing gaps and concerns, the findings of this review can inform the development of programs, best practices, and regulatory guidelines to support the responsible and effective use of big data analytics by brand communication campaign managers in Nigeria.

Big Data Advertising

Big data is data that is too large to be processed by traditional processing techniques. The high volumes of data sets, that traditional computing tool cannot process, are being collected daily. These high volumes of data are referred to as big data (Pathak, 2021). Big data lets advertisers know what sites users visit, what they browse, what products they buy, and more (Roth, 2021). In this era of technological advancement and media convergence, consumers are living digital footprints using several digital channels, allowing businesses to gather, store, and retrieve information, whenever and however they deem necessary (Cavlak & Cop, 2021). The amount of data exchanged online is enormous. These data are characterised by volume (huge amount of data), velocity (constant flow of real-time data), and variety (structured, unstructured, or semi-structured data) which is different from traditional data. Put succinctly, “There is a difference between big data and traditional database. This difference is in the form of variability, variety, velocity, volume, value, veracity, and visualization” (Aljumah et al., 2022. p 4).

Big data advertising is a relatively new area for marketers and advertisers (Roth, 2021). The main aim of big data advertising is to target consumers with the right content and increase conversion rates. Besides, one way that marketing communicators can use big data to their advantage is by looking at trends of past purchases. This can be achieved by observing customers' past purchases and what products are browsed on their site. With this information, advertising teams can create

brand campaigns that show consumers products they might like and increase the chances of a sale.

Today, businesses can easily get all kinds of information about consumers from different sources. Businesses can obtain structured data (such as customer relations management) from traditional databases that belong to their customers or unstructured data (such as video, text, image, and e-mail) obtained from new communication technologies and user platforms (Lansley & Longley, 2016 in Cavlak & Cop, 2021: p 4). However, the mere availability of data does not guarantee the assertiveness of the information and does not reveal the solution to the company's business problem (Almeida, 2023). What this implies is that organisations should ensure the origin of the elements of the analysis, because it is using the right tools that the data can be studied and interpreted, thus, all stages of the analysis from data collection to validation of the findings should be respected. Discussed below are big data sources.

Today, consumer interaction on the internet is tracked. Individuals generate volumes of data every second through social media page visits, videos watched, likes, comments, tweets, search history and so on that is captured in the databases. This data is analogous to insights into our interests, current needs, or responses to certain products already purchased (Mehta, 2017). Organisations collect such data for higher customer acquisition and retention by targeting the delivery of promotional content for their products and services. This means, there is now an increase in demand for data processing and storage tools like Hadoop, and Tableau which are at the core of big data technologies.

However, the challenge is that not many organisations have the setup yet or trained professionals to collect and manage such data. These trained professionals are the ones who identify possible areas and audiences that would impact their brand campaigns. This implies that organisations need data analysts to analyse the large amount of data whose insights help build a relationship with current and prospective customers. This relationship can best be achieved when businesses can anticipate and predict consumers' needs based on their past interactions with the adverts or websites.

Big data is obtained from numerous sources, including point of sales, in-store path (path data), email platforms, and User Generated Content (UGC). Point of sale (POS) systems have been traditionally used in data gathering and as a starting point in predicting customers' future demands. For example, Point-of-sales systems provide a seamless purchasing process for the consumer and a networked data-gathering system for the retailer. Self-checkout stalls and POS terminals with minimum assistance,

shorten lines, and speed up checking. With the migration of POS systems to smartphones and tablets, a broader range of businesses are now able to interact with their consumers in a variety of ways (Vasilopoulou et al., 2023). This means that the system provides a direct line of communication between the consumer and the organisation, detailed consumer-specific information that is easily accessible, besides, such information can be found in consumer demographic profiles, purchase records, reward card details, coupon redemption rates, and much more.

Also, email platforms are being exploited for data where personalised recommendations and notifications are sent. Many businesses in Nigeria whether big or small are into email marketing, which means email platforms provide a good source for data collection. Many businesses also resort to retargeting and dynamic creative optimisation based on past interactions. A good example is artificial intelligence, which uses customer purchase history to advertise products of similar interest to them. As consumers get savvier and more informed, they can detect irrelevant marketing strategies easily, hence, the advertisers need to display their content only after understanding what customers want to buy. This can be achieved if businesses can harness big data and analytics tools to produce the best possible customer insights (Mehta, 2017).

Data in-store path which was once exclusive to online shops is also available to in-stores. Data on customers' browsing and acquisition habits are now being incorporated into brick-and-mortar locations (Vasilopoulou et al., 2023). What this implies is that big stores like Shoprite, Games, Spar, etc equipped with beacon Bluetooth technology enable customers' cell phones to detect their presence in these stores. With the help of beacons, the store can send content, provide offers, and give rewards based on the customer's internet browsing history and location while they're in the store (Vasilopoulou et al., 2023).

Big Data Analytics

If big data is the new global oil, data analytics is the combustion engine (Gentsch, 2019). Big data analytics is the process of extracting meaningful insights from such raw big data. It is the often-complex process of examining big data to uncover information such as hidden patterns, correlations, market trends, and customer preferences that can help organizations make informed business decisions, (Chai, 2021). In simple terms, it is the ability to read trends. Big data analytics uses algorithms to analyse data sets to extract valuable and undiscovered patterns,

correlations, and information (Kenza et al., 2023). This implies that data analytics is also used in identifying significant links between the variables included in huge data sets and to extract previously undetected, valid, valuable, and hidden patterns and information from such data sets. Businesses, in recent times, rely heavily on big data to gain better knowledge about their customers, hence, advertising practitioners in Nigeria need to explore the problem-solving instrumentality of big data analytics (Ajilore, 2024).

The development of big data analytics can be traced back to the early days of computing when organisations began to use computers to store and analyse large amounts of data. This went on until the late 1990s and early 2000s when big data analytics took off as organisations increasingly used computers to help them make sense of the volumes of data generated by their businesses ("What is Big", 2023). Today organisations of all sizes across different sectors are making big data analytics an essential tool in expanding their marketing activities. This means that by harnessing the power of big data, organisations can gain insights into their customers, their businesses, and the world around them that were simply not possible before. With the increasing interest by decision-makers in learning from historical data to gain competitive advantage, data analytics have a substantial influence on technology and research (Kenza et al. 2023 p. 2). That is as the field of big data analytics continues to evolve, it is expected that even more amazing and transformative applications of this technology will be experienced in the years to come.

With the evolution of technology and the increase in the volume of data that flows in and out of organisations daily, data analyst not only wants to collect the data but also want to understand the meaning of the data collected and use the information extracted to help them make decisions. What this translates into is that it has become necessary to engage in faster and more efficient ways to analyse data. Many individuals believe that there is a need for the acquisition of new specialised tools and methods in data analysis and other architectural structures needed to store and manage the data. Some scholars argued that though the analytics process, including the deployment and use of big data analytical tools, is seen by organisations as a tool to enhance operational efficiency, it has strategic potential, drives new revenue streams, and gains competitive advantages over competitors (Sivarajah et al., 2017). However, the scholars went further to state that there are different types of analytic applications to consider before purchase. This means that before the hasty use and purchase of expensive big data

analytic tools, there is a need for organisations to first understand the big data analytics environment.

Furthermore, big data analytics is useful to businesses in many ways such as in understanding customer behaviour to optimise the customer experience, predicting future trends to make better business decisions, improving marketing campaigns by understanding what works and what does not work, and increasing operational efficiency by understanding where the issues are and how to tackle them ("What is Big", 2023). What this simply implies is that customer insights allow the advertiser to better segment their audience to target appropriately. Thus, Big data analytics is powering everything we do online in every sector so, so the importance of this technology cannot be overemphasised because it includes effective market performance, creates income opportunities, and customer personalisation, and generally improves operational efficiency providing businesses with a competitive edge over competitors (Chai et al, 2021).

Data is collected by data analysts and other analytic professionals such as data scientists, statisticians, etc, from different sources. Some data are structured, others may be semi-structured or unstructured. The data collected is cleaned, that is, the data is sieved for relevance to what it would be used before it is analysed. Data is cleansed to improve the data quality. Data professionals scrub the data using scripting tools or other data quality software and then look for any errors or inconsistencies, such as duplications or formatting mistakes, and organize and tidy up the data (Chai et al, 2021). Additionally, there are four steps in the data analytics process:

The first step is to mine the data from data streams such as web page logs, mobile phone records, social media content, cloud applications, customer emails, surveys, and Internet clickstream data. These data streams are the common data streams used by many organisations. After data is collected from these streams and stored in a data warehouse or data lake. The data is prepared and processed and then data professionals organise, configure, and categorise the data properly for analytical queries, hence. thoroughly prepared and processed data make for higher performance from analytical queries (Chai et al., 2021).

Analytical software is used in analysing the collected, processed, and clean data. Some other tools used in data analysis include tools for data mining, this tool sieve through data sets in search of patterns and correlations. There is also machine learning, which uses different algorithms to analyse large data sets, deep learning, which is an advanced offshoot of machine learning, text mining, statistical analysis software,

programmatic, mainstream business intelligence software, artificial intelligence, and data visualization tools. These tools according to Priyadharshini (2022) are commonly applied in predicting future consumer preferences, trends, and other future consumer actions.

Knowledge Gaps in Big Data Analytics

The success of an organisation depends more on its intellectual and systems capabilities than physical assets, hence, it is of considerable importance to organisations to systematically develop competitive advantageous insights in a way that will aid their decision-making processes (Banasiewicz, 2013). This implies that the uniqueness of an organisation's knowledge with the ability to use that knowledge drives success. Brand communication campaign managers today have a growing awareness and utilisation of big data analytics to enhance their brand campaigns and strategies. This is because the use of big data has become increasingly important as it allows professionals to make data-driven decisions, target specific audiences more effectively, and optimise campaign performance. Given the rapid evolution of technology and data analytics, brand communication campaign managers in Nigeria should engage in continuous learning and human capital investment to stay updated on the latest trends, tools, and best practices.

Knowledge acquisition by brand communication campaign managers is important because it helps organisations to deal effectively with changes, increasing their productivity, and paving the way to development and innovation (Ekambaram et al., 2018). Additionally, organisations are utilising the knowledge management practice and moving towards knowledge-driven systems to improve their competitiveness and business values (Shabbir & Gardezi, 2020). This implies that to achieve efficiency and effectiveness, brand communication campaign managers and organisations must accept this reality because there is a need to explore and understand the acquisition and sharing of knowledge of technological innovations in expanding marketing activities because the combination of data, analytical tools, and knowledge management practices affects organisation performance.

However, there are knowledge gaps in Nigeria's literature on big data analytics. These gaps primarily revolve around several key areas such as a general lack of awareness, understanding, training and education, organisational support, and industry-academia collaboration among marketing communication professionals about what big data analytics entails and its potential business value. According to Krasniqi et al., (2024),

many advertising practitioners do not have a deep understanding of big data analytics's fundamental concepts, tools, and techniques. The belief is that this lack of understanding hinders the adoption of advanced analytical techniques that could enhance the effectiveness of brand campaigns. For other scholars such as Gupta et al., (2021) posited that the inadequate technological infrastructure due to high cost has led to limited access to advanced analytical tools and skill sets. This implies that the inadequacies present a major barrier to adopting big data analytics.

Awareness and Basic Understanding of Big Data Analytics

Many brand campaign managers in Nigeria have limited awareness of the potential of big data analytics. This lack of awareness results in missed opportunities for optimizing campaigns and achieving better outcomes (Krasniqi, et al., 2024). The belief is that even when aware, the understanding of big data concepts such as predictive analytics, machine learning, and data mining is often superficial. This superficial understanding hinders fully exploiting big data tools and techniques. For others, “There is a significant lack of awareness and understanding of big data analytics among advertising practitioners. Many do not fully grasp the potential benefits and applications of these technologies” (Sule, 2022).

Limited Skillset and Inadequate Data Education

This is one of the key knowledge gap areas identified in the literature on big data analytics. The literature suggests that several brand communication campaign managers in Nigeria lack the essential skills to harness big data analytics' full potential. This variable pertains to the depth of practitioners' understanding of the fundamental concepts and principles of big data analytics. This is because a basic understanding of concepts such as data mining, machine learning, predictive analytics, and data visualization is crucial in driving brand strategies. However, many Nigerian brand communication campaign managers may lack this foundational knowledge, limiting their ability to apply big data analytics effectively. For Ogechukwu (2019), a noticeable deficiency in professional training opportunities and educational programs focused on big data analytics contributes to the skill gap among brand communication campaign managers in Nigeria. The literature revealed that this limitation positing this technical skill gap in big data analytics is a significant hurdle because many professionals lack the necessary training and expertise to utilize advanced analytics tools effectively (Tariq et al., 2020).

Proficiency in using big data tools such as Hadoop, Spark, SQL, and Python and analytics software such as Google Analytics, and Tableau amongst others is essential for implementing data-driven brand strategies. The scarcity of these skills among brand communication campaign managers in Nigeria is a critical gap that needs to be addressed through targeted comprehensive training and education programs tailored to the specific needs of these professionals in Nigeria. A dearth of formal education on big data analytics hampers the development of a skilled workforce capable of leveraging data for strategic advertising campaigns. Ogechukwu, (2019) stressed the implication for the advertising industry in Nigeria. The argument is that comprehensive research studies are scarce on the practical application and benefits of big data analytics in the Nigerian advertising context. Thus, this gap in literature limits the ability of professionals to make informed decisions (Rosario and Dias, 2023).

Insufficient Integration of Technology

Many advertising agencies in Nigeria still grapple with the integration of advanced analytics tools into their day-to-day operations. The literature suggests a reluctance to adopt new technologies, possibly due to budget constraints, lack of awareness, or resistance to change within organizational structures. More specifically, studies dealing with the costs of big data technology have described many perceived challenges which include consultancy fees, installation engineers' fees (Singh & Hess, 2017), overhead training fees (Brown & Souto-Otero, 2020), cost of maintenance, networking security, skill personnel and equipment for hardware and software (Vitari & Raguseo, 2022). However, given the difficulties for organisations in determining the actual cost of technology, brand communication managers largely rely on their perceptions of costs when action needs to be taken. Besides, going by the technology acceptance theory, costs play a vital role in the adoption process, hence, the higher the costs are, the longer the adoption process will take. Thus, the argument is that organisation that perceives that big data analytics tools and infrastructure have higher costs do not adopt the technology while those that perceive that big data analytics tools and infrastructure has lower costs adopt the technology.

Limited Data Privacy Awareness

Big data technology has raised ethical and privacy concerns despite the many gains. Scholars argue that these concerns are multifaceted because they stem from the fact that the use of big data requires access to large-scale amounts of personal information

(Howe & Elenberg, 2023). Therefore, as Artificial Intelligence (AI) becomes increasingly integrated into brand campaign strategies, prioritizing ethical considerations is essential (Farzan, 2023). This is because the evolving advertising technology comes with implications such as data privacy, security, data breaches, deepfakes, and surveillance advertising, thus, safeguarding consumer privacy, combating bias, embracing transparency and accountability, prioritising fairness, and fostering human-centric decision-making becomes necessary. By doing so, the judicious use of technology can be ensured while steadfastly respecting people's privacy. Ethical and privacy concerns are:

Data privacy: Advertisers are increasingly collecting and using personal data to segment and target appropriately. This has raised concerns about how data is collected, stored, and used. The argument is that there should be transparency in the use of personal data and users' consent is obtained before use for advertising purposes, hence, there should be rigorous security measures to collect and store data securely.

The principle of transparency and accountability: It ensures openness in AI operations and holds AI creators responsible for the social, ethical, and legal consequences of their technology. It also involves the responsibility to ensure that AI technologies such as deepfakes are utilised in ways that respect human rights and dignity (Bogren & Hussein, 2023). Deepfakes are synthetic media that can be used to create realistic videos or images of people saying or doing things that they never actually said or did.

Surveillance advertising: Surveillance advertising uses data collected from people's online activities to target them with advertisements. This can be done without people's knowledge or consent. Surveillance advertising raises concerns about privacy and the erosion of personal autonomy. Advertisers need to be transparent about how they are using surveillance advertising and obtain users' consent before tracking their online activities.

Considering the above, it is evident that big data analytics knowledge in advertising cannot be undermined. While there is some literature on big data analytics in the Nigerian advertising ecosystem, these studies remain fragmented, with limited comprehensive studies and case analyses. However, a further cohesive body of empirical research would provide valuable insights into the challenges and opportunities associated with its adoption in the advertising industry (Hair et al., 2019).

Theoretical Framework

This paper is anchored by the Technology Acceptance Model (TAM). Developed by Fred Davis in 1989. TAM was originally developed to explain technology acceptance and adoption. The Model aimed to "provide an explanation of the determinants of computer acceptance that is general, capable of explaining user behaviour across a broad range of end-user computing technologies and user populations, while at the same time being both parsimonious and theoretically justified" (Davis et al.., 1989, p. 985). The technology acceptance model posits that the actual use of a technology is determined by an individual's intentions to use the technology, hence, as the individual's intentions to use the technology increase, the likeliness of use is heightened (Burgess & Worthington, 2021).

The technology acceptance model has since been expanded and refined by Fred Davis, Paul Warshaw, and Richard Bagozzi in 1989, with various adaptations to the model such as the TAM- TPB model proposed by Taylor and Todd in 1995 which integrates the theory of planned behaviour and technology acceptance model, a newer version called TAM 2 in 2000 by Venkatesh and Davis and additions to the original model too. Some common extensions include the inclusion of additional constructs such as perceived enjoyment, perceived cost, perceived risk, perceived experience, subjective norms, social influence, and attitudes or behaviour. The intent was to address the ability to predict peoples' intention to accept technology and to explain these intentions in terms of perceived usefulness, perceived ease of use, and other related variables. The model is mainly shaped by two key factors: perceived usefulness and perceived ease of use.

Perceived Usefulness: It refers to the degree to which a user believes that using a particular technology would enhance their performance or is beneficial. It reflects the subjective assessment of the technology's usefulness and effectiveness in achieving specific tasks. Therefore, as the perceived usefulness of a particular technology increases, intentions to use a particular technology also increase.

Perceived Ease of Use: It refers to the extent to which a user believes that using a particular technology would be straightforward and free of complexity. It reflects the perceived simplicity, user-friendliness, and ease of learning associated with the technology. These perceptions are influenced by various factors such as personal characteristics, social influences, and system characteristics.

The model evolved from the theories of Reasoned Action and Planned Behaviour which underscore the principle of specificity. This means that to best predict consumer

behaviour, the perceived usefulness and ease of use of a particular technology must relate to specific intentions and subsequently to a specific behaviour. This invariably connotes that any given behaviour includes an action, target, period, and context (Burgess & Worthington, 2021). TAM predicts that intentions lead to behaviour, but intentions do not always guarantee behaviour. For instance, an individual might intend to use big data analytics but not follow through with it. This is because there are factors that influence the strength of the relationship between intentions and behaviour. Since the model underscores the principle of specificity, any given behaviour includes an action, target, context, and period.

The model assumes that firstly, individuals evaluate new technologies based on their perceived usefulness and perceived ease of use. Secondly, individuals are rational decision-makers who assess the potential benefits and costs of adopting a new technology before deciding whether to use it. Thirdly, TAM acknowledges that individuals' attitudes and perceptions towards a technology influence their behavioural intentions to use it. And fourthly, social influences, organisational context, and system characteristics may also influence individuals' acceptance and adoption of new technologies. TAM provides a valuable framework for understanding the factors that influence individuals' acceptance and adoption of new technologies, helping researchers and brand communication campaign managers design interventions and strategies to facilitate effective advertising campaigns, advert campaign effectiveness, gather consumer insights, innovate and adapt to changing preferences, adopt new technological platforms such as virtual reality, augmented virtual reality and personalised targeting algorithms

Critical Discourse on Big Data Analytics Knowledge by Brand Communication Campaign Managers in Nigeria

The role of brand communication campaign managers in Nigeria has evolved significantly with the advent of big data analytics. This transformation is part of a global trend where data-driven decision-making is becoming central to advertising strategies. Big businesses the world over are using big data and analytics to gain big success. Online retail giant like Amason, uses its huge data bank to access customer payments, names, addresses, and search histories. It uses these details to improve customer relations and create content and personalised offerings. Other retail giants are Starbucks, the American Express Company, leading brands in Nigeria such as Coca-Cola, which uses big data to ensure the success of their customer offers, Netflix

uses it to gain insight into the viewing habits of international viewers, and Uber amongst many others also consistently use big data to analyse customer behaviour and as part of their core investments (Duggal, 2023).

However, failure to fully engage with big data limits organisations' market intelligence, reducing their ability to develop responsive marketing strategies (Brewis et al., 2023). Such engagement is not necessarily perceived as straightforward, because organisations with limited big data analytics skillsets are often challenged by volumes of data beyond their capability to comprehend and use. The literature revealed that big data analytics as a crucial source of added value can protect an organisation's market position and transform its brand strategies. However, the knowledge and application of big data analytics among Nigerian brand communication campaign managers face numerous challenges. This discourse critically examines these challenges, highlighting the gaps and proposing solutions to bridge them.

Findings reveal that Nigeria's awareness level of big data analytics is low. This has affected the rate of adoption in Nigeria which remains a challenge. Media and communication experts believe that brand communication campaign managers in Nigeria do not fully grasp the potential benefits and application of big data and analytics because practitioners lack awareness and understanding of the technology (Sule, 2022). This deficiency leads to missed business opportunities. Moreover, even in situations with some level of awareness of the technology, understanding concepts, tools, and techniques such as machine learning, predictive analytics, and artificial intelligence is usually superficial. However, the proposed solution lies in conducting awareness campaigns and workshops that would help educate brand communication campaign managers about the benefits and applications of big data analytics (Krasniqi et al., 2024).

Another notable area of big data analytics knowledge among brand communication campaign managers in Nigeria is a limited skillset. The significant gap in the technical skillset required to implement big data analytics effectively has hindered the advertising industry in Nigeria from benefiting from the tremendous gains accrued from its business value as witnessed by global businesses utilizing the technology. The argument is that the technical skill gap in big data analytics among brand communication campaign managers in Nigeria is a significant hurdle because many advertising professionals lack the necessary training and expertise to utilize advanced analytics tools effectively (Hamed et al., 2024). This deficiency limits the ability to make data-driven decisions and reduces the overall effectiveness of brand campaigns

because big data analytics helps a high percentage of brand communication campaign managers to build better relationships with potential customers, hence, brands using big data for audience segmentation can double their click-through rate and personalize their offering, besides, by 2021, over 65% of organisations globally reported using big data analytics in their campaign strategies (Eser, 2023).

Furthermore, Technavio's 2020 market report puts worldwide big data market growth at 9.13%, while spending on big data analytics globally was predicted to hit $ 215 billion the next year. In Nigeria, industry experts are convinced that there would be further growth in the industry going by the value of the advertising market in Nigeria which is put in the range of N500 billion ($1b) far higher than the figure of about N120 billion believed in the industry (Obi, 2022). With the present advertising ecosystem, growth would be easily sustained by adopting data-driven market campaigns because the lack of accurate audience measurement hinders effective targeting and campaign evaluation. These statistics present a huge growth opportunity in the advertising landscape in terms of product development and market penetration; hence, it becomes imperative for brand communication campaign managers in Nigeria to emulate the industry's best practices to be globally competitive.

Moreover, the adoption of big data analytics in advertising holds immense potential for enhancing brand campaign effectiveness, improving audience targeting, and maximizing return on investment (Vilares & Saiz, 2019). By leveraging big data analytics techniques, brand communication campaign managers can gain comprehensive insights into consumer preferences, identify emerging market trends, and appropriately tailor advertising messages to target segments. This implies that, by staying informed about the latest trends and integrating them into their strategies brand communication campaign managers can leverage the power of digital technology to reach and engage their target audience effectively (Idoko, 2023). Besides, big data analytics enables real-time monitoring and optimization of advertising campaigns, allowing practitioners to adapt strategies quickly in response to changing market conditions and consumer behavior. As Nigeria continues to embrace digital transformation, the effective utilization of big data analytics will be crucial in shaping a sustainable and prosperous future (Gwani, 2023).

According to Ogechukwu, (2019), to encourage adoption, specialized training programs and certifications should be invested in big data analytics to improve the technical skills of brand communication campaign managers. This is because of the unavailability of training programs for brand communication campaign managers in

Nigeria, the required skills to leverage big data analytics will not be fully developed. Many brand communication campaign managers rely on basic tools such as Excel for data analysis which are insufficient for handling large datasets and complex analyses. The implication from the literature is that reliance on basic tools limits the scope and depth of data insights that can be derived.

Additionally, to foster organizational support, a data-driven culture within organizations should be promoted and commitment from leadership to support the adoption of big data analytics should be secured too. This is because many organizations lack a clear strategic vision for incorporating big data analytics into their brand campaigns. The implication is that without a strategic approach, efforts to adopt big data analytics are fragmented and less effective (Rosario & Dias, 2023). Hence, these remain valid concerns for many advertising professionals in Nigeria who see organizational resistance to adopting new technologies and data-driven approaches as prevalent. A resistance that stifles innovation and prevents the integration of big data analytics into campaign strategies (Ogechukwu, 2019).

A critical area of discourse on big data analytics in Nigeria is data privacy which is a concern in the adoption of big data analytics. With the increasing emphasis on data privacy and regulations globally, there appears to be a gap in awareness by brand communication campaign managers in Nigeria. This is because individuals have raised concerns about transparency in the use of personal data and if users' consent are obtained before use for advertising purposes. Moreover, digital expert sees these regulatory and privacy concerns as major challenges in the use of big data because the evolving legal framework around data privacy in Nigeria creates uncertainty and hesitation among advertising firms (Nwosu, 2019). Therefore, there is a need for a better understanding of ethical considerations, data protection laws, and the responsible use of consumer information to accelerate investment in big data analytics and not complicate compliance efforts (Gupta et al., 2021). Literature show that advertising experts believes in advocating for supportive policies and provision of financial incentives to encourage investment in big data analytics. Overall, it is important to ensure a balance between the benefits of big data in advertising and privacy risks because advertisers and consumers alike have a role to play in ensuring that advertising is ethical and respectful of the human right to privacy.

Conclusion:

As the Nigerian advertising landscape evolves, addressing the identified gaps in big data analytics knowledge such as limited skill sets, inadequate training, and education, organisational culture, and ethical and data privacy is crucial for staying competitive

in the global market. A concerted effort from industry players, educational institutions, and government bodies can pave the way for a more data-savvy and strategically empowered advertising sector in Nigeria by fostering industry-academia partnerships to promote research and education in big data analytics by establishing joint research projects, internships, fellowship, and knowledge-sharing platforms to bridge the gap between theoretical knowledge and practical application.

References

Ajilore, K. (2024). *Advertising practice as brand communication archery in the age of a rebellious audience.* Ogun, Nigeria: Babcock University Press.

Alawneh, A. A., & Alkhatib, S. (2020). The barrier to big data adoption in developing economies. *Researhgate, 87*(1). doi:10.1002/isd2.12151

Aljumah, A. I., Nuseir, M. T., & Alam, M. M. (2022). Traditional marketing analytics, big data analytics and big data system quality and the success of new product development. (1108-1125, Ed.) *Business Process Management Journal, 27*(4). doi:.10.1108/BPMJ-11-202

Almeida, F. (2023). Foresights for big data across industries. Foresight. *25*(3), 334-348. doi:https://doi.org/10.1108/FS-02-2021-0059

Andersson, U., Dasi, A., Mudambi, R., & Pedersen, T. (2016). Technology, innovation and knowledge: The importance of ideas and international connectivity. *Journal of World Business, 51*(1), 153-162. doi::https://doi.org/10.1016/j.jwb.2015.08.017

Banasiewicz, A. D. (2013). *Marketing database analytics: Transforming data for competitive advantage* (1 ed.). New York: Routledge.

Big, w. i. (2023, September 4). What is big data analytics | types of big data and tools . *Simplilearn*. https://www.simplilearn.com/what-is-big-data-analytics-article

Brewis, C., Sally, D., & Meadow, M. (2023). Leveraging big data for strategic marketing: A dynamic capabilities model for incumbent firms. *ResearchGate, 190*(1), 122402. doi:10.1016/j.techfore.2023.122402

Brown, P., & Souto-Otero , M. (2020). The end of the credential society? An analysis of the relationship between education and the labour market using big data. . *Journal of Education Policy, 35*(1), 95-118. doi:https://doi.org/10.1080/02680939.2018.1549752

Burgess, G. L., & Worthington, A. K. (2021). Technology acceptance model. In A. K. Worthington, Persuation theory in action: An open educational resource. *Pressbooks*.

Cavlak, N., & Cop, R. (2021). The role of big data in digital marketing. *ResearchGate*, 33. doi:10.4018/978-1-7998-8003-5.ch002

Chai, W., Labbe, M., & Stedman, C. (2021). Big data analytics. *TechTarget*. https://www.techtarget.com/searchbusinessanalytics/definition/big-data-analytics

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management Science, 35*(8), 982-1003. doi:http://dx.doi.org/10.1287/mnsc.35.8.982

Duggal, N. (2023). Top 7 benefits of Big data and analytics and reasons to consider It. *SimpliLearn*. Retrieved from https://www.simplilearn.com/benefits-of-big-data-and-analytics-article

Ekambaram, A., Sorensen, A. O., Bull-Berg, H., & Olsson, N. O. (2018). The role of big data and knowledge management in improving projects and project-based organizations. *Procedia Computer Science, 138*, 851-858. doi:http://dx.doi.org/10.1016/j.procs.2018

Eser, A. (2023). Essential advertising statistics In 2024. *Zipdo*. Retrieved from https://zipdo.co/statistics/advertising/

Farzan, S. (2023). Ethics first: The imperative Of responsible AI adoption In marketing. *Forbes*. Retrieved from https://www.forbes.com/sites/sunshinefarzan/2023/09/29/

Garduno, C. (2022, March 15). How Big Data Is Helping Advertisers Solve Problems. *Forbes*. https://www.forbes.com/sites/forbesagencycouncil/2022/03/15

Gentsch, P. (2019). *AI in marketing, sales and service.* Switzerland: Palgrave Macmillan Cham. doi:10.1007/978-3-319

Ginting, Y. M. (2020). Intellectual capital investigation in achieving sustainable competitive advantages in the creative industry: Does the mediation of knowledge management system affect? *Journal of Management Information and Decision Sciences, 23*(2), 5.

Gupta, A., & Kumar, V. (2020). Data-driven services marketing: Research synthesis, research practice, and the role of big data analytics. *Journal of Business Research*(119), 517-526.

Gupta, S., Justy, T., Kamboj, S., Kumar, A., & Kristoffersen, E. (2021). Big data and firm marketing performance: Findings from knowledge-based view. *Technology forecasting and social change, 171*. doi:https://10.org/10.1016/j.techfore.2021.120986

Gwani, M. (2023). Big data analytics and its role in decision-making in Nigeria. *Web Manager*. https://webmanager.ng/blog/big-data-analytics-its-role-in-decision-making/

Hamed, A. A., Dandan, S. A., Farah, A. A., & Barakat, S. A. (2024). the effect of oragnisation factors on adopting big data analytics in supply chain operation among companies in Saudi Arabia:The moderating role of resistance to change. *ResearchGate*. doi:10.4102/jtscm.v18i0.1036

Hair, J. F., Hult, G. T., Ringle, C. M., & Sarstedt, M. (2019). *A primer on partial least squares structural equation modeling (PLS-SEM)* (2nd ed.). Sage Publications.

Hasan, R. (2021). Investigating the Impact of big data analytics on supply chain operation: Case studies from the UK private sector. *Brunel University London*, 202. https://bura.brunel.ac.uk/bitstream/2438/23553/1/FulltextThesis.pdf

Howe, E. G., & Elenberg, F. (2020). Ethical challenges posed by big data. *Innovations in Clinical Neuroscience, 10-12*(24–30.). Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7819582/

Idoko, N. (2023). Digital advertising in Nigeria: A manager's perspective. *Professional.ng*. Retrieved from https://professions.ng/digital-advertising-in-nigeria/

Kenza, B., soumaya, O., & Mohamed, A. (2013). A conceptual framework using big data analytics for effective email marketing. *Sciencedirect, 220*, 1044-1050. doi:10.1016/j.procs.2023.03.146

Krasniqi, A., Maksutaj, B., & Januzaj, E. (2024). Using big data for optimising advertising campaigns in social media. *South Africa Journal of Development, 5*(3). doi:https://doi.org/10.46932/sfjdv5n3-015

Lansley, G., & Longley, P. (2016). Deriving age and gender from forenames for consumer analytics. *Journal of Retailing and Consumer Services, 30*, 271-278,7. doi:10.1016/j.jretconser.2016.02.00

Mehta, A. (2017). How big data analytics is transforming advertising. *AnalyticsInsight*. Retrieved from https://www.analyticsinsight.net/how-big-data-is-transforming-online-advertising/

Nwosu, A. (2019). Data Privacy and Regulatory Challenges in Big Data Analytics for Nigerian Advertising. *African Journal of Legal Studies, 14*(2), 78-83.

Obi, D. (2022). Advertising practitioners tasked to find industry real size. *BusinessDay*. Retrieved from https://businessday.ng/brands-advertising/article

Ogechukwu, D. A. (2019). Current trends in advertising education and professional practice (The Nigerian angle) problems and prospect. *Journal of Advertising and public relations, 2*(1).

Pathak, R. (2021). What is big data analytics? Definition, advantages, and types. . *Analyticssteps*. https://www.analyticssteps.com

Pournarakis, D. E., Sotiropoulos, D. N., & Giagli, G. (2017). A computational model for mining consumer perceptions in social media. Decision Support Systems. *Researchgate, 93*, 98-110. doi:http://dx.doi.org/10.1016/j.dss.2016.09.018

Priyadharshini. (2022). What is big data analytics and why it is important? . *Simplilearn*. https://www.simplilearn.com/tutorials/big-data

Rosario, A. T., & Dias, J. C. (2023). How has data-driven marketing evolved: Challenges and opportunities with emerging technologies. *International Journal of Information Management Data Insight, 3*(2). doi:https://doi.org/10.1016/j.jjimei.2023.100203

Roth, H. (2021). Big Data – its meaning in marketing & branding. *Neuroflash*. Retrieved from https://neuroflash.com/blog/big-data-meaning-in-marketing-branding/

Shabbir, M. Q., & Gardezi, S. B. (2020). Application of big data analytics and organizational performance: The mediating role of knowledge management practices. *Journal of Big Data*. doi:https://doi.org/10.1186/s40537-020-00317-6

Shkuropat, L. (2020). Big data in advertising: How adtech is changing. *Mindk*. Retrieved from https://www.mindk.com/blog/big-data-in-advertising/

Singh, A., & Hess, T. (2017). How chief digital officers promote the digital transformation of their companies. *MIS Quarterly Executive, 16*(1). Retrieved from https://aisel.aisnet.org/misqe/vol16/iss1/5

Sivarajah, U. K. (2017). Critical analysis of Big Data challenges and analytical methods. . *Journal of Business Research, 70*, 263-286. doi:https://doi.org/10.1016/j.jbusres.2016.08.001

Sule (2022). Big data and big data analytics: Literature-based research on usage, privacy and security a decade tour. Researchgate. https://www.researchgate.net/publication/360016669

Tariq, B., Taimoor, S., Najam, H., Law, R., Hassan, W., & Heesup , H. (2020). Generating marketing outcomes through internet of things technology. *Sustainability, 12*(22). doi:https://doi.org/10.3390/su12229670

What is big data analytics | types of big data and tools. (2023, September 4). *Simplilearn*. https://www.simplilearn.com/what-is-big-data-analytics-article

Van den Poel, D., & Buckinx, W. (2018). Adopting big data analytics for improved customer targeting and personalized messaging: A literature review. *Journal of Data Mining and Digital Humanities, 1*, 57-81.

Vasilopoulou, C., Theodorakopoulos, L., & Giotopoulos, I. (2023). Big data and consumer behavior: The power and pitfalls of analytics in the digital age. *Technium Social Science Journal, 45*, 469-480. doi:http://dx.doi.org/10.47577/tssj.v45i1.9135

Vilares, M., & Saiz, Á. (2019). Big data analytics and marketing innovation. *Journal of Business Research, 98*, 468-479.