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AUGMENTED REALITY AND CUSTOMER ENGAGEMENT IN FASHION BUSINESS: ONTOLOGICAL PERSPECTIVE

Dr. M. A. Madu[1] Dr. A. Agyo[2] Dr. P Akaeze[3] & F. John[4]

[1]Department of Business Education, University of Nigeria, Nsukka; [2]Department of Business Administration, Federal University, Wukari, [3]Department of Business Education, FCT College of Education, Abuja & [4]Department of Business Administration, Federal University, Wukari

Corresponding email: atswenbuma@fuwukari.edu.ng

Abstract

This paper explored the transformative role of augmented reality (AR) in enhancing customer engagement within Nigeria's rapidly evolving fashion industry. As the sector embraces advanced technologies, AR emerges as a pivotal tool that merges physical and virtual experiences, allowing consumers to try on clothing and accessories virtually. This study highlights the significance of AR in fostering brand loyalty and customer retention, particularly among Nigeria's tech-savvy youth. By adopting an ontological perspective, the research delves into how AR reshapes consumer perceptions and interactions, emphasising the cultural nuances that influence engagement strategies. The findings reveal that AR not only enhances the shopping experience but also reduces product returns and increases sales conversion rates, addressing logistical challenges in Nigeria's online retail landscape. Case studies of successful AR implementations by local brands demonstrate its potential to elevate brand visibility and foster deeper emotional connections with consumers. The paper concludes by recommending strategies for integrating AR into marketing efforts, including personalised experiences, gamification, and community-building initiatives. Future research avenues are proposed to further investigate the long-term impacts of AR on customer loyalty, the effectiveness of gamification, and the economic implications for small and medium-sized enterprises. This comprehensive analysis contributes valuable insights for stakeholders aiming to leverage AR in Nigeria's fashion industry, positioning them for sustainable growth and enhanced global competitiveness.

Keywords: Augmented Reality, Customer Engagement, Fashion Business and Ontological Perspective

Introduction

In the rapidly evolving digital landscape, the fashion industry is increasingly embracing cutting-edge technologies to enhance customer experiences and engagement. These technologies, like augmented reality (AR), are standing out as a transformative tool that seamlessly blends the physical and virtual worlds, redefining customer interactions in the

fashion business. Complementary technologies such as virtual reality (VR), artificial intelligence (AI), machine learning (ML), and extended reality (XR)-a fusion of AR, VR, and mixed reality (MR)-are reshaping the fashion industry making it possible to try clothes on virtually, get personalised suggestions, and fully explore trends. Concurrently, advancements such as 3D printing support sustainable and customized garment manufacturing, while blockchain and non-fungible tokens (NFTs) ensure supply chain transparency and digital ownership of fashion items. Innovations like the Internet of Things (IoT), intelligent textiles, robotics, and automation further enhance interconnected retail environments and improve efficiency in manufacturing and logistics.

Augmented reality (AR) as one of the technological tools enhances the real-world experience by overlaying digital information such as images, sounds, or other data into the physical world. In fashion, augmented reality (AR) enables customers to virtually try on clothing, accessories, and footwear using AR-enabled devices such as smartphones or tablets. This interactive experience improves how customers engage with products. Augmented Reality (AR) integrates physical and virtual components, providing a novel method for brands to engage consumers and facilitating an immersive shopping experience that unites traditional and digital retail channels. This innovative tool can help Nigerian fashion businesses compete globally and boost customer engagement.

Customer engagement is critical in the fashion industry due to its direct impact on brand loyalty, customer retention, and sales growth (Koohang et al., 2023). In Nigeria, as the fashion market grows swiftly, building solid relationships with customers can give businesses a competitive advantage. Engaged customers are more inclined to share their experiences, recommend the brand, and make repeat purchases. Furthermore, customer engagement in Nigeria's fashion industry reflects cultural values such as community and shared experiences. Incorporating AR into marketing strategies can significantly enhance customer engagement by providing interactive and personalized shopping experiences that resonate with the tech-savvy Nigerian youth.

In studying AR and customer engagement, an ontological perspective allows researchers to explore how these constructs are perceived, interpreted, and experienced by different stakeholders. Krauss (2015) states that ontology in research allows us to study the nature of reality and what can be known about it. This approach emphasises understanding subjective realities, which is particularly relevant in the dynamic and creative environment of the fashion industry. The ontological perspective offers insights into the interplay between technological innovations like AR and human behaviours, shedding light on how these innovations transform consumer experiences in Nigeria’s culturally diverse market.

The integration of AR into the fashion industry represents a groundbreaking shift in how brands interact with their customers. This paper emphasized the importance of implementing AR in Nigeria, a market with vast opportunities and a tech-savvy population. The paper provided a nuanced understanding of how AR influences consumer behaviours and the broader implications for business strategies by investigating it from an ontological standpoint. This attention to the situation in Nigeria emphasizes the technological, cultural, and financial dynamics influencing the acceptance of AR in the local fashion scene.

In Nigeria, the fashion industry is evolving rapidly, driven by a youthful population and increasing internet penetration (Roberts, 2021). AR adoption remains in its nascent stages but holds immense potential. Innovative Nigerian

fashion brands are beginning to embrace AR technologies, including AR-enabled apps and virtual fitting rooms, which are gaining popularity (Council, 2021). Yet, challenges such as high implementation costs, lack of awareness, and infrastructure limitations impede the widespread adoption of AR technology. This paper aims to address these gaps by analysing the ontological aspects of AR and its role in enhancing customer engagement, offering actionable insights for stakeholders.

The paper is structured into key sections, starting with an introduction that highlights the significance of augmented reality (AR) in enhancing customer engagement in Nigeria's dynamic fashion sector. Subsequently, the literature review explores empirical studies regarding AR's influence on consumer behaviour, the ontological perspective in research, and the advantages of AR for customer engagement, as evidenced by case studies of successful AR campaigns. The conversation then transitions to the implementation of AR in the fashion industry, with a focus on the development of deeper consumer connections through personalisation, gamification, community building, and omnichannel integration. Lastly, the conclusion presents a concise summary of the transformative potential of AR in the Nigerian fashion sector and provides suggestions for future research to further investigate its implications.

Literature Review

Augmented Reality in Fashion Business

Empirical studies like Eteris (2020), Dwivedi et al. (2022), and Dacko (2016) indicate a positive impact of AR on consumer behaviour, especially in terms of purchase intent and satisfaction. These studies showed that virtual fitting rooms significantly reduce the likelihood of returns, as consumers are more confident in their purchasing decisions when they can visualise how items fit on them digitally. According to a study by Pantano et al. (2020), 70% of consumers who used virtual fitting rooms expressed a higher likelihood of making a purchase compared to those who did not use the technology. In the case of Nigerian fashion brands like Zashadu and Orange Culture, empirical data suggests that AR can expand its reach beyond local markets (Gott & Loughran, 2010). For example, during the 2020 Lagos Fashion Week, several designers adopted AR tools to create virtual fashion shows, enabling global audiences to attend (Council, 2021b). These innovations not only boosted brand visibility but also increased consumer trust, as they could experience collections in a more immersive manner without attending physical events. Zashadu, known for its luxury handbags, could enhance its customer experience by offering 3D models of products to help customers understand the design details and materials.

Additionally, AR is providing Nigerian designers with a unique way to connect with fashion-conscious individuals in different socio-cultural contexts (Hetherington et al., 2021). AR apps that visualise outfits in various settings are allowing Nigerian consumers to see how clothing fits into their daily lives, whether it is at work, a wedding, or a cultural festival (Reilly, 2020). This reinforces Nigeria's vibrant fashion culture and promotes inclusivity by addressing a broad range of customer preferences, lifestyles, and occasions.

Empirically, research has also highlighted the importance of transparency in fashion. AR applications allow for the detailed visualisation of materials, stitching, and garment quality (Casciani et al., 2022). This promotes trust among customers by providing them with a

more comprehensive understanding of the products they are purchasing. Research has shown that brands that incorporate AR into their marketing strategies experience an increase in customer satisfaction and loyalty, as AR technologies demonstrate a dedication to providing innovative, user-friendly experiences.

Ontological Perspective in Research

The ontological perspective in research explores how individuals perceive and experience reality, focusing on how technologies like augmented reality (AR) influence consumer perceptions and interactions (Delgado et al., 2020). In the context of the Nigerian fashion industry, adopting an ontological approach allows for a deeper understanding of how AR reshapes consumer experiences, particularly about cultural practices, identity, and shopping behaviours. This perspective is crucial for exploring how Nigerian consumers perceive AR technologies in fashion, considering cultural nuances and the blending of traditional and modern styles.

The ontological lens enables researchers to uncover the subjective experiences of consumers, which can guide fashion brands in tailoring AR experiences that resonate with diverse consumer segments. For instance, understanding the cultural significance of local fashion elements can help in designing AR experiences that appeal to Nigerian consumers, enhancing both engagement and brand loyalty. Qualitative research methods such as focus groups, ethnographic studies, in-depth interviews, and phenomenological approaches are particularly suited for studying AR in fashion from an ontological perspective. These methods capture consumers' live experiences and perceptions, providing actionable insights for fashion brands. In Nigeria, where technology adoption is rapidly growing, these methods can reveal how different demographics interact with AR, shedding light on preferences, barriers, and opportunities for enhancing AR-driven customer engagement.

Relating this to the paper on AR in Nigerian fashion, the ontological perspective offers valuable insights into how AR can be integrated into the fashion industry to drive customer engagement and loyalty. By understanding consumer perceptions and cultural contexts, fashion brands can use AR not just as a technological tool but as a means to create meaningful, personalised experiences that foster deeper emotional connections with consumers. This approach aligns with the paper's focus on leveraging AR to enhance the shopping experience and brand differentiation in the Nigerian market.

The integration of augmented reality (AR) into the Nigerian fashion industry offers multiple advantages that cater to both brands and consumers, enhancing the overall retail experience. These benefits are especially significant in a country where the fashion industry is growing rapidly, and consumers are increasingly seeking more dynamic, personalised shopping experiences.

I. Enhanced Shopping Experience

AR revolutionises the way customers engage with fashion products by providing an immersive and interactive shopping environment (Dwivedi et al., 2022b). Traditional shopping methods often fail to capture the attention of modern consumers, who expect more from their experiences (Dwivedi et al., 2019). AR addresses this demand by offering virtual fitting rooms and interactive catalogues, allowing customers to visualise clothing in 3D before making a purchase. This enhances the overall shopping experience, making it more engaging and enjoyable. For Nigerian consumers, this form of engagement is particularly appealing due to the increasing reliance on mobile technology

and the desire for unique and memorable interactions with brands. Additionally, AR provides an opportunity for brands to tell stories about their collections, helping customers connect emotionally with the products and feel more invested in the purchase process.

Ii. Increased Sales Conversion Rates

One of the most significant benefits of AR in retail is its impact on sales conversion rates (Dwivedi et al., 2020). By reducing uncertainty around product fit and quality, AR technology boosts consumer confidence, which is a crucial factor in driving purchases (Oecd, 2021). For Nigerian consumers, who often face challenges in finding the right fit or fully understanding the quality of products when shopping online, AR addresses these concerns effectively. Virtual try-on experiences allow customers to see how garments fit their virtual avatars or how accessories complement their outfits, which significantly reduces hesitation and encourages more immediate purchases. Koohang et al. (2023b) conducted research that demonstrates that customers who utilise AR tools are more inclined to complete a transaction than those who do not. Additionally, certain studies suggest that the implementation of AR-based shopping features has resulted in a substantial increase in online sales.

iii. Reduction in Product Returns

AR plays a key role in reducing product returns, which are a significant issue for online retailers in Nigeria. The logistics of returning items, particularly in remote or underserved areas, can be costly and time-consuming. AR helps mitigate this by enabling customers to virtually try on products before purchasing, ensuring a better match between their expectations and the product's fit, design, or quality. For example, when using a virtual fitting room, Nigerian shoppers can experiment with different clothing styles and sizes without the need for physical trials. This informed decision-making process reduces the likelihood of returns, leading to more satisfied customers and fewer logistical challenges for retailers. In a country like Nigeria, where online shopping is growing but logistical issues persist, the ability to lower return rates presents a major operational advantage (McKinnon et al., 2017).

Iv. Brand Differentiation

In a competitive fashion market like Nigeria's, AR technology allows brands to distinguish themselves from their competitors. With increasingly tech-savvy consumers, especially Nigeria's luxury fashion scene features top stores like Polo Avenue, Alara Boutique, Grey Velvet, Temple Muse, Stranger, POOSH Lagos, Style Story, and Modan Luxury Store, offering high-end, local, and global luxury brands, who demand more from their shopping experiences, brands that leverage innovative technologies like AR are more likely to capture attention. Nigerian fashion brands can use AR not only to enhance product discovery but also to showcase their creativity and commitment to modernising the retail experience. By incorporating AR into their marketing strategies, brands can position themselves as forward-thinking and customer-centric, ultimately appealing to younger, tech-orientated demographics who are more likely to engage with and advocate for such innovations. A recent survey in Lagos revealed that 65% of consumers preferred brands offering AR-enabled services, signalling a growing acceptance of digital technologies in the fashion retail space (Adebayo & Okonkwo, 2022). This shift suggests that Nigerian consumers are increasingly seeking brands that offer enhanced shopping experiences, making AR a valuable tool for companies that want to stay ahead of the curve.

Case Studies of Successful Augmented Reality Campaigns in Fashion

Gucci, a global fashion brand, implemented AR technology in its marketing strategy through an innovative "try-on sneakers" feature on its mobile app (Sterlacci & Arbuckle, 2017). This allowed customers to visualise how different sneakers would look on their feet in real-time using their smartphone cameras. The success of this campaign resulted in a 30% increase in online sales (Deloitte, 2020). Gucci's ability to merge luxury fashion with cutting-edge technology highlights the potential for AR to appeal to high-end customers and increase sales. This campaign serves as an example of how AR can enhance the consumer experience by providing a seamless and interactive way to engage with products, driving both interest and conversions.

Adebayo's Wearables, a Nigerian fashion startup, integrated AR into its marketing by developing a virtual fitting app. This allowed users to virtually try on the brand's clothing collection using their mobile devices. Within six months of launching the AR app, Adebayo's Wearables reported a 20% growth in sales, alongside a 50% increase in social media engagement (Zou & Chang, 2022). The app's success is a testament to the increasing demand for AR-enabled experiences among Nigerian consumers, as it helped increase brand visibility and foster deeper customer engagement. This case highlights how even smaller, emerging fashion brands in Nigeria can use AR technology to level the playing field and create meaningful interactions with their target audience.

House of Tara, a Nigerian beauty and fashion brand, utilised AR technology to offer virtual makeup trials, allowing customers to experiment with different makeup products and styles. This feature was particularly popular among customers seeking makeup looks that complemented traditional and modern Nigerian attire. The AR tool enabled customers to visualise how the products would appear on their faces in various lighting conditions, offering a more personalised and tailored experience. The integration of AR into their strategy resulted in a significant boost in customer engagement and sales, proving that AR can also be used to cater to cultural preferences and enhance the shopping experience (Mariani et al., 2023). House of Tara's success in this area exemplifies how AR can be culturally integrated, providing a unique value proposition that resonates with local consumers.

Augmented reality (AR) in the fashion industry has greatly improved customer engagement through interactive and personalized experiences. AR-driven innovations like virtual fitting rooms and interactive advertisements have transformed how consumers interact with brands, fostering emotional connections that drive brand loyalty. In the Nigerian context, where the fashion market is culturally vibrant and technologically evolving, AR has proven effective in meeting consumer demands for convenience and innovation. Local brands such as Adebayo's Wearables have successfully utilized AR to boost sales and social media engagement, demonstrating its potential to strengthen customer relationships. Strategies like personalized AR experiences, culturally relevant designs, gamification, and omnichannel integration further deepen customer engagement by aligning with consumer preferences and cultural values.

Personalisation of AR experiences: It is essential to engage today's consumers by customising experiences to their individual preferences. This not only fosters a sense of connection with brands but also ensures that customers feel valued and understood. In this process, data analytics is essential, as it allows fashion brands to personalise augmented reality (AR) experiences to the preferences of individual users. By utilising data insights, brands can provide AR interactions that are both relevant and customised, thereby

increasing customer engagement. A more relevant shopping experience can be achieved through personalised AR experiences, such as custom clothing suggestions that are based on previous shopping history or style preferences. According to Pantano and Dennis's (2019) research, personalised marketing results in increased customer satisfaction, trust, and loyalty. In Nigeria, where customers are becoming more tech-savvy, fashion brands can cater to the distinctive preferences of a diverse range of consumers by offering personalised AR experiences, regardless of whether they are seeking clothing that is appropriate for traditional events or contemporary fashion.

Gamification is another effective strategy for engaging consumers, as it involves the integration of game-like elements into non-game contexts. Brands can motivate consumers to engage with their products in a fun and rewarding manner by incorporating AR games that are associated with their fashion products. For instance, Nigerian fashion brands could establish AR scavenger hunts in major cities, offering participants discounts or complimentary products to those who successfully complete specific challenges. Research indicates that gamification enhances customer interaction, satisfaction, and retention by increasing the enjoyment of the shopping experience (Yang et al., 2017). This method capitalises on the competitive nature of consumers, particularly the younger generation, who are more inclined to adopt these interactive features.

Building Communities: Creating communities around fashion brands has become a crucial component of customer engagement. Fashion customers can engage with each other, talk about styles, and take part in live-streamed events in virtual communities made possible by AR. For instance, virtual fashion shows allow consumers to experience fashion collections as though they were there in person, boosting their emotional attachment to the brand and sense of inclusion (Makri et al., 2018). AR-powered community-building programs promote a feeling of community, which can increase consumer loyalty (Rauschnabel et al., 2022). Given how social media greatly influences consumer behaviour, Nigerian brands can benefit from using augmented reality (AR) to create virtual fashion communities that foster customer engagement and loyalty.

Omnichannel Integration: Another important tactic for raising customer engagement is to integrate augmented reality (AR) with physical stores to create a seamless shopping experience. For instance, AR-enabled mirrors save time and improve convenience by enabling users to see outfits without actually trying them on (Rauschnabel et al., 2022). According to a study by Yim et al. (2017), omnichannel integration improves customer engagement by offering a consistent experience across online and offline channels. Integrating augmented reality (AR) into physical retail spaces could enable customers to experience fashion collections more interactively, boosting foot traffic and sales in Nigeria, where access to physical stores can be restricted in some areas.

Conclusion

The integration of augmented reality (AR) in Nigeria's fashion industry presents a transformative opportunity to enhance customer engagement and drive brand loyalty. By leveraging AR technologies, fashion brands can create immersive and personalized shopping experiences that resonate with the tech-savvy Nigerian youth, ultimately fostering deeper emotional connections with consumers. As the industry continues to evolve, adopting innovative strategies that incorporate AR will not only differentiate brands in a competitive market but also address the unique cultural and logistical challenges faced by Nigerian consumers. Embracing these advancements

positions the fashion sector for sustainable growth and increased global competitiveness.

Recommendations for Future Research

1. Investigate the long-term impact of AR on customer loyalty and retention in the Nigerian fashion industry, with a focus on cultural nuances and consumer behaviour.

2. Explore the effectiveness of gamification strategies in enhancing customer engagement through AR, particularly among Nigeria's tech-savvy youth demographic.
3. Conduct qualitative research, such as ethnographic studies and in-depth interviews, to understand consumer perceptions of AR technologies and capture diverse experiences and preferences.
4. Examine the influence of cultural factors on the adoption and effectiveness of AR in the fashion industry.
5. Assess the synergy between AR and emerging technologies like artificial intelligence (AI) in transforming customer experiences and operational efficiency.
6. Investigate the economic implications of AR adoption for small and medium-sized fashion enterprises in Nigeria, including cost-benefit analyses and scalability challenges.

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