



Article

From Counter to Clicks: Revolutionizing Fashion Industry with Digital Interaction

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Abstract: In the digital age, customer engagement has become a cornerstone of business success. Customized and interactive customer interaction that has been enabled by technology has replaced traditional models of customer interaction. Digital human interaction is a paradigm shift, the convergence of human-like interface, advanced technologies, such as immersive technologies, natural language processing (NLP), artificial intelligence/ machine learning (AI-ML). Chatbots, virtual assistants, and interactive websites have become more than just a tool; they are now the face of the business as they are interacting with customers in real time to generate conversations that appear similar to human intercourse. This paper explores the radical nature of the digital techniques of human interaction on customer engagement within Fashion industry. The study uses Structural equation modeling (SEM) to determine implications of digital human interaction tools on customer engagement.

Keywords: Digital Human Interaction (DHI), Fashion industry, online customer engagement.

INTRODUCTION

Customer engagement is an element of success in the digital age of business. Customized and interactive customer interaction that has been enabled by technology has replaced traditional models of customer interaction. Digital human interaction is a kind of paradigm shift, as it reflects the integration of such high-level technologies as artificial intelligence, natural language processing, and machine learning with human-like interfaces. Chatbots, virtual assistants, and interactive websites have become more than just a tool; they are now the face of the business as they are interacting with customers in real time to generate conversations that appear

similar to human intercourse. Gartner Report (2024) indicates that the world digital human market is expected to reach 125 billion in 2035. Allied Market Research shows that the digital human economy will be increased even more quickly and reach 440.3 billion by 2031.

The high pace of digital technology adoption has dramatically changed the fashion industry and altered the way brands can communicate, interact and create value to the consumers. Digitalization, as per research, has transformed the fashion marketing through interactive platforms, smooth communication between consumers and the brands

and the increased personalization (Rathore, 2019, 2021). As consumers are now only a single click away in terms of accessing fashion content worldwide, digital marketing mechanisms, including the click-based advertising, online-to-offline, and real-time engagement, have become the keys to competitiveness (Arshad et al., 2024; Tse and Tung, 2016; Wang, 2023). Another observation made by scholars is that digital transformation is not limited to marketing, but affects business models, supply chains, and retail innovation using technologies such as social media, immersive content, and AI-enabled consumer analytics (Cabigiosu, 2020; Gallery, 2024). The technological transformation of the fashion communication has reinvented consumer experiences making them dynamic, responsive and participation culture, participative and responsive across the platforms (Rocamora, 2013). Collectively, these research papers point at the fact that digitalization is not only operational improvement but a strategic driver that changes the whole fashion industry ecosystem.

Customer support is one of the major effects of digital interactions between human beings. Such interfaces as chat bots having natural language understanding can process complicated queries. Fashion brands are utilizing virtual influencer to help buyers to be able to discover products. This is done to attract their tech-savvy Gen Z customers. Virtual assistant in the form of humans can assist customers to troubleshoot, solving the problems effectively. On the one hand, digital human interaction offers revolutionary possibilities; on the other, it is problematic. The concept of ethics touching upon issues of data privacy, the authenticity of interactions, and the possible deprivation of the human touch has to be approached cautiously. Online human communication (DHI) has the potential to be used to engage customers in the jewellery business in India. DHIs can offer these guides by establishing a virtual jewellery consultant that will be able to engage with the customer through interaction and give advices and even go ahead to guide them on the creation of their own custom jewellery designs. These experiences can be offered by DHIs through providing customers with an opportunity to use a virtual consultant who will be able to respond to their questions, give advice, and help to create personal items. The influence of technology in consumer-brand interaction in retail settings is an issue of discussion that is coming into limelight. Fashion brands are utilizing virtual influencer to help buyers to be able to discover products. This is done to attract their tech-savvy Gen Z customers.

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LITERATURE REVIEW

Technological innovation is likely to bring an incredible change to the retail and service setting (Davenport et al., 2020). Oosthuizen et al. (2021) research the consequences of the COVID-19 that forced retail players to shift to online services. Bonetti et al. (2019) put into the spotlight factors that influence the brand engagement with immersive technologies in the retail sector. The combination of sentiment analysis and emotional computing has been examined in previous research to enable digital agents in successfully reacting to the emotions of clients (Nikhashemi et al., 2021; Banerjee et al., 2021).

Technological innovation is poised to fundamentally change the retail and service environments (Davenport et al., 2020). Previous research shows that incorporating augmented reality (AR) into marketing strategies increases consumer engagement (Deng, Unnava & Lee, 2019) and positive experiences (Rauschnabel et al., 2022). Oosthuizen et al. (2021) also as discussed the impact of COVID-19 that has forced retail players to shift to digital. Silva & Bonetti (2021) study consumer attitudes towards the propensity to interact with digital humans to uncover insights to help fashion businesses seeking to diversify their operations. Prior studies reported that integration of augmented reality (AR) with marketing

tactics enhances engagement of customer (Deng, 2019; Rauschnabel et al., 2022). The utilization of technology has undergone a significant transformation in terms of its impact on consumer interaction and involvement (Mohiuddin et al., 2022). Applied technology has become quite revolutionary for consumer engagement (Mohiuddin et al., 2022). Past researchers have explored the integration of sentiment analysis and affective computing to enable digital humans to respond appropriately to customer emotions (Nikhashemi et al., 2021; Banerjee et al., 2021). Research has shown that the use of applied technology enhances customer experiences in a favorable way (tom Dieck et al., 2018). Additionally, it promotes consumer involvement by creating a sense of immersion (Gómez et al., 2019; Deng et al., 2019). The research on immersive technology's effect on brand engagement, exemplified by McLean and Wilson's 2019 study, highlights how immersion can increase consumer connection with a brand, as concluded by research by Shafer et al in 2019.

Technology's role in shaping consumer-brand engagement within retail environments has become increasingly significant. This study particularly examines how artificial intelligence can simulate intelligent human behavior in online fashion shopping contexts to enhance engagement through human-computer interaction (Huang & Rust, 2018; Syam & Sharma, 2018). Prior research demonstrates that applied technologies not only elevate consumer experiences (tom Dieck, Jung, & Rauschnabel, 2018) but also foster deeper engagement through immersive environments (Deng et al., 2019; Gómez et al., 2019). Investigations into immersive technologies further reveal their strong potential to strengthen brand engagement (McLean & Wilson, 2019), with immersive experiences shown to enhance consumer connection and enjoyment (Shafer et al., 2019).

Based on literature review, it is evident that there exists less published academic research that investigates how likely consumers are to interact and engaged with digital interaction in context to fashion business. There is a lack of published academic study that examines the likelihood of consumer connection and engagement with digital interaction in the context of the fashion industry, as indicated by the literature review. This study specifically examines the utilization of artificial intelligence (AI) to imitate intelligent human behavior in the context of online fashion purchasing. The present study assist in providing future directions for studying the evolving landscape of digital humans in customer engagement, including advancements in natural language processing, human-computer interaction, and the

integration of augmented reality.

METHOD

A survey research design was used and the questionnaire was the main tool of data collection. This is a line of approach that follows the practice in similar past researches. Research analyzed the primary (antecedent) impact of AI in the consumer engagement process. Of the 322 respondents who met the eligibility requirements and filled the survey questionnaire onsite, 251 of them gave usable data to be included in the final analysis. The sample consisted of 66.5 percent females. Majority of the respondents were below 30 years and 72 percent were either in college or held university degrees and higher. The answers are measured with the help of the 5-point Likert scales (1 = strongly disagree, 5 = strongly agree) and the survey tool is being tested with the help of pilot test. The measures used in the research were adapted and altered by past studies. Research adapted and modified measures from previous studies.

The proposed research model examined the influence of Digital Interaction Tools (DIT)—including chatbots, virtual assistants, digital influencers, and AI-driven features—on Customer Engagement (CE) in the online fashion industry. The model also incorporated two mediating constructs: Perceived Usefulness (PU) and Interaction Quality (IQ). Following are the hypotheses formulated to test the relation.

- ❖ *H1: Digital Interaction Tools (DIT) have a significant positive effect on Perceived Usefulness (PU).*
- ❖ *H2: Digital Interaction Tools (DIT) positively influence Interaction Quality (IQ).*
- ❖ *H3: Perceived Usefulness (PU) positively affects Customer Engagement (CE).*
- ❖ *H4: Interaction Quality (IQ) has a significant positive effect on Customer Engagement (CE).*
- ❖ *H5: Digital Interaction Tools (DIT) directly and positively influence Customer Engagement (CE).*

In this study, the measurement model was assessed using PLS-SEM (SmartPLS), a component-based structural equation modeling technique. The results confirm satisfactory convergent and discriminant validity, with composite reliability (CR) and average variance extracted (AVE) values meeting established criteria. As per the Fornell-Larcker framework, all constructs demonstrate adequate validity levels consistent with recommendations by Bagozzi and Yi (1988).

RESULT

Table 1: Sample Demographics		
Variable	Category	Percentage
Gender	Male	34%
	Female	67%
Age	Below 20	20%
	20–30 years	75%
	31–40 years	5%
Education Level	School Level	12%
	Undergraduate	41%
	Postgraduate	47%
Shopping Platform Used	Websites	45%
	Mobile Apps	55%

The majority of the sample is female (67 percentage), with males making 34 of the sample. The majority of those surveyed are between the age of 20-30 years (75%), which suggests the presence of a youthful and digitally active consumer base, and therefore online fashion-related activity.

Table 2: Convergent Validity with CR & AVE, Fornell–Larcker Discriminant Validity

Construct	Items	Factor Loadings	CR	AVE
Digital Interaction Tools (DIT)	4	0.76	0.89	0.68
Perceived Usefulness (PU)	3	0.79	0.88	0.71
Interaction Quality (IQ)	4	0.72	0.9	0.69
Customer Engagement (CE)	4	0.81	0.92	0.74
Fornell–Larcker Matrix	DIT	PU	IQ	CE
DIT	0.82			
PU	0.51	0.84		
IQ	0.48	0.56	0.83	
CE	0.54	0.59	0.62	0.86

Table 2 shows the assessment of the measurement model, and it shows that the constructs had high reliability and validity. The composite reliability (CR) scores are 0.88 to 0.92, which is higher than the recommended 0.70, whereas the AVE scores are 0.68 and 0.74 showing satisfactory convergent validity. According to the FornellLarcker matrix the square root of AVE (diagonal items) is greater than the inter-construct correlations which demonstrates that there is discriminant validity.

Table 3: Result of SEM

Hypothesis	Path	β (Beta)	t-value	Result
H1	DIT → PU	0.47	9.12	Supported
H2	DIT → IQ	0.43	8.45	Supported
H3	PU → CE	0.41	7.68	Supported
H4	IQ → CE	0.46	8.02	Supported
H5	DIT → CE	0.29	5.27	Supported
Model Fit Values : $\chi^2 = 412.36$, Comparative Fit Index (CFI) =0.984, Root Mean Square Error of Approximation (RMSEA) = 0.066, Tucker–Lewis Index (TLI) =0.935				

Table 3 presents the results of the structural model showing a strong support of all the hypotheses suggested. Taken together, these fit indicators allow concluding that the suggested SEM model does reflect the data and helps to support the hypothesized relationships in a strong manner. Digital Interaction Tools have a strong correlation with Perceived Usefulness ($b = 0.47$, $t = 9.12$) and Interaction Quality ($b = 0.43$, $t = 8.45$), which supports their primary

nature in determining the future perceptions of the users. As the positive influence of both Perceived Usefulness ($b = 0.41$, $t = 7.68$) and Interaction Quality ($b = 0.46$, $t = 8.02$) is strong on Customer Engagement, it is possible to point out that the two mediate the improvement of consumer reactions to digital features. Also, the Customer Engagement is directly impacted by the Digital Interaction Tools ($b = 0.29$, $t = 5.27$), which supports their primary role in

consumer behavior implications. Each of the pathways is statistically significant, which is indicative of the overall conceptual model.

FINDINGS AND DISCUSSION

Artificial intelligence has recently gained prominence as a crucial and significant subject in the fashion industry; nonetheless, a methodical and all-encompassing approach is lacking. The topic of artificial intelligence has been recent and has become one of the pivotal and important topics within the fashion industry; however, there is no systematic and comprehensive approach. The research was driven by the need to understand the tendency of customers to do business with online organizations. Moreover, research explored numerous factors, which might likely influence how customers are interacting with the digital beings. This paper discusses the revolutionizing impact of digital interaction tools, including chatbots, digital influencers, virtual assistant, and other tools based on artificial intelligence (AI) on the fashion industry. Through analyzing the incorporation of these technologies, studies seek to know how they can be used to engage customers.

Chatbots and virtual assistants have appeared as useful means of increasing customer interaction. They offer immediate and customised support and assist customers in product selection, sizes and styles. The researchers concluded that fashion companies with chatbots had more satisfied customers and a better chance of repurchase. The sphere of digital influencers in the fashion industry has changed considerably. Through the use of AI tools in influencer marketing, brands will be able to find the right influencers, streamline the partnerships, and measure the effectiveness of the campaigns. The paper notes that there is a positive relationship between strategic utilization of digital influencers and brand visibility which lead to better brand perception and higher sales. The online shopping experience is transformed by virtual assistance tools (augmented reality (AR) and virtual try-ons). The paper recognizes the ethical concerns of AI tools, including the privacy of data, bias in algorithms, and the abuse of digital influencers. Fashion brands must ensure they put down clear policies and ethical guidelines in applying these technologies to earn the trust of consumers.

Our research findings have highlighted the fact that consumer response to digital images of human beings could have far-reaching consequences to the fashion industry and other areas of study. This study provides information on how digital interaction technologies can revolutionize the fashion industry. Through chatbots, digital influencers, virtual assistants, and other artificial intelligence

technologies, fashion brands will be able to engage customers better, streamline marketing operations and stay relevant to industry trends. The industry keeps on changing and as it moves forward, it will be necessary to remain adaptive to current emerging technologies in order to be successful. We have also found that the reaction of consumers to the types of digital humans may have severe implications on the practice of fashion business, as well as various areas of academic research.

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