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## A review of strategic decision-making in marketing through big data and analytics

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### ABSTRACT

This review paper delves into the transformative impact of big data and analytics on strategic marketing decision-making. Examining the integration of vast datasets and analytical tools in marketing strategies highlights how these technological advancements enable a deeper understanding of customer behavior, enhance product development, and provide a competitive edge. The review underscores the importance of data-driven insights in formulating personalized marketing strategies and the critical role of analytics in predictive and prescriptive decision-making. It addresses the challenges and ethical considerations associated with big data usage, emphasizing the need for robust data governance and ethical practices. The paper suggests future research directions, focusing on emerging technologies and methodologies that could further influence strategic marketing decisions.

**Keywords:** Big Data, Analytics, Strategic Marketing, Data-Driven Decision-Making, Ethical Considerations, Emerging Technologies.

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## INTRODUCTION

In the digital transformation era, the intersection of big data and analytics with marketing strategies represents a pivotal shift in how businesses engage with their markets and make strategic decisions (Bharadwaj, El Sawy, Pavlou, & Venkatraman, 2013; Kitchens, Dobolyi, Li, & Abbasi, 2018; Perera & Iqbal, 2021). This paper aims to dissect and analyze the multifaceted role of big data and analytics in revolutionizing strategic decision-making within the marketing domain. By delving into the intricate dynamics between vast data sets and analytical methodologies, this review seeks to illuminate the profound impact these elements have on shaping marketing strategies that are both effective and forward-thinking (Adeniyi, et. al., 2024, Chisom, Unachukwu & Osawaru, 2023, Igbinenikaro & Adewusi, 2024).

The primary objective of this review is to explore the transformative influence of big data and analytics on strategic decision-making in marketing (Ochuba, Adewumi & Olutimehin, 2024, Raji, et. al., 2024). With an exponential increase in data generation and the advanced analytics capabilities, businesses are now equipped to decipher complex consumer behaviors, predict market trends, and tailor their marketing strategies with unprecedented precision (Adegbite, et. al., 2024, Chisom, et. al., 2024, Raji, et. al., 2024). This paper endeavors to unpack the ways in which big data and analytics serve as catalysts for innovation and efficiency in strategic marketing decisions, fostering a competitive edge and driving business growth.

This review focuses on the strategic decision-making processes within marketing, particularly how big data and analytics influence these processes. It encompasses a broad spectrum of considerations, from data collection and analysis to the application of insights derived for strategic planning and execution. This paper highlights the strategic level at which big data and analytics exert their influence. The review aims to comprehensively understand how data-driven insights can guide and inform marketing strategies, policy formulation, and resource allocation by concentrating on the strategic implications.

The significance of integrating big data and analytics into strategic marketing decisions cannot be overstated (Ochuba, et. al., 2024, Odulaja, et. al., 2023, Raji, et. al., 2024). In a highly competitive and rapidly evolving marketplace, the ability to leverage data-driven insights for strategic decision-making is a critical determinant of business success (Medeiros & Maçada, 2022; Sleep, Hulland, & Gooner, 2019; Sultana, Akter, & Kyriazis, 2022). This integration facilitates a more nuanced understanding of customer preferences, market conditions, and the effectiveness of marketing campaigns, enabling businesses to adapt dynamically and maintain relevance. Furthermore, the predictive power of analytics helps in anticipating market trends and customer needs, allowing for proactive strategy adjustments (Adeniyi, et. al., 2024, Chisom, Unachukwu & Osawaru, 2024, Igbinenikaro & Adewusi, 2024). Ultimately, the integration of big data and analytics into strategic marketing decisions leads to enhanced customer satisfaction, increased market share, and improved return on investment, underscoring the pivotal role these technologies

play in shaping the future of business (Gupta, Justy, Kamboj, Kumar, & Kristoffersen, 2021; Kitchens et al., 2018, Ochuba, et. al., 2024).

In summary, this review seeks to provide an in-depth exploration of the nexus between big data, analytics, and strategic marketing decision-making. By highlighting the scope and significance of this integration, the paper aims to offer valuable insights into the ways in which businesses can harness the power of data and analytics to drive strategic innovation and achieve superior business outcomes (Eden, Chisom & Adeniyi, 2024, Igbinenikaro & Adewusi, 2024, Ogundipe, Odejide & Edunjobi, 2024).

### **Theoretical Framework**

The intersection of big data and analytics with marketing represents a critical evolution in the way businesses approach strategic decision-making (Raji, et. al., 2024). This section delves into the theoretical underpinnings of big data and analytics within the marketing domain, exploring their definitions, characteristics, roles, and the transformative impact they have on strategic decision-making models.

### **Big Data in Marketing**

Big data refers to the vast volumes of data generated from various sources, including social media, transaction records, web logs, sensors, and more (Bajaj & Ramteke, 2014; Bhadani & Jothimani, 2016, Igbinenikaro & Adewusi, 2024). Characterized by its volume, velocity, variety, veracity, and value, big data presents both opportunities and challenges. In marketing, it offers a comprehensive view of the market landscape, consumer behaviors, and competitive dynamics (Okoye et al., 2024; Oyewole, Okoye, Ofodile, & Ejairu, 2024; Syed, Gillela, & Venugopal, 2013).

The role of big data in marketing is pivotal. By leveraging big data, marketers can uncover deep insights into consumer preferences, behaviors, and trends (Raji, et. al., 2024). This enables the development of data-driven strategies that are highly targeted and personalized (Oyewole, Oguejiofor, Eneh, Akpuokwe, & Bakare, 2024; Raji et al., 2024; Schmarzo, 2013). Big data facilitates a granular understanding of the customer journey, from awareness to purchase, allowing marketers to optimize touchpoints for engagement and conversion (Adegbite, et. al., 2024, Adeniyi, et. al., 2024, Igbinenikaro & Adewusi, 2024). Moreover, it supports market segmentation, trend analysis, and the measurement of campaign effectiveness, all of which are crucial for crafting strategies that resonate with the target audience and deliver value (Arthur, 2013; Erevelles, Fukawa, & Swayne, 2016; Olatoye et al., 2024; Usman et al., 2024).

### **Analytics in Marketing Decision-Making**

Analytics play a pivotal role in modern marketing strategies, offering various approaches to extract valuable insights from data (Erevelles et al., 2016; Gandomi & Haider, 2015, Ochuba, et. al., 2024). Descriptive Analytics is the foundational layer, delving into past performance to discern patterns and understand historical behaviors (Chaudhary, Khurana, & Ayalasomayajula, 2024; Ibeh et al., 2024). By analyzing historical data, marketers gain valuable hindsight, enabling them to grasp the dynamics of consumer interactions and market trends (Adegoke, Ofodile & Ochuba, 2024, Eden, Chisom & Adeniyi, 2024, Ochuba, et. al., 2024). This retrospective analysis equips them with the knowledge to learn from past successes and failures, informing their future decisions. Essentially, descriptive analytics answers the questions of 'what happened?' and 'why

did it happen?', laying the groundwork for informed decision-making and strategy refinement (Davenport, Harris, & Morison, 2010; Taylor, 2011, Ochuba, et. al., 2024, Ogundipe, Babatunde & Abaku, 2024).

Moving beyond retrospective analysis, Predictive Analytics offers a forward-looking perspective, utilizing statistical models and forecasts to anticipate future trends and consumer behaviors (Adewusi, Asuzu, et al., 2024; Maisel & Cokins, 2013; NIȚU, 2016; Okoli, Obi, Adewusi, & Abrahams, 2024). This proactive approach empowers marketers to forecast market demands, foresee shifts in consumer preferences, and predict potential outcomes. By leveraging predictive analytics, marketers can fine-tune their strategies, allocate resources effectively, and tailor campaigns to meet evolving consumer needs (Adegoke, et. al., 2024, Chisom, Unachukwu & Osawaru, 2023, Ochuba, et. al., 2024, Raji, et. al., 2024). This predictive foresight is a strategic advantage, enabling businesses to stay ahead of the curve and adapt to changing market dynamics. However, the pinnacle of analytics lies in Prescriptive Analytics, which predicts future outcomes and prescribes actionable recommendations to achieve desired results (Delen, 2019; Lepenioti, Bousdekis, Apostolou, & Mentzas, 2020). By employing advanced algorithms and machine learning techniques, prescriptive analytics guides strategic decision-making, offering insights into the most effective courses of action to maximize marketing effectiveness and drive desired outcomes (Ebirim et al., 2024; Ihemereze et al., 2023, Ochuba, et. al., 2024).

Analytics transform marketing decision-making by enabling evidence-based strategies. Descriptive analytics help refine target segments and understand past campaigns' efficacy ( Adeniyi, et. al., 2024, Palmatier & Sridhar, 2020, Ochuba, et. al., 2024). Predictive analytics inform content personalization, timing, and channel selection to optimize future campaigns. Prescriptive analytics, meanwhile, guide strategic choices, such as budget allocation, channel optimization, and offer creation, ensuring that marketing efforts are both efficient and impactful (Adewusi, Okoli, et al., 2024; Chaffey & Smith, 2022; Okoli et al., 2024; Oladeinde, Hassan, Farayola, Akindote, & Adegbite, 2023).

### **Strategic Decision-Making Models**

Traditional models of strategic decision-making in marketing often emphasize market research, competitor analysis, and the strategic planning process. These models typically follow a structured approach, including situation analysis, strategy formulation, implementation, and evaluation (Ogundipe, Odejide & Edunjobi, 2024, Onyebuchi, et. al., 2024, Raji, et. al., 2024).

Big data and analytics are redefining these traditional models. The infusion of data-driven insights into the decision-making process enhances the accuracy of market analyses and the effectiveness of strategic plans (Hautakangas, 2022; Mikalef, Boura, Lekakos, & Krogstie, 2020, Ochuba, et. al., 2024). Big data enables a more dynamic and responsive approach to strategy formulation, allowing businesses to adapt quickly to market changes. Analytics, particularly prescriptive analytics, transforms strategy implementation by providing actionable recommendations tailored to achieve specific objectives. This optimizes marketing efforts and ensures strategies align with overarching business goals (Lepenioti et al., 2020; Soltanpoor & Sellis, 2016, Onyebuchi, 2019).

In conclusion, the theoretical framework presented underscores the profound impact of big data and analytics on marketing (Adegoke, et. al., 2024, Chisom, Unachukwu & Osawaru, 2024,

Ogundipe, & Abaku, 2024). This section highlights the shift towards data-driven marketing strategies by defining the characteristics and roles of big data and analytics and examining their influence on strategic decision-making models. As businesses continue to navigate the complexities of the digital marketplace, the integration of big data and analytics into marketing decision-making emerges as a critical factor in achieving strategic agility and competitive advantage (Adeniyi, et. al., 2024, Chisom, Unachukwu & Osawaru, 2023, Ochuba, et. al., 2024).

### **Impact of Big Data and Analytics on Strategic Marketing Decisions**

The integration of big data and analytics into marketing strategies has revolutionized the approach businesses take towards engaging with their customers and navigating the competitive landscape (Adelekea & Onyebuchib, 2023, Eden, Chisom & Adeniyi, 2024, Ogundipe, Odejide & Edunjobi, 2024). This section comprehensively examines the multifaceted impact of data-driven insights on strategic marketing decisions, emphasizing customer behavior and segmentation, product development and innovation, and the creation of competitive advantage.

#### **Data-Driven Insights**

The advent of big data and analytics has ushered in an era where data-derived insights increasingly drive marketing decisions (Henke & Jacques Bughin, 2016; Umair, 2023, Onyebuchi, et. al., 2023). These insights allow marketers to identify patterns, preferences, and behaviors across vast consumer datasets, transforming how strategies are formulated. Data-driven decision-making empowers marketing teams to move beyond intuition, relying instead on evidence-based strategies that are more likely to resonate with the target audience (Adeoti, Olawale & Raji, 2018, Babatunde, et. al., 2024, Raji, Brimah & Mustapha, 2020). For instance, analytics can reveal the optimal timing and channels for campaign launches, significantly enhancing engagement rates. Additionally, data-driven insights help in allocating resources more efficiently, ensuring that marketing budgets are invested in strategies that yield the highest return on investment (Chaffey & Smith, 2022; Hughes, Swaminathan, & Brooks, 2019, Ogundipe, & Abaku, 2024).

#### **Customer Behavior and Segmentation**

Understanding customer behavior and effectively segmenting the market are crucial for crafting personalized marketing messages. Big data offers unparalleled insight into customer behaviors, preferences, and interactions (Akintayo, et. al., 2024, Familoni, 2024, Matz & Netzer, 2017). Marketers can identify distinct customer segments by analyzing transaction histories, social media activity, and other digital footprints and tailor their strategies to meet each group's unique needs and preferences (Onyebuchi, et. al., 2024, Raji, et. al., 2024). This granular approach to segmentation enables the delivery of highly personalized and relevant marketing messages, improving customer engagement and loyalty (Ayeni, et. al., 2024, Chisom, et. al., 2024, Ogundipe, 2024). Furthermore, big data analytics facilitates the prediction of future customer behaviors, allowing businesses to anticipate needs and preferences, thus staying a step ahead in meeting customer expectations (Demirkan & Delen, 2013; Minelli, Chambers, & Dhiraj, 2013; Zhan, Tan, Li, & Tse, 2018).

#### **Product Development and Innovation**

Analytics play a critical role in product development and innovation, driving the creation of offerings that are closely aligned with market needs and consumer expectations (Akpuokwe,



Chikwe & Eneh, 2024, Mariani & Wamba, 2020, Okafor, et. al., 2024). Through the analysis of customer feedback, purchase patterns, and market trends, businesses can identify gaps in their product offerings and uncover opportunities for innovation. This data-driven approach to product development ensures that new products are designed with the customer in mind, significantly increasing the likelihood of market success (Al Hamad, et. al., 2024, Daraojimba, et. al., 2023, Onukogu, et. al., 2023). Moreover, analytics can optimize product development, identify potential efficiencies, and streamline operations to reduce time-to-market (Chisom, Unachukwu & Osawaru, 2024, Grütznér, Schnider, Zollinger, Seyfang, & Künzle, 2016). As a result, businesses can maintain a steady pipeline of innovative products, catering to evolving consumer demands and preferences (Raji, et. al., 2024).

The strategic application of big data and analytics can be a source of significant competitive advantage. In a landscape where markets are increasingly saturated, and consumer attention is fragmented, the ability to leverage data-driven insights can set a business apart (Ayeni, et. al., 2024, Eden, Familoni & Babatunde, 2024, Chisom & Adeniyi, 2024). Big data and analytics enable businesses to understand market dynamics in real-time, adapt to changes swiftly, and personalize customer experiences at scale. These capabilities enhance customer satisfaction and loyalty and improve operational efficiency and effectiveness. Businesses that excel in harnessing the power of data and analytics are better positioned to identify and capitalize on emerging market opportunities, outmaneuver competitors, and achieve sustainable growth (Khan, 2023; Umair, 2023; Umoga, Sodiya, Amoo, & Atadoga, 2024).

### **Challenges and Ethical Considerations**

While transformative, integrating big data and analytics into strategic marketing decisions is not without its challenges and ethical considerations. As businesses navigate the complexities of leveraging vast amounts of data, concerns surrounding data privacy, security, and ethical usage come to the forefront (Ayeni, et. al., 2024, Eden, Chisom & Adeniyi, 2024, Oke & Ramachandran, 2022). This section addresses these critical issues and provides insights into overcoming the inherent challenges.

#### **Data Privacy and Security**

The collection and use of big data raise significant privacy and security concerns. With vast amounts of personal information being processed and analyzed, the risk of data breaches and unauthorized access to sensitive information becomes a paramount concern for both businesses and consumers (Familoni & Onyebuchi, 2024, Oke, et. al., 2024, Saheed, Baba & Raji, 2022). Additionally, the varying and sometimes conflicting data protection regulations across different jurisdictions complicate compliance efforts for organizations operating globally.

To mitigate these risks, businesses must invest in robust cybersecurity measures and data protection protocols. This includes encryption, access controls, and regular security audits to ensure data integrity and confidentiality (Al Hamad, et. al., 2024, Eden, Chisom & Adeniyi, 2024). Furthermore, adhering to regulatory requirements and industry best practices for data protection is essential. Implementing comprehensive data governance frameworks can help organizations manage data more responsibly, ensuring compliance and safeguarding against breaches.

### **Ethical Implications**

The ethical use of big data and analytics in marketing goes beyond mere compliance with legal standards. It encompasses issues of consumer consent, transparency, and the potential for bias in data analysis (Ayeni, et. al., 2024, Babatunde, et. al., 2024, Oke & Ramachandran, 2022). It is fundamental to ensure that consumers are aware of and consent to collecting and using their data. Moreover, the transparency in how data is used to make marketing decisions is crucial in building and maintaining trust with consumers (Helveston, 2015; Mittelstadt & Floridi, 2016; Oyewole, Oguejiofor, et al., 2024).

Businesses can address these ethical concerns by adopting transparent data collection and usage policies. Clear communication with consumers about how their data will be used, including the benefits and risks, helps in obtaining informed consent (Saheed, et. al., 2023, Saheed, Ayobami & Orje-Ishegh, 2022). Additionally, implementing measures to detect and mitigate bias in data analysis can prevent unethical marketing practices and promote fairness and inclusivity.

### **Overcoming Barriers**

Integrating big data and analytics into strategic marketing decisions involves navigating technical, organizational, and cultural barriers. To overcome these challenges, businesses must foster a culture of data literacy and continuous learning. Investing in training and development programs can equip teams with the necessary skills to leverage data and analytics effectively (Al Hamad, et. al., 2024, Eden, Chisom & Adeniyi, 2024). Technologically, selecting the right tools and platforms that align with the organization's needs and capabilities is crucial. Scalable and secure data analytics platforms can facilitate the efficient processing and analysis of large data sets while ensuring data privacy and security (Olodo, et. al., 2020, Onukogu, et. al., 2023, Saheed & Raji, 2022). Organizationally, promoting cross-functional collaboration and breaking down silos between departments can enhance the integration of big data and analytics into strategic decision-making (Du Plessis, 2007, Familoni & Onyebuchi, 2024, Ibeh et al., 2024). Encouraging open communication and knowledge sharing across teams ensures that insights derived from data are effectively applied to inform marketing strategies.

### **CONCLUSION AND FUTURE DIRECTIONS**

The exploration of big data and analytics within the context of strategic marketing decision-making has unveiled the profound impact these technological advancements have on the marketing domain (Egieya, et. al., 2023, Oke, 2022, Udo, et. al., 2024). This comprehensive review has highlighted the transformative power of leveraging vast data sets and sophisticated analytical tools to drive strategic initiatives. As we conclude, it is essential to recapitulate the key findings, discuss the practical implications for marketers and organizations, and suggest avenues for future research. The integration of big data and analytics into marketing strategies fundamentally alters how businesses approach market analysis, customer engagement, and innovation. Data-driven insights enable a deeper understanding of customer behavior and preferences, facilitating highly personalized marketing strategies (Al Hamad, et. al., 2024, Ewim, 2023). Furthermore, analytics play a crucial role in product development, allowing organizations to align their offerings more closely with consumer needs. The adoption of big data and analytics not only enhances operational

efficiency but also provides a significant competitive advantage by enabling real-time strategic decisions and predictive capabilities.

For marketers and organizations, the practical implications of these findings are manifold. Firstly, there is a clear need for investment in data management and analytical capabilities to harness the full potential of big data (Olagumju, et. al., 2023, Shoetan & Familoni, 2024, Udo, et. al., 2024). This includes both technological infrastructure and skilled personnel. Additionally, organizations must prioritize data privacy and ethical considerations, ensuring that consumer data is collected, stored, and used responsibly. Embracing a data-driven culture that encourages experimentation, innovation, and continuous learning is critical for effectively leveraging big data and analytics. Marketers can optimize their current strategies, anticipate future trends, and adapt swiftly to changing market dynamics.

Looking ahead, several areas of future research emerge as particularly promising. One key area is the development of more sophisticated analytical models and algorithms that can handle the increasing complexity and volume of data (Familoni & Shoetan, 2024, Udo, et. al., 2024). This includes the exploration of artificial intelligence and machine learning techniques tailored for marketing analytics. Another important direction is the study of ethical frameworks and regulatory standards for big data usage in marketing, focusing on consumer privacy, data security, and the prevention of bias (Ewim, et. al., 2023, Shoetan & Familoni, 2024, Udeh, et. al., 2023). Additionally, research into the integration of emerging technologies, such as blockchain for data security and Internet of Things (IoT) for real-time data collection, could further revolutionize strategic marketing decision-making. Finally, there is a need for longitudinal studies that examine the long-term impacts of big data and analytics on marketing strategies and business performance (Al Hamad, et. al., 2024, Familoni & Onyebuchi, 2024, Oke & Ramachandran, 2021). Such research could provide deeper insights into how organizations can sustainably leverage these technologies for continuous improvement and innovation.

In conclusion, the advent of big data and analytics represents a watershed moment for marketing, offering unparalleled opportunities for insight, innovation, and strategic advantage. As businesses navigate this evolving landscape, the insights derived from this review can serve as a foundation for informed decision-making and strategic planning. The continuous evolution of technology and methodologies will undoubtedly offer new challenges and opportunities, driving the future of strategic marketing decision-making in the digital age.

## References

- Adebite, A. O., Biu, P. W., Onyebuchi N. C., Umoh, A. A., & Obaedo, B. O. (2024). The evolution of drones in U.S commercial logistics: a comprehensive review investigating the benefits, regulatory challenges and future prospects of unmanned aerial delivery
- Adebite, A.O., Biu, P. W., Onyebuchi N. C., Umoh, A.A., & Obaedo, B.O. (2024). The Impact of Geospatial Data Visualization on Business Decision-Making: A cross-Country Comparison between the USA and the UK. *Malaysian Applied Geography (MAGG)* <http://doi.org/10.26480/magg.01.2024.11.17>



- Adegoke, T. I., Ofodile, O. C., & Ochuba, N. A. (2024). Transparent reporting and equity in mortgage lending: A comprehensive review.
- Adegoke, T. I., Ofodile, O. C., Ochuba, N. A., & Akinrinol, O. (2024). Evaluating the fairness of credit scoring models: A literature review on mortgage accessibility for under-reserved populations. *GSC Advanced Research and Reviews*, 18(3), 189-199.
- Adegoke, T. I., Ofodile, O. C., Ochuba, N. A., & Akinrinola, O. (2024). Data analytics in finance and mortgage: A catalyst for addressing inequities faced by under-reserved populations in the USA. *International Journal of Science and Research Archive*, 11(2), 338-347
- Adelekea, I. J., & Onyebuchib, C. N. (2023). Challenges teachers experience in teaching english second language in secondary schools in the Northwest Province.
- Adeniyi, I. S., Al Hamad, N. M., Adewusi, O. E., Unachukwu, C. C., Osawaru, B., Onyebuchi, C. N., ... & David, I. O. (2024). E-learning platforms in higher education: A comparative review of the USA and Africa. *International Journal of Science and Research Archive*, 11(1), 1686-1697.
- Adeniyi, I. S., Al Hamad, N. M., Adewusi, O. E., Unachukwu, C. C., Osawaru, B., Onyebuchi, C. N., ... & David, I. O. (2024). Gender equality in the workplace: A comparative review of USA and African Practices. *World Journal of Advanced Research and Reviews*, 21(2), 763-772.
- Adeniyi, I. S., Al Hamad, N. M., Adewusi, O. E., Unachukwu, C. C., Osawaru, B., Onyebuchi, C. N., ... & David, I. O. (2024). Educational reforms and their impact on student performance: A review in African Countries. *World Journal of Advanced Research and Reviews*, 21(2), 750-762.
- Adeniyi, I. S., Al Hamad, N. M., Adewusi, O. E., Unachukwu, C. C., Osawaru, B., Onyebuchi, C. N., ... & David, I. O. (2024). Organizational culture and leadership development: A human resources review of trends and best practices.
- Adeniyi, I. S., Al Hamad, N. M., Adewusi, O. E., Unachukwu, C. C., Osawaru, B., Chilson, O. U., ... & David, I. O. (2024). Reviewing online learning effectiveness during the COVID-19 pandemic: A global perspective. *International Journal of Science and Research Archive*, 11(1), 1676-1685
- Adeoti, J. O., Olawale, A. Y., & Raji, A. M. (2018). The impact of celebrity endorsement on the brand image of mtn telecommunications limited: the perspective of subscribers in Ilorin Metropolis.
- Akintayo, O. T., Eden, C. A., Ayeni, O. O., & Onyebuchi, N. C. (2024). A review of advanced educational methods and their impact on US competitiveness in the global market. *International Journal of Applied Research in Social Sciences*, 6(4), 721-733.
- Akpuokwe, C. U., Chikwe, C. F., & Eneh, N. E. (2024). Leveraging technology and financial literacy for women's empowerment in SMEs: A conceptual framework for sustainable development. *Global Journal of Engineering and Technology Advances*, 18(03), 020-032.
- Al Hamad, N. M., Adewusi, O. E., Unachukwu, C. C., Osawaru, B., & Chisom, O. N. (2024). A review on the innovative approaches to STEM education. *International Journal of Science and Research Archive*, 11(1), 244-252.

- Al Hamad, N. M., Adewusi, O. E., Unachukwu, C. C., Osawaru, B., & Chisom, O. N. (2024). Bridging the gap: Using robotics to enhance emotional and social learning in K-12 education.
- Al Hamad, N. M., Adewusi, O. E., Unachukwu, C. C., Osawaru, B., & Chisom, O. N. (2024). The role of counseling in developing future STEM leaders.
- Al Hamad, N. M., Adewusi, O. E., Unachukwu, C. C., Osawaru, B., & Chisom, O. N. (2024). Integrating human resources principles in STEM education: A review.
- Al Hamad, N. M., Adewusi, O. E., Unachukwu, C. C., Osawaru, B., & Chisom, O. N. (2024). Counselling as a tool for overcoming barriers in stem education among underrepresented groups. *Engineering Science & Technology Journal*, 5(1), 65-82.
- Anayat, S., Rasool, G., & Pathania, A. (2023). Examining the context-specific reasons and adoption of artificial intelligence-based voice assistants: A behavioural reasoning theory approach. *International Journal of Consumer Studies*, 47(5), 1885-1910. doi.org/10.1111/ijcs.12963
- Arifin, A. A., & Lennerfors, T. T. (2021). Ethical aspects of voice assistants: a critical discourse analysis of Indonesian media texts. *Journal of Information, Communication and Ethics in Society*, 20(1), 18-36. DOI: 10.1108/JICES-12-2020-0118.
- Asmare, A., & Zewdie, S. (2022). Omnichannel retailing strategy: a systematic review. *The International Review of Retail, Distribution and Consumer Research*, 32(1), 59-79. DOI: 10.1080/09593969.2021.2024447
- Ayeni, O. O., Al Hamad, N. M., Chisom, O. N., Osawaru, B., & Adewusi, O. E. (2024). AI in education: A review of personalized learning and educational technology. *GSC Advanced Research and Reviews*, 18(2), 261-271.
- Ayeni, O. O., Chisom, O. N., Al Hamad, N. M., Osawaru, B., & Adewusi, O. E. (2024). Enhancing STEM education through emotional intelligence and counseling techniques.
- Ayeni, O. O., Unachukwu, C. C., Al Hamad, N. M., Chisom, O. N., & Adewusi, O. E. (2024). The impact of robotics clubs on K-12 students' interest in STEM careers. *Magna Scientia Advanced Research and Reviews*, 10(1), 361-367.
- Ayeni, O. O., Unachukwu, C. C., Osawaru, B., Chisom, O. N., & Adewusi, O. E. (2024). Innovations in STEM education for students with disabilities: A critical examination. *International Journal of Science and Research Archive*, 11(1), 1797-1809.
- Babatunde, S. O., Odejide, O. A., Edunjobi T. E., & Ogundipe, D. O. (March 2024). The role of AI in marketing personalization: a theoretical exploration of consumer engagement strategies. *International Journal of Management & Entrepreneurship Research*, 6, 936-949.
- Chisom, O. N., Biu, P. W., Umoh, A. A., Obaedo, B. O., Adegbite, A. O., & Abatan, A. (2024). Reviewing the role of AI in environmental monitoring and conservation: A data-driven revolution for our planet. *World Journal of Advanced Research and Reviews*, 21(1), 161-171.
- Chisom, O. N., Unachukwu, C. C., & Osawaru, B. (2023). Review of AI in education: transforming learning environments in Africa. *International Journal of Applied Research in Social Sciences*, 5(10), 637-654.

- Chisom, O. N., Unachukwu, C. C., & Osawaru, B. (2023). STEM education advancements in Nigeria: a comprehensive review. *International Journal of Applied Research in Social Sciences*, 5(10), 614-636.
- Chisom, O. N., Unachukwu, C. C., & Osawaru, B. (2024). STEM education advancements in African contexts: A comprehensive review.
- Daraojimba, R. E., Farayola, O. A., Olatoye, F. O., Mhlongo, N., & Oke, T. T. (2023). Forensic accounting in the digital age: a US perspective: scrutinizing methods and challenges in digital financial fraud prevention. *Finance & Accounting Research Journal*, 5(11), 342-360
- Eden, C. A., Chisom, O. N., & Adeniyi, I. S. (2024). Cultural competence in education: strategies for fostering inclusivity and diversity awareness. *International Journal of Applied Research in Social Sciences*, 6(3), 383-392.
- Eden, C. A., Chisom, O. N., & Adeniyi, I. S. (2024). Education policy and social change: Examining the impact of reform initiatives on equity and access. *International Journal of Science and Research Archive*, 11(2), 139-146.
- Eden, C. A., Chisom, O. N., & Adeniyi, I. S. (2024). Harnessing technology integration in education: Strategies for enhancing learning outcomes and equity. *World Journal of Advanced Engineering Technology and Sciences*, 11(2), 001-008.
- Eden, C. A., Chisom, O. N., & Adeniyi, I. S. (2024). Online learning and community engagement: Strategies for promoting inclusivity and collaboration in education. *World Journal of Advanced Research and Reviews*, 21(3), 232-239.
- Eden, C. A., Chisom, O. N., & Adeniyi, I. S. (2024). Parent and community involvement in education: strengthening partnerships for social improvement. *International Journal of Applied Research in Social Sciences*, 6(3), 372-382.
- Eden, C. A., Chisom, O. N., & Adeniyi, I. S. (2024). Promoting digital literacy and social equity in education: lessons from successful initiatives. *International Journal of Management & Entrepreneurship Research*, 6(3), 687-696.
- Egieya, Z. E., Ewuga, S. K., Adegbite, A. O., & Oke, T. T. (2023). The Role Of Virtual And Augmented Reality in Modern Marketing: A Critical Review. *Computer Science & IT Research Journal*, 4(3), 244-272
- Ewim, D. R. E. (2023). Integrating Business principles in STEM Education: fostering entrepreneurship in students and educators in the US and Nigeria. *IJEBD (International Journal of Entrepreneurship and Business Development)*, 6(4), 590-605.
- Ewim, D. R. E., Orikpete, O. F., Scott, T. O., Onyebuchi, C. N., Onukogu, A. O., Uzougbo, C. G., & Onunka, C. (2023). Survey of wastewater issues due to oil spills and pollution in the Niger Delta area of Nigeria: a secondary data analysis. *Bulletin of the National Research Centre*, 47(1), 116
- Familoni, B. T. (2024). Cybersecurity challenges in the age of AI: theoretical approaches and practical solutions. *Computer Science & IT Research Journal*, 5(3), 703-724.
- Familoni, B. T., & Babatunde, S. O. (2024). User experience (UX) design in medical products: theoretical foundations and development best practices. *Engineering Science & Technology Journal*, 5(3), 1125-1148.

- Familoni, B. T., & Onyebuchi, N. C. (2024). Advancements and challenges in AI integration for technical literacy: a systematic review. *Engineering Science & Technology Journal*, 5(4), 1415-1430.
- Familoni, B. T., & Onyebuchi, N. C. (2024). Augmented and virtual reality in us education: a review: analyzing the impact, effectiveness, and future prospects of ar/vr tools in enhancing learning experiences. *International Journal of Applied Research in Social Sciences*, 6(4), 642-663.
- Familoni, B. T., & Shoetan, P. O. (2024). Cybersecurity in the financial sector: a comparative analysis of the USA and Nigeria. *Computer Science & IT Research Journal*, 5(4), 850-877
- Farah, M. F., Ramadan, Z. B., & Harb, D. H. (2019). The examination of virtual reality at the intersection of consumer experience, shopping journey and physical retailing. *Journal of Retailing and Consumer Services*, 48, 136-143.
- Flavián, C., Akdim, K., & Casaló, L. V. (2023). Effects of voice assistant recommendations on consumer behavior. *Psychology & Marketing*, 40(2), 328-346. [DOI: 10.1002/mar.21765]
- Gazzawe, F., Mayouf, M., Lock, R., & Alturki, R. (2022). The role of machine learning in e-learning using the web and ai-enabled mobile applications. *Mobile Information Systems*, 2022, Article ID 3696140, <https://doi.org/10.1155/2022/Ana3696140>
- Harmouche, R., Lochbihler, A., Thibault, F., De Luca, G., Proulx, C., & Hovdebo, J. L. (2020). A virtual assistant for cybersickness care. In 2020 IEEE 33rd International Symposium on Computer-Based Medical Systems (CBMS), pp. 384-387. DOI: 10.1109/CBMS49503.2020.00079
- Hernandez-Ortega, B., & Ferreira, I. (2021). How smart experiences build service loyalty: The importance of consumer love for smart voice assistants. *Psychology & Marketing*, 38(7), 1122-1139. Doi.org/10.1002/mar.21497
- Hofacker, C. F., Malthouse, E. C., & Sultan, F. (2016). Big data and consumer behavior: Imminent opportunities. *Journal of Consumer Marketing*, 33(2), 89-97. DOI: 10.1108/JCM-04-2015-1399
- Hsiao, W. H., & Chang, T. S. (2019). Exploring the opportunity of digital voice assistants in the logistics and transportation industry. *Journal of Enterprise Information Management*, 32(6), 1034-1050. <https://doi.org/10.1108/JEIM-12-2018-0271>
- Igbinikaro, E., & Adewusi, O. A. (2024). Developing International Policy Guidelines for Managing Cross-Border Insolvencies in the Digital Economy. *International Journal of Management & Entrepreneurship Research*. <https://doi.org/10.51594/ijmer.v6i4.983>
- Igbinikaro, E., & Adewusi, O. A. (2024). Financial law: policy frameworks for regulating fintech innovations: ensuring consumer protection while fostering innovation. *Finance & Accounting Research Journal*. <https://doi.org/10.51594/farj.v6i4.991>.
- Igbinikaro, E., & Adewusi, O. A. (2024). Navigating the legal complexities of artificial intelligence in global trade agreements. *International Journal of Applied Research in Social Sciences*. <https://doi.org/10.51594/ijarss.v6i4.987>.

- Igbinenikaro, E., & Adewusi, O. A. (2024). Policy recommendations for integrating artificial intelligence into global trade agreements. *International Journal of Engineering Research Updates*, 06(01), 001-010. <https://doi.org/10.53430/ijeru.2024.6.1.0022>.
- Igbinenikaro, E., & Adewusi, O. A. (2024). Tax havens reexamined: the impact of global digital tax reforms on international taxation. *World Journal of Advanced Science and Technology*, 05(02), 001- 012. <https://doi.org/10.53346/wjast.2024.5.2.0031>.
- Jones, V. K. (2018). Voice-activated change: Marketing in the age of artificial intelligence and virtual assistants. *Journal of Brand Strategy*, 7(3), 233-245.
- Kaul, D., Shah, M., Dhakephalkar, N. (2020). A study on the factors influencing behavioral intention of Indian consumers in adopting voice assistants. In: Sharma, S.K., Dwivedi, Y.K., Metri, B., Rana, N.P. (eds) Re-imagining Diffusion and Adoption of Information Technology and Systems: A Continuing Conversation. TDIT 2020. IFIP Advances in Information and Communication Technology, Vol. 617. Springer, Cham. [https://doi.org/10.1007/978-3-030-64849-7\\_42](https://doi.org/10.1007/978-3-030-64849-7_42)
- Madhura, K., & Niyaz, P. D. (2022). Customer Perception in Relationship between Social-Media and Purchasing Behavior of Fashion Products. Available at SSRN 4187212. DOI: 10.47992/ijcsbe.2581.6942.0185
- Mallat, N., Tuunainen, V., & Wittkowski, K. (2017). Voice Activated Personal Assistants – Consumer Use Contexts and Usage Behavior. *AMCIS 2017 Proceedings*, 32. <https://aisel.aisnet.org/amcis2017/TREOs/Presentations/32>
- Malodia, S., Islam, N., Kaur, P., & Dhir, A. (2021). Why do people use artificial intelligence (AI)-enabled voice assistants? *IEEE Transactions on Engineering Management*.
- Mari, A. (2020). Artificial Intelligence-based Voice Assistants as Social Media Platform: Anticipated Effect on Brands during Shopping. *Journal of Creative Industries and Cultural Studies: JOCIS*, (6), 56-71.
- Mari, A., & Algesheimer, R. (2021). The role of trusting beliefs in voice assistants during voice shopping. Hawaii International Conference on System Sciences (HICSS). DOI: 10.24251/HICSS.2021.495
- Mari, A., Mandelli, A., & Algesheimer, R. (2020). The evolution of marketing in the context of voice commerce: A managerial perspective. In HCI in Business, Government and Organizations: 7th International Conference, HCIBGO 2020, Held as Part of the 22nd HCI International Conference, HCII 2020, Copenhagen, Denmark, July 19–24, 2020, Proceedings 22, 405-425. Springer International Publishing. DOI: 10.1007/978-3-030-50341-3\_32
- Maroufkhani, P., Asadi, S., Ghobakhloo, M., Jannesari, M. T., & Ismail, W. K. W. (2022). How do interactive voice assistants build brands' loyalty? *Technological Forecasting and Social Change*, 183, 121870. DOI: 10.1016/j.techfore.2022.121870
- McLean, G., Osei-Frimpong, K., & Barhorst, J. (2021). Alexa, do voice assistants influence consumer brand engagement?—Examining the role of AI powered voice assistants in influencing consumer brand engagement. *Journal of Business Research*, 124, 312-328. DOI: 10.1016/j.jbusres.2020.11.045



- Mehta, R., Singh, H., Banerjee, A., Bozhuk, S., & Kozlova, N. (2020). Comparative analysis of the consequences of purchasing models transformation within the global digitalization of the economy. In IOP Conference Series: Materials Science and Engineering, 940(1), DOI: 10.1088/1757-899X/940/1/012071
- Moriuchi, E. (2019). Okay, Google!: An empirical study on voice assistants on consumer engagement and loyalty. *Psychology & Marketing*, 36(5), 489-501. DOI: 10.1002/MAR.21192
- Morotti, E., Donatiello, L., & Marfia, G. (2020). Fostering fashion retail experiences through virtual reality and voice assistants. 2020 IEEE Conference on Virtual Reality and 3D User Interfaces Abstracts and Workshops (VRW), Atlanta, GA, USA, 2020, pp. 338-342, DOI: 10.1109/VRW50115.2020.00074.
- Murugan, D., Mohan, G., Saravanan, H., & Ishwarya, M. V. (2022). Voice Assistant ZIA using HDG algorithm. *International Journal for Research in Applied Science and Engineering Technology*, 10(6), 1419-1424, DOI: 10.22214/ijraset.2022.43710
- Muthukumar, A., & Vani, H. (2020). Optimizing the usage of voice assistants for shopping. *Indian Journal of Science and Technology*, 13(43), 4407-4416. DOI: 10.17485/IJST/V13I43.1911
- Neilson, C., & Grigore, P. (2022). Machine learning and ai application behaviour prediction for user experience modelling and optimization.
- Nuseir, M. T. (2016). Exploring the use of online marketing strategies and digital media to improve the brand loyalty and customer retention. *International Journal of Business and Management*, 11(4), 228-238. DOI: 10.5539/IJBM.V11N4P228
- Ochuba, N. A., Adewumi, A., & Olutimehin, D. O. (2024). The role of AI in financial market development: enhancing efficiency and accessibility in emerging economies. *Finance & Accounting Research Journal*, 6(3), 421-436.
- Ochuba, N. A., Amoo, O. O., Akinrinola, O., Usman, F. O., & Okafor, E. S. (2024). Market expansion and competitive positioning in satellite telecommunications: a review of analytics-driven strategies within the global landscape. *International Journal of Management & Entrepreneurship Research*, 6(3), 567-581.
- Ochuba, N. A., Amoo, O. O., Okafor, E. S., Akinrinola, O., & Usman, F. O. (2024). Strategies for leveraging big data and analytics for business development: a comprehensive review across sectors. *Computer Science & IT Research Journal*, 5(3), 562-575.
- Ochuba, N. A., Amoo, O. O., Okafor, E. S., Usman, F. O., & Akinrinola, O. (2024). Conceptual development and financial analytics for strategic decision-making in telecommunications, focusing on assessing investment opportunities and managing risks in satellite projects. *International Journal of Management & Entrepreneurship Research*, 6(3), 594-607.
- Ochuba, N. A., Okafor, E. S., Akinrinola, O., Amoo, O. O., & Usman, F. O. (2024). Enhancing customer service in satellite telecommunications: a review of data-driven insights and methodologies for personalized service offerings. *International Journal of Management & Entrepreneurship Research*, 6(3), 582-593.

- Ochuba, N. A., Okafor, E. S., Akinrinola, O., Usman, F. O., & Amoo, O. O. (2024). Strategic partnerships in the satellite and telecommunications sectors: a conceptual review of data analytics-enabled identification and capitalization of synergies. *Engineering Science & Technology Journal*, 5(3), 716-727.
- Ochuba, N. A., Olutimehin, D. O., Odunaiya, O. G., & Soyomb, O. T. (2024). A comprehensive review of strategic management practices in satellite telecommunications, highlighting the role of data analytics in driving operational efficiency and competitive advantage. *World Journal of Advanced Engineering Technology and Sciences*, 11(2), 201-211.
- Ochuba, N. A., Olutimehin, D. O., Odunaiya, O. G., & Soyombo, O. T. (2024). Sustainable business models in satellite telecommunications. *Engineering Science & Technology Journal*, 5(3), 1047-1059.
- Ochuba, N. A., Olutimehin, D. O., Odunaiya, O. G., & Soyombo, O. T. (2024). The evolution of quality assurance and service improvement in satellite telecommunications through analytics: a review of initiatives and their impacts. *Engineering Science & Technology Journal*, 5(3), 1060-1071.
- Ochuba, N. A., Olutimehin, D. O., Odunaiya, O. G., & Soyombo, O. T. (2024). Reviewing the application of big data analytics in satellite network management to optimize performance and enhance reliability, with implications for future technology developments. *Magna Scientia Advanced Research and Reviews*, 10(2), 111-119.
- Ochuba, N. A., Usman, F. O., Amoo, O. O., Okafor, E. S., & Akinrinola, O. (2024). Innovations in business models through strategic analytics and management: conceptual exploration for sustainable growth. *International Journal of Management & Entrepreneurship Research*, 6(3), 554-566.
- Ochuba, N. A., Usman, F. O., Okafor, E. S., Akinrinola, O., & Amoo, O. O. (2024). Predictive analytics in the maintenance and reliability of satellite telecommunications infrastructure: a conceptual review of strategies and technological advancements. *Engineering Science & Technology Journal*, 5(3), 704-715
- Odulaja, B. A., Oke, T. T., Eleogu, T., Abdul, A. A., & Daraojimba, H. O. (2023). Resilience In the face of uncertainty: a review on the impact of supply chain volatility amid ongoing geopolitical disruptions. *International Journal of Applied Research in Social Sciences*, 5(10), 463-486
- Ogundipe, D. O., & Abaku, E. A. (2024). Theoretical insights into AI product launch strategies for start-ups: Navigating market challenges. *International Journal of Frontiers in Science and Technology Research*, 6(01), 062-072.
- Ogundipe, D. O., Odejide O. A., & Edunjobi, T. E. (2024). Agile methodologies in digital banking: Theoretical underpinnings and implications for customer satisfaction. *Open Access Research Journal of Engineering and Technology*, 2024, 10(02), 021-030 <https://doi.org/10.53022/oarjst.2024.10.2.0045>
- Ogundipe, D. O., Odejide, O. A., & Edunjobi, T. E. (2024). Agile methodologies in digital banking: Theoretical underpinnings and implications for custom satisfaction. *Open Access Research Journal of Science and Technology*, 10(02), 021-030.

- Ogundipe, D.O (2024). The impact of big data on healthcare product development: A theoretical and analytical review. *International Medical Science Research Journal*, 4. <https://doi.org/10.51594/imsrj.v4i3.932>
- Ogundipe, D.O., & Abaku, E.A. (2024). Theoretical insights into AI product launch strategies for start-ups: Navigating market challenges. *International Journal of Frontiers in Science and Technology Research*, 2024, 06(01), 062-072. <https://doi.org/10.53294/ijfstr.2024.6.1.0032>
- Ogundipe, D.O., Babatunde, S.O., & Abaku, E.A. (2024). AI and product management: A theoretical overview from idea to market. *International Journal of Management & Entrepreneurship Research*, 2024, 6(3), 950-969. <https://doi.org/10.51594/ijmer.v6i3.965>
- Ogundipe, D.O., Odejide, O.A., & Edunjobi, T.E (2024). Agile methodologies in digital banking: Theoretical underpinnings and implications for custom satisfaction. *Open Access Research Journal of Science and Technology*, 2024, 10(02), 021-030. <https://doi.org/10.53022/oarjst.2024.10.2.0045>
- Okafor, E. S., Akinrinola, O., Usman, F. O., Amoo, O. O., & Ochuba, N. A. (2024). Cybersecurity analytics in protecting satellite telecommunications networks: a conceptual development of current trends, challenges, and strategic responses. *International Journal of Applied Research in Social Sciences*, 6(3), 254-266
- Oke, T. T., Ramachandran, T., Afolayan, A. F., Ihemereze, K. C., & Udeh, C. A. (2024). The role of artificial intelligence in shaping sustainable consumer behavior: a cross-sectional study of Southwest, Nigeria. *International Journal of Research and Scientific Innovation*, 10(12), 255-266.
- Oke, T., & Ramachandran, T. (2021). Determinants of decision to use and continued use of online shopping medium: a bivariate probit approach.
- Oke, T., & Ramachandran, T. (2022). Effect of risk perception on online purchase behavior among Nigeria consumer: the moderating role of gender. *Specialusis Ugdymas*, 1(43), 5556-5570.
- Oke, T., & Ramachandran, T. (2022). Understanding attitudes of urban youths towards online shopping: evidence from Lagos and Ibadan Cities of Nigeria. *Specialusis Ugdymas*, 1(43), 5571-5583.
- Oke, T.T. (2022). Consumers' preference for online purchasing medium in the covid-19 pandemic era: empirical evidence from Ondo State, Nigeria
- Olagumju, C. G., Uzougbo, C. N., Onyebuchi, A. O., Onukogu, T. O., & Olusegun, A. (2023). Effect of Abattoir waste on the physico-chemical and faecal coliform load of surface and underground water bodies in Ughelli. *Delta State*.
- Olodo, H. B., Aremu, M. A., Raji, M. A., & Aminu, H. A. (2024). Teamwork and organisational performance: a study of Al-Hikmah University.
- Onukogu, O. A., Onyebuchi, C. N., Scott, T. O., Babawarun, T., Neye-Akogo, C., Olagunju, O. A., & Uzougbo, C. G. (2023). Impacts of industrial wastewater effluent on Ekerekana Creek and policy recommendations for mitigation. *The Journal of Engineering and Exact Sciences*, 9(4), 15890-01e.
- Onukogu, O. A., Onyebuchi, C. N., Scott, T. O., Babawarun, T., Neye-Akogo, C., Olagunju, O. A., & Uzougbo, C. G. (2023). Impacts of industrial wastewater effluent on Ekerekana Creek

- and policy recommendations for mitigation. *The Journal of Engineering and Exact Sciences*, 9(4), 15890-01e.
- Onyebuchi N. C. (2024). investigation on Strategies for Improving the teaching of Health Education in Junior Secondary Schools in Mushin Local Government Area of Lagos State
- Onyebuchi N.C. (2019). Influence of teachers' qualifications and teaching experiences on the chemistry students' performance in government senior secondary Schools in Bwari Area Council of the FCT
- Onyebuchi, C. N. Alade, E. Y., Ashiwaju, B. I., Gidiagba, J., Uzougbo, C. G., Adewumi, D. O. (2023). Influence of waste management on environmental health and development
- Onyebuchi, N. C., Al Hamad, N. M., Adewusi, O. E., Unachukwu, C. C., & Osawaru, B. (2024). Human resources strategies for talent development in young STEM Enthusiasts.
- Onyebuchi, N. C., Al Hamad, N. M., Adewusi, O. E., Unachukwu, C. C., & Osawaru, B. (2024). Mentorship programs in robotics and their impact on student development. zibeline publication
- Park, J. S., Ha, S., & Jeong, S. W. (2022). Voice Commerce: Exploring Consumer Expectations of Smart Speakers for Shopping. *International Textile and Apparel Association Annual Conference Proceedings*, 78(1). DOI: 10.31274/itaa.13433
- Raji, M. A., Brimah, A. N., & Mustapha, Y. I. (2020). Effect of sensory marketing on customer patronage in south-west Nigeria (case study of KFC). *Fountain University Osogbo Journal of Management (FUOJM)*, 5(2), 97-110.
- Raji, M. A., Olodo, H. B., Oke, T. T., Addy, W. A., Ofodile, O. C., & Oyewole, A. T. (2024). Digital marketing in tourism: a review of practices in the USA and Africa. *International Journal of Applied Research in Social Sciences*, 6(3), 393-408.
- Raji, M. A., Olodo, H. B., Oke, T. T., Addy, W. A., Ofodile, O. C., & Oyewole, A. T. (2024). Business strategies in virtual reality: a review of market opportunities and consumer experience. *International Journal of Management & Entrepreneurship Research*, 6(3), 722-736.
- Raji, M. A., Olodo, H. B., Oke, T. T., Addy, W. A., Ofodile, O. C., & Oyewole, A. T. (2024). E-commerce and consumer behavior: A review of AI-powered personalization and market trends. *GSC Advanced Research and Reviews*, 18(3), 066-077.
- Raji, M. A., Olodo, H. B., Oke, T. T., Addy, W. A., Ofodile, O. C., & Oyewole, A. T. (2024). Real-time data analytics in retail: A review of USA and global practices. *GSC Advanced Research and Reviews*, 18(3), 059-065
- Raji, M. A., Olodo, H. B., Oke, T. T., Addy, W. A., Ofodile, O. C., & Oyewole, A. T. (2024). E-commerce and consumer behavior: A review of AI-powered personalization and market trends. *GSC Advanced Research and Reviews*, 18(3), 066-077.
- Raji, M. A., Olodo, H. B., Oke, T. T., Addy, W. A., Ofodile, O. C., & Oyewole, A. T. (2024). The digital transformation of SMES: a comparative review between the USA and Africa. *International Journal of Management & Entrepreneurship Research*, 6(3), 737-751.
- Raji, M. A., Olodo, H. B., Oke, T. T., Addy, W. A., Ofodile, O. C., & Oyewole, A. T. (2024). Business strategies in virtual reality: a review of market opportunities and consumer

- experience. *International Journal of Management & Entrepreneurship Research*, 6(3), 722-736.
- Raji, M. A., Olodo, H. B., Oke, T. T., Addy, W. A., Ofodile, O. C., & Oyewole, A. T. (2024). Digital marketing in tourism: a review of practices in the USA and Africa. *International Journal of Applied Research in Social Sciences*, 6(3), 393-408.
- Rogers, W., Mois, G., Blocker, K., & Mudar, R. (2022). Exploring the potential of voice interfaces for emerging technologies: opportunities and challenges. *Innovation in Aging*, 6(Supplement\_1), 216-216. DOI: 10.1093/geroni/igac059.861
- Romero D.C. (2019). The deepening effects of the digital revolution. In: Fayos-Solà, E., Cooper, C. (eds) *The Future of Tourism*. Springer, Cham. [https://doi.org/10.1007/978-3-319-89941-1\\_3](https://doi.org/10.1007/978-3-319-89941-1_3)
- Rymarczyk, P., Bednarczuk, P., Nowak, R., & Cieplak, T. (2021). Methods of analyzing consumer behavior based on multi-source data. *European Research Studies Journal*, 24(2), 335-345. DOI: 10.35808/ERSJ/2229
- Saheed, Y. K., & Raji, M. A. (2022, March). Effectiveness of deep learning long short-term memory network for stock price prediction on graphics processing unit. In *2022 International Conference on Decision Aid Sciences and Applications (DASA)* (pp. 1665-1671). IEEE.
- Saheed, Y. K., Ayobami, R. M., & Orje-Ishegh, T. (2022). A comparative study of regression analysis for modelling and prediction of bitcoin price. In *Blockchain Applications in the Smart Era* (pp. 187-209). Cham: Springer International Publishing.
- Saheed, Y. K., Baba, U. A., & Raji, M. A. (2022). Big data analytics for credit card fraud detection using supervised machine learning models. In *Big data analytics in the insurance market* (pp. 31-56). Emerald Publishing Limited.
- Saheed, Y. K., Kehinde, T. O., Ayobami Raji, M., & Baba, U. A. (2023). Feature selection in intrusion detection systems: a new hybrid fusion of Bat algorithm and Residue Number System. *Journal of Information and Telecommunication*, 1-19.
- Schultz, C., & Brüggemann, P. (2021). Acceptance of Digital Voice Assistants for Grocery Shopping. In *Proceedings of the European Marketing Academy*, 50, 94494.
- Sheryl, R., & Ajitha, G. K. P. (2021). Improving the performance and functionality of AI and machine learning in electronic devices and systems. *Journal on Electronics Engineering*, 13(1), 26-38. DOI: 10.26634/jele.13.1.19345
- Shoetan, P. O., & Familoni, B. T. (2024). Blockchain's impact on financial security and efficiency beyond cryptocurrency uses. *International Journal of Management & Entrepreneurship Research*, 6(4), 1211-1235.
- Shoetan, P. O., & Familoni, B. T. (2024). Transforming fintech fraud detection with advanced artificial intelligence algorithms. *Finance & Accounting Research Journal*, 6(4), 602-625
- Tandon, U., Jhamb, D., Mittal, A., & Jain, V. (2022). Fostering Consumers' Attitude and Satisfaction towards Voice Assistants: An Empirical Validation. In *2022 Fifth International Conference on Computational Intelligence and Communication Technologies (CCICT)*, Sonapat, India, pp. 451-456, doi: 10.1109/CCICT56684.2022.00086.



- Udeh, C. A., Iheremeze, K. C., Abdul, A. A., Daraojimba, D. O., & Oke, T. T. (2023). Marketing across multicultural landscapes: a comprehensive review of strategies bridging US and African markets. *International Journal of Research and Scientific Innovation*, 10(11), 656-676
- Udo, W. S., Ochuba, N. A., Akinrinola, O., & Ololade, Y. J. (2024). The role of theoretical models in IoT-based irrigation systems: A Comparative Study of African and US Agricultural Strategies for Water Scarcity Management. *International Journal of Science and Research Archive*, 11(2), 600-606.
- Udo, W. S., Ochuba, N. A., Akinrinola, O., & Ololade, Y. J. (2024). Conceptualizing emerging technologies and ICT adoption: Trends and challenges in Africa-US contexts. *World Journal of Advanced Research and Reviews*, 21(3), 1676-1683.
- Udo, W. S., Ochuba, N. A., Akinrinola, O., & Ololade, Y. J. (2024). Theoretical approaches to data analytics and decision-making in finance: Insights from Africa and the United States. *GSC Advanced Research and Reviews*, 18(3), 343-349
- Umair, M. (2023). Data-Driven Decisions: Leveraging Text Analytics and ERP with AI for Business Intelligence. *Social Sciences Spectrum*, 2(1), 146-153.
- Umoga, U. J., Sodiya, E. O., Amoo, O. O., & Atadoga, A. (2024). A critical review of emerging cybersecurity threats in financial technologies. *International Journal of Science and Research Archive*, 11(1), 1810-1817.
- Usman, F. O., Eyo-Udo, N. L., Etukudoh, E. A., Odonkor, B., Ibeh, C. V., & Adegbola, A. (2024). A critical review of ai-driven strategies for entrepreneurial success. *International Journal of Management & Entrepreneurship Research*, 6(1), 200-215.
- Vernuccio, M., Patrizi, M., & Pastore, A. (2023). Delving into brand anthropomorphisation strategies in the experiential context of name-brand voice assistants. *Journal of Consumer Behaviour*, 22(5), 1074-1083. DOI: 10.1002/cb.1984
- Wilson, R., & Iftimie, I. (2021). Virtual assistants and privacy: An anticipatory ethical analysis. In 2021 IEEE International Symposium on Technology and Society (ISTAS), Waterloo, ON, Canada, doi: 10.1109/ISTAS52410.2021.9629164.
- Zhan, Y., Tan, K. H., Li, Y., & Tse, Y. K. (2018). Unlocking the power of big data in new product development. *Annals of Operations Research*, 270(1)