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Enhancing Brand Experience, Attitude, and Purchase Intention through AI: Examining Customer Engagement and E-Commerce Usefulness

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Abstract

In today's consumer landscape, experiences and memories are gaining greater value, driven by advancements in artificial intelligence technologies. This study investigates the impact of artificial intelligence on brand attitude, brand experience, and purchase intention, while exploring the mediating role of customer engagement on social media and the moderating influence of perceived usefulness of e-commerce. Data were collected from 322 employees associated with Moroccan brands. The findings reveal a significant mediating effect of customer engagement on social media in the relationship between artificial intelligence technology and the outcomes of brand attitude, brand experience, and purchase intention. Additionally, the study highlights the substantial moderating role of perceived usefulness of e-commerce in enhancing the relationship between artificial intelligence technology, brand experience, and purchase intention. These insights contribute to a deeper understanding of consumer behavior and provide practical value for organizations, social media strategists, and policymakers.

Keywords

AI Technologies, Customer Engagement on Social Media, Perceived Usefulness of E-Commerce, Attitude Toward Brand, Brand Experience, Purchase Intention

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1. Introduction

The proliferation of social media is evident in phenomena such as "Like Us" campaigns on Facebook, viral videos on YouTube, Pinterest pinboards, and trending hashtags on Twitter. Over 70% of internet users actively engage with social media, managing an average of 5.54 social media accounts (Syaharani & Yasa, 2022). Social media's accessibility has surged due to widespread smartphone adoption, making it an omnipresent aspect of modern life (Lim & Rasul, 2022; Pallant et al., 2022). Social media platforms serve not only individuals but also organizations, businesses, causes, and brands, which leverage these platforms to generate content and foster engagement (Nazir, Khadim, Ali Asadullah, et al., 2023). However, businesses often face challenges in effectively engaging with customers and understanding their impact. Social media advertising has become a significant revenue driver, generating $12 billion in 2021, with 50% of businesses allocating over 40% of their advertising budgets to these platforms (Bilro et al., 2022). Furthermore, 95% of retail firms now utilize two or more social media platforms (Vinerean & Opreana, 2021). Social media has become a critical medium for idea exchange, information dissemination, and creating unique brand experiences (Agnihotri, 2020). The integration of artificial intelligence (AI) into Web 2.0 marketing applications has provided businesses with tools to meet consumer needs dynamically, enhance engagement, and expand their customer base (Gong, 2021; Hamamoto et al., 2020; Liao et al., 2023). AI-driven technologies allow businesses to deliver personalized online experiences, optimize social media engagement, and increase

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purchase rates for recommended products and services (Lee & Yoon, 2021; Li et al., 2021). Moreover, these technologies have enabled businesses to adapt quickly to challenges such as travel restrictions and lockdowns during the pandemic (Bozkurt et al., 2021). Consequently, the role of social media in enhancing brand experiences has become a focal point of recent research (Balio & Casais, 2020). Customers are increasingly drawn to social media for intellectual, behavioral, emotional, and sensory experiences, which strengthen intimacy, trust, relationship equity, brand equity, and value equity (Elouali et al., 2020; Joshi & Garg, 2021; Shukla et al., 2022; Vinerean & Opreana, 2021; Yuanita & Marsasi, 2022). However, limited research has explored the connections between social media customer engagement and brand experience.

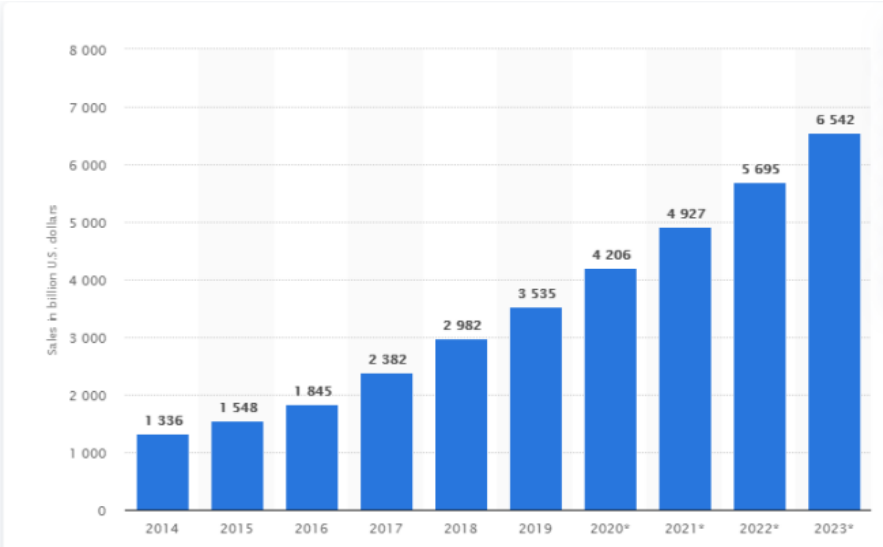

Figure 1: E-Commerce 2014-2023 Sales
Source: (Keni, 2020)

E-commerce is one of the fastest-growing industries globally, particularly in Asia. Over the past decade, global e-commerce sales in the retail sector have experienced significant growth, rising from $1.336 trillion in 2014 to $3.53 trillion in 2019 and projected to reach $6.542 trillion by 2023 (Kedah, 2023; Keni, 2020). This growth can be attributed not only to the increasing number of e-commerce businesses and visitors but also to repeat customers returning to the same platforms for purchases (Kedah, 2023; Li & Wang, 2023; Vinerean & Opreana, 2021). Advances in technology and the internet have further enabled these trends by aligning with czzzonsumers' evolving preferences for practicality and convenience (Cabrera-Sánchez et al., 2020). This study aims to examine the impact of AI technologies and social media platforms through a comprehensive framework of variables influencing consumers' purchase intentions. Unlike one-time transactions, customer conversion through social media engagement is an ongoing process (De Oliveira Santini et al., 2020). The study investigates whether AI technology affects consumers' attitudes, experiences, and purchase intentions toward brands through social media engagement. Additionally, it explores the moderating role of perceived e-commerce value in shaping the relationship between consumer attitudes, experiences, and purchase intentions and their engagement on social media.

2. Conceptual Background

2.1. Artificial Intelligence Technology

Artificial intelligence (AI) refers to the capability of computers to perform tasks requiring human-like intelligence (Liao et al., 2023). With its increasing use in the business world, AI has drawn

significant academic interest concerning its impact on marketing performance and purchase decisions. AI is a sophisticated technology that benefits businesses of all sizes by supporting customer retention strategies and commercial decision-making (Lee & Yoon, 2021; So et al., 2021). Despite its advantages, managers face challenges in integrating AI into businesses, particularly in influencing customer decisions and encouraging purchases (Wang et al., 2019). Nevertheless, AI has become essential, particularly in e-commerce, where it helps persuade users to consider additional purchases and increases overall spending (Li et al., 2021). Unlike traditional retail stores, where customers might notice additional products during checkout, online platforms require advanced technologies to replicate or improve this experience (Nazir, Khadim, Ali Asadullah, et al., 2023; So et al., 2021). Online marketplaces must employ these technologies effectively to enhance customer engagement and create experiences that rival physical stores (Gong, 2021; Liao et al., 2023).

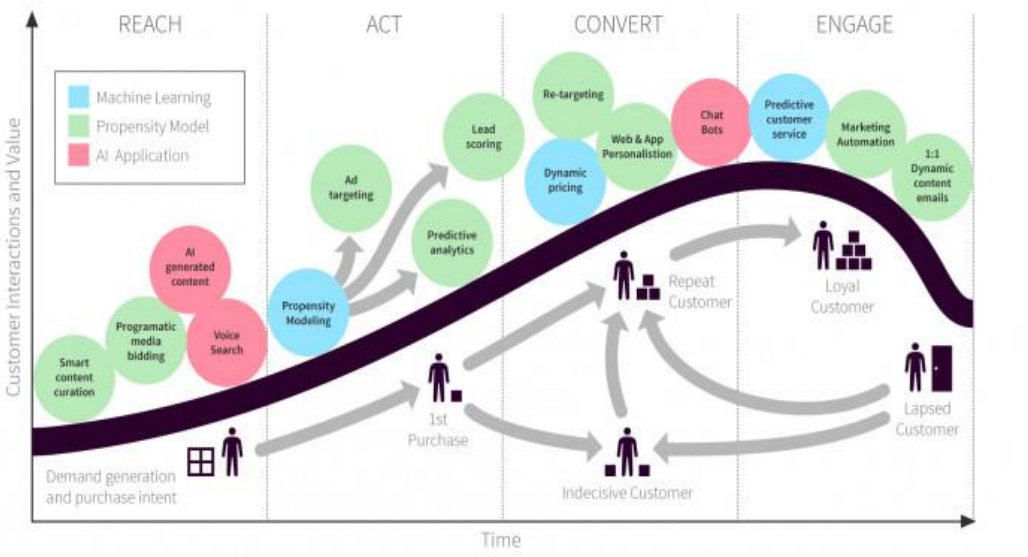

Figure 2: AI Technologies use in Branding

2.2. Customer Engagement on Social Media

Customer engagement encompasses methods, strategies, and technological tools designed to facilitate consistent interactions with potential clients across various touchpoints (Lim & Rasul, 2022). Social media has become a vital tool for businesses seeking to identify and engage highly active customers, enabling targeted marketing campaigns and fostering long-lasting relationships(Shawky et al., 2020). Social media engagement reflects consumers' psychological states during co-creative and interactive experiences with a business (Vinerean & Opreana, 2021). By employing analytical tools, businesses can gain insights into consumer preferences, behavior, and engagement through reviews, comments, and interactions on e-commerce platforms (Ahmadie, 2022; Hussein & Hassan, 2017; Shawky et al., 2020). Businesses have updated their customer engagement approaches by integrating digital technologies into social media platforms, providing value for both customers and marketers (Bozkurt et al., 2021; Khan et al., 2020). Social media allows customers to communicate directly with businesses, share feedback, and receive timely responses to inquiries, fostering a positive brand perception (Agnihotri, 2020; De Oliveira Santini et al., 2020). However, managing social media engagement can be challenging. To address these challenges, businesses utilize AI to monitor consumer feedback and tailor content to meet customer expectations effectively (Bozkurt et al., 2021; Vinerean & Opreana, 2021).

2.3. Attitude toward Brand

The literature on branding has extensively discussed factors such as brand satisfaction, value, and loyalty (Bilro et al., 2022). However, the role of AI in shaping attitudes toward brands has received limited attention (Chin et al., 2020). Customers' overall evaluation of a brand—whether positive or negative—forms the basis of their attitude toward it (Li & Wang, 2023). Attitude toward a brand is defined as a relatively enduring and unidimensional summary evaluation that influences behavior (Hwang et al., 2021). It plays a crucial role in consumer behavior by shaping the perceived value of a brand (Hwang et al., 2021; Smith, 2020). A brand's features and benefits significantly influence customers' attitudes and serve as a foundation for engagement and loyalty (Jhamb et al., 2020).

2.4. Brand Experience

The concept of brand experience originates from fields such as philosophy, cognitive science, and management (Jhamb et al., 2020). It gained prominence through frameworks like the "experience economy" and "experiential marketing" (Mostafa & Kasamani, 2021; Pina & Dias, 2021). Brand experience is shaped by customers' sensory, behavioral, intellectual, and emotional interactions with a brand, making it a critical factor in consumer perceptions (Pallant et al., 2022). Research highlights its multifaceted nature, emphasizing its sensory, emotional, cognitive, and behavioral dimensions throughout the decision-making process (Shukla et al., 2022). Although brand experience is related to evaluative attributes such as brand attachment, personality, and attitudes, it is distinct in its impact on consumer memory and perception (Shukla et al., 2022). Brand experiences are not limited to physical stores but can also occur in online environments, such as during product searches or service interactions (Hwang et al., 2021; Joshi & Garg, 2021). Compared to traditional product features, experiences tend to leave more lasting impressions, although their emotional valence can vary (Jhamb et al., 2020; Mostafa & Kasamani, 2021). Businesses must leverage both physical and digital touchpoints to create compelling brand experiences that resonate with consumers (Hwang et al., 2021; Khan et al., 2020).

3. Research Model and Hypothesis

Figure 3 illustrates the research model based on the value framework, focusing on the influence of artificial intelligence (AI) technology on brand attitude, brand experience, and purchase intention. The model integrates the rational action theory, emphasizing that perceived usefulness in e-commerce enhances social media engagement.

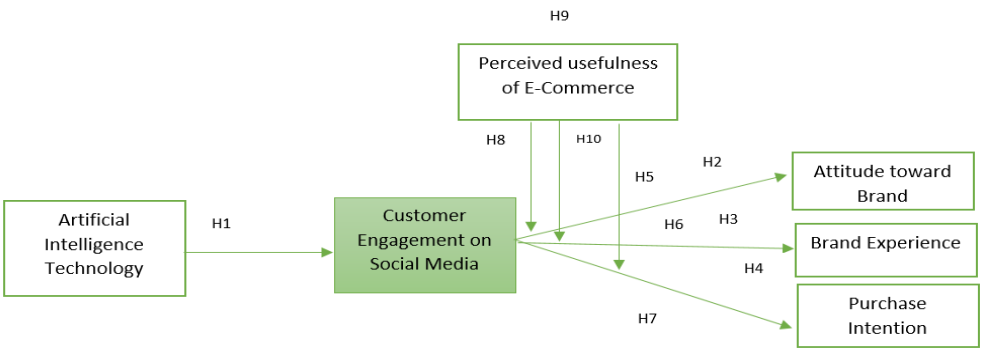

Figure 3: Research Model

AI technology facilitates the identification of themes and emotions in textual data, enabling marketers to understand how customers interact with specific brands (Liao et al., 2023). This technology also enhances the analysis of unstructured and nonverbal data, such as images (Nazir,

Khadim, Ali Asadullah, et al., 2023). AI improves key marketing functions, including content creation, campaign optimization, market segmentation, pattern analysis, and sales forecasting (Hamamoto et al., 2020; Lee & Yoon, 2021). Businesses integrate AI into social media platforms to achieve various objectives, such as increasing customer conversion rates (Li et al., 2021), measuring content effectiveness, evaluating website performance to develop optimal strategies (Gong, 2021), and enhancing search engine rankings (Lee & Yoon, 2021). The incorporation of AI accelerates innovation by digitizing operational processes (Hamamoto et al., 2020). AI also facilitates customer decision-making processes in online interactions with e-commerce platforms, simplifying choices that might otherwise be complex (So et al., 2021). Industry 4.0 technologies, including AI, have shown significant potential in improving customer behavior by enhancing key performance indicators, such as impressions and purchase likelihood (Balio & Casais, 2020; Gong, 2021). Social networking platforms are prominent tools for enhancing interactions between brands and consumers. Businesses often use platforms like Facebook, Instagram, Pinterest, Snapchat, TikTok, and Twitter to engage their customers (Agnihotri, 2020; Hussein & Hassan, 2017; McClure & Seock, 2020). Among these, Facebook has emerged as a primary medium for brand-consumer communication (Ahmadie, 2022; Jatimoyo et al., 2021; Shawky et al., 2020).

H1: Artificial intelligence technology positively influences customer engagement on social media.

The increasing popularity of social media and the widespread adoption of new technologies have significantly transformed relationship marketing (McClure & Seock, 2020). The prevalence of smart devices and high-speed internet has enabled consumers to access brand-related information more efficiently (Bozkurt et al., 2021; Leong et al., 2022). Social media platforms have also empowered customers to express their views and opinions about brands freely through likes, shares, and comments (Hussein & Hassan, 2017). Attitude formation and change have been critical focuses of advertising strategies. Swaying consumer opinions about products or services is often the primary objective of advertisements (Hussein & Hassan, 2017). Attitude shapes an individual's tendency to behave in specific ways and influences whether they perceive an object or brand favorably or unfavorably (De Oliveira Santini et al., 2020; Shawky et al., 2020). Customer attitudes toward brands reflect their general preferences and dislikes, which, while relatively stable, can evolve over time (So et al., 2021). Marketing initiatives, including advertising campaigns, play a key role in shaping these attitudes by providing new experiences and associations (Bilro et al., 2022; Vinerean & Opreana, 2021). Campaigns often evoke specific emotional or cognitive responses, influencing customer perceptions during particular interactions (Khan, 2022; Leong et al., 2022). These campaigns convey symbolic and experiential value, which impacts consumers' attitudes toward brands (Lim & Rasul, 2022; Shawky et al., 2020).

H2: Customer engagement on social media (CESM) directly influences attitudes toward a brand.

Social media customer engagement has gained significant attention from both academics and industry professionals in recent years (Leong et al., 2022). This focus aligns with the advancements in tools and technologies introduced by web 2.0, including platforms such as Facebook, Twitter, Wikis, Blogs, Microblogging, and Second Life (Bozkurt et al., 2021). These platforms have expanded opportunities for businesses to interact with customers, fostering greater participation in advertising initiatives. Social media’s interactive features enable businesses to involve customers more actively in content creation and value addition to their marketing efforts, enhancing customer service and responsiveness to consumer needs (So et al., 2021; Wang et al., 2021). Organizations prioritizing customer engagement demonstrate stronger client loyalty, maintain consumer trust, and emphasize customer retention (McClure & Seock, 2020). Engaged consumers are more likely to share positive brand experiences, enhancing overall satisfaction levels (Hussein & Hassan, 2017; Vinerean & Opreana, 2021). Psychological theories suggest that interpersonal relationships significantly shape individual experiences and influence cognitive processes (Pallant et al., 2022; Yuanita & Marsasi,

2022). In consumer-brand relationships, satisfaction acts as a cognitive element. Positive evaluations of products or services often emerge from dynamic and interactive engagements (Yuanita & Marsasi, 2022). Customer engagement strengthens the foundational principles of relationship marketing by improving customer attraction and retention, which directly impacts brand experience (Pina & Dias, 2021). Within the framework of service-dominant logic, customer engagement reflects interactions among various entities (businesses, consumers, stakeholders) forming "value configurations" that collaborate within a network to co-create interactive and shared value (Balio & Casais, 2020; De Oliveira Santini et al., 2020; Shawky et al., 2020). The concept of "interactive experience" is identified as a critical element of customer engagement (Hussein & Hassan, 2017).

H3: Customer engagement on social media (CESM) directly influences brand experience.

Social media platforms facilitate information sharing among users and between users and companies. This functionality has significantly enhanced consumer interaction (Sedra & El Bayed, 2022). For example, many hotels leverage their social media presence to provide interactive content to patrons via website links that redirect users to relevant Facebook pages. Guests engage with these pages by exploring visual content, such as photos and videos of the hotels. Similarly, brands utilize social media platforms to display visual elements like images and videos, encouraging users to interact with the content (Joshi & Garg, 2021). Guests can also share their experiences by posting comments, uploading photos, and reading reviews on these platforms. This dynamic exchange of information not only enhances user engagement but also provides valuable feedback for brands. The relationship between purchase intention and decision-making reflects consumers' likelihood, willingness, or intention to purchase specific brands (Mostafa & Kasamani, 2021). Previous studies highlight the positive influence of social media on purchase intentions, demonstrating how these platforms effectively support marketing strategies (Agnihotri, 2020).

H4: Customer engagement on social media (CESM) directly influences purchase intention.

Engaging customers requires innovative strategies, consistent updates, participation incentives, and relevant information. (Agnihotri, 2020). Research suggests that content plays a more significant role in driving customer engagement than merely focusing on relationships (De Oliveira Santini et al., 2020). Positive interactions on social media platforms encourage customers to return and actively engage through blogging, commenting, and brand advocacy. This study aims to analyze the antecedents of social media customer involvement and assess its implications for businesses leveraging AI in marketing. AI has transformed consumer behavior and enhanced online purchasing experiences by offering personalized interactions on social media platforms (Lee & Yoon, 2021; Wang et al., 2019). By predicting consumer behavior and integrating AI tools into online marketing strategies, businesses can provide tailored solutions, enhance customer interactions, and enable informed decision-making (Gong, 2021; Lee & Yoon, 2021). AI bridges the gap between businesses and consumers by collecting and analyzing data on goods and services, leading to more informed purchasing decisions (Hamamoto et al., 2020; So et al., 2021). AI also addresses challenges related to social media management. Excessive data from social platforms can overwhelm sales staff, but AI-based solutions like predictive marketing analytics and automated data mining tools offer effective resolutions (Nazir, Khadim, Ali Asadullah, et al., 2023). Attitudes significantly influence consumer behavior. Positive brand attitudes increase the likelihood of product use, while less favorable attitudes reduce it (Jhamb et al., 2020; Khan, 2022). Consumers perceive brands more favorably when they find AI applications relevant to their needs (Elouali et al., 2020). Some studies indicate that social media provides a more accurate reflection of consumer opinions about brands than traditional media (Nawaz & Kaldeen, 2020; Wicaksono & Maharani, 2020). Moreover, the level of customer interaction on social media correlates positively with attitudes toward brands (Li et al., 2021; Nazir, Khadim, Ali Asadullah, et al., 2023).

H5: Customer engagement on social media (CESM) mediates the relationship between AI technology and attitudes toward brands.

Social networking sites provide interactive features that facilitate the sharing of positive and negative brand experiences (Jhamb et al., 2020). Integrated social media channels on brand websites enhance social satisfaction and improve consumer interactions (Elouali et al., 2020). Social media platforms like Facebook play a critical role in engagement, with frequent usage fostering increased interaction and connection among users (Khan, 2022). Social interaction is a significant factor in shaping affective and behavioral outcomes, including attitudes and decision-making processes (Joshi & Garg, 2021; Mostafa & Kasamani, 2021). While traditional channels such as TV advertising, public relations, personal selling, and sales promotions remain important, online channels like corporate websites and social media platforms have gained prominence in building brand experiences. These channels should be an integral part of the marketing communication mix to optimize consumer interactions (Pallant et al., 2022; Shukla et al., 2022). Personalized digital content across various online platforms strengthens relationships between brands and consumers (Yuanita & Marsasi, 2022). Customer engagement on social media shapes brand experiences through a combination of stimulatory, behavioral, emotional, and intellectual interactions (Akoglu & Özbek, 2022). Engaging marketing content, eye-catching product visuals, brand endorsements, and user-generated content are all instrumental in creating a rich brand experience (Agnihotri, 2020; Chin et al., 2020). The integration of AI in social media enhances engagement by offering consumers the ability to compare product or service attributes effectively, thus increasing interaction and connection with brands (De Oliveira Santini et al., 2020; Vinerean & Opreana, 2021).

H6: Customer engagement on social media (CESM) mediates the relationship between AI technology and brand experience.

Consumer interaction on social media has been linked to an increase in purchase intention (McClure & Seock, 2020). Purchase intention reflects the likelihood of a consumer making a future purchase (Peña-García et al., 2020; Zhuang et al., 2021). This concept is closely tied to consumers' preferences for specific brands and products (Kim et al., 2011). It is influenced not only by consumer ratings of products but also by external stimuli, including social media interactions and website content (Li & Peng, 2021). Purchase intention has been widely used to assess a brand's potential for future earnings, as it reflects a consumer's willingness to engage in behaviors related to future consumption (Rausch & Kopplin, 2021). The link between brand preference and purchase intention is well-established (Syaharani & Yasa, 2022). Social media platforms allow businesses to reach a diverse consumer base and tailor their offerings to individual needs. As a result, understanding consumer purchasing behavior on social media becomes crucial for enhancing the effectiveness of digital marketing strategies. AI can be employed by businesses to increase user engagement and conversion rates on social media platforms (Khan et al., 2020). AI-driven campaigns can strengthen the relationship between consumers and companies by encouraging interaction, feedback, and ultimately, conversions (Iriani & Andjarwati, 2020). Additionally, AI enhances the interaction between users and social media marketing, which in turn can stimulate consumers' intention to purchase products or services (Jhamb et al., 2020; Mican et al., 2020; Peña-García et al., 2020).

H7: Customer engagement on social media mediates the relationship between AI technology and purchase intention.

Perceived usefulness of e-commerce has been analyzed from multiple perspectives, often influenced by individuals' prior experiences (Cabrera-Sánchez et al., 2020). Some studies suggest that actions remain consistent between novice and experienced users, while others emphasize that as users become more adept with IT or proficient as e-customers, the perceived usefulness of e-commerce becomes increasingly significant (Chin et al., 2020; Mican et al., 2020). For novice users, the relationship between perceived usefulness and behavior appears stronger, while for experienced users, perceived usefulness demonstrates a greater influence on attitude (Chin et al., 2020). Repeated online

purchases in e-commerce settings indicate that as customers gain more experience, the role of perceived utility in shaping attitudes becomes more prominent. Customer engagement represents an essential factor in building meaningful relationships between brands and their consumers. Engaged customers, who actively participate in and respond to brand communications, contribute to stronger psychological states, enhancing brand relationships and fostering enduring connections (Kawasaki et al., 2022; Vinerean & Opreana, 2021; Wang et al., 2021). In online environments, engagement correlates with behaviors such as repeat purchases (Agnihotri, 2020; Cabrera-Sánchez et al., 2020; Kedah, 2023). Despite its importance, perceived usefulness of e-commerce has received limited attention as a moderating factor in these dynamics (Cabrera-Sánchez et al., 2020; Kedah, 2023; Li & Wang, 2023).

H8: Perceived usefulness of e-commerce moderates the relationship between customer engagement on social media (CESM) and attitude toward the brand.

Customer engagement significantly influences decision-making during purchases and shapes interactions with businesses (McClure & Seock, 2020). Consumers with lower engagement levels demonstrate limited interest in a brand's offerings, while higher engagement levels correlate with greater interest and involvement (Wang et al., 2021). Enhanced engagement contributes to higher satisfaction with the brand, with consumers experiencing emotions such as pride, passion, and confidence, ultimately identifying as active participants in the brand's community (Bilro et al., 2022; Khan, 2022). These emotional connections can affect perceptions and expectations of the brand. Engaged customers often share and comment on a brand’s social media posts, reflecting their active participation in the brand's online presence (Jatimoyo et al., 2021; So et al., 2021). The growth of e-commerce is driven not only by the rising number of online businesses and consumers but also by the repeated patronage of loyal customers who return to preferred businesses for goods and services. This loyalty mindset is a key factor in sustaining and advancing e-commerce enterprises, enhancing their influence across the industry (Mican et al., 2020). Perceived usefulness of e-commerce plays a pivotal role in influencing user behavior, system adoption, and continued use. A technology is deemed successful if it fulfills consumers’ expectations for utility. The perception of usefulness is grounded in the belief that utilizing the system enhances functionality (Kawasaki et al., 2022). This factor is integral to the decision-making process for online shoppers (Kedah, 2023) and positively shapes attitudes and intentions regarding e-commerce shopping experiences (Cabrera-Sánchez et al., 2020; Li & Wang, 2023; Wang et al., 2021).

H9: Perceived usefulness of e-commerce moderates the relationship between customer engagement on social media (CESM) and brand experience.

In social commerce, customers often rely on external cues like detailed product information due to their inability to directly assess environmental factors (Mican et al., 2020). Information that is perceived as useful significantly influences purchase decisions, as consumers tend to consider such information when choosing products. Studies consistently show that perceived usefulness positively affects purchase intention (Kawasaki et al., 2022; Kedah, 2023; Vinerean & Opreana, 2021; Wang et al., 2021). Research on the relationship between perceived usefulness of e-commerce and purchase intention indicates that consumers are more likely to engage with and purchase products if the provided information aligns with their needs and expectations. The perceived usefulness of e-commerce remains a central construct in the acceptance of technology in information systems (Kedah, 2023). Perceived usefulness reflects an individual's confidence that using a specific tool or platform will enhance their performance (Mican et al., 2020). In the context of e-commerce, it represents the belief that internet-based shopping can improve the overall shopping experience (Chin et al., 2020). The growing importance of customer interaction in online business models further emphasizes the connection between perceived usefulness and purchase intention (Cabrera-Sánchez et al., 2020). Customer engagement has been identified as a critical factor in shaping purchase intentions (Wang et al., 2021). The current study aims to explore how the perceived usefulness of e-commerce moderates the

relationship between customer engagement on social media (CESM) and purchase intention.

H10: Perceived usefulness of e-commerce moderates the relationship between customer engagement on social media (CESM) and purchase intention.

4. Methodology

Data collection was carried out using an online survey to gather insights from respondents.

4.1. Research Context

The study focused on Moroccan brands, with respondents comprising employees of these organizations. The target population was employees of Moroccan brands, but access to specific contact information was challenging. Consequently, an online survey approach facilitated by internet connectivity was adopted. A reference-based snowball sampling method was utilized to enhance the response rate. Morocco's economic landscape reflects significant disparities. Rankings placed Morocco at 124th out of 177 countries in 2005, 130th out of 186 countries in 2015, and 130th out of 187 countries in 2020, with minimal improvement over time. Poverty rates remained high, with 9% of the population below the poverty line. Despite economic inequality, Casablanca, particularly Morocco Mall, serves as the focal point for luxury retail (Paschina, 2023; Sedra & El Bayed, 2022). This center offers access to prestigious brands like Ralph Lauren, Rolex, Louis Vuitton, Dior, Gucci, Prada, and Fendi (Hamelin & Thaichon, 2016; Paschina, 2023). High-income Moroccan women, in particular, demonstrate a preference for staying abreast of global luxury trends and differentiate themselves by purchasing high-end products (Paschina, 2023).

4.2. Instrument Development

Pre-existing validated scales were adapted to align with the objectives of this study, which examined artificial intelligence technology, social media consumer engagement, and the perceived benefits of e-commerce on brand attitude, experience, and purchase intention. The survey instrument underwent validation by researchers. Initially created in English, the survey was translated into Arabic, with discrepancies resolved before distribution. Responses were recorded using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Details of the survey instrument and its sources are provided in Appendix A.

4.3. Data Collection

The study targeted 370 employees of Moroccan brands through random selection. Invitations to complete the survey, hosted on Google Forms, were shared with brand managers who facilitated participation. Managers and owners of the brands also reviewed the invitation. Data collection occurred between July 2024 and August 2024. Out of 370 invitations, 322 completed questionnaires were deemed valid for analysis. Demographics of respondents revealed:

- Gender: Males constituted 64.0%, while females accounted for 35.9%.
- Qualification: Primary/secondary education (37.5%), college (34.3%), university (15.6%), and others (12.5%).
- Age: 20–30 years (39.1%), less than 20 years (28.1%), 30–40 years (21.8%), and more than 40 years (11.0%).
- Experience: 2–6 years (46.2%), less than 2 years (28.1%), and more than 6 years (25.6%).

To evaluate non-response bias, early and late respondents were compared. T-tests revealed no

significant differences ($p < 0.01$) between the two groups in terms of age.

Table 1: Descriptive Statistics of Respondents Profile

Category	Items	Frequencies	Percentage
Gender	Male	205	64.0
	Female	115	35.9
Qualification	Primary/Secondary Schools	120	37.5
	Colleges	110	34.3
	Universities	50	15.6
	Others	40	12.5
Age	Less than 20 Years	90	28.1
	20-30 Years	125	39.1
	30-40 Years	70	21.8
	More than 40 Years	35	11.0
Experience	Less than 2 Years	90	28.1
	2-6 Years	148	46.2
	More than 6 Years	82	25.6
Total		320	100.0

5. Data Analysis and Results

5.1. Instrument Validity

Data analysis was0020 conducted using SmartPLS 3.0 to ensure the validity and reliability of the survey instrument. Initially, uni-dimensionality was examined to confirm that each assessment item measured a single underlying construct. All items were retained. Convergent and discriminant validity tests were performed to assess the instrument's quality. Convergent validity was evaluated by examining the average variance extracted (AVE), Cronbach's alpha, composite reliability (CR), and standardized path loadings. Factor analysis using SmartPLS indicated that all standardized path loadings exceeded 0.7 and were significant (t-value > 1.96). Cronbach's alpha and composite reliability values for all constructs were above the minimum threshold of 0.7, confirming internal consistency. The AVE for each construct also exceeded 0.5, supporting convergent validity (Hair et al., 2024). Reliability and internal consistency metrics were as follows: CR ranged from 0.838 to 0.929, while Cronbach's alpha values ranged from 0.707 to 0.913. The AVE values for all constructs varied between 0.532 and 0.806, exceeding the required minimum of 0.5, affirming that the constructs met the criteria for convergent validity.

Table 2: Instrument of Convergent Validity Test

Item	Factor Loadings	CR	AVE	Alpha
AIT1	0.799	0.929	0.623	0.913
AIT2	0.801			
AIT3	0.764			
AIT4	0.792			
AIT5	0.796			
AIT6	0.814			
AIT7	0.822			
AIT8	0.721			
ATB1	0.859	0.926	0.806	0.879
ATB2	0.933			

ATB3	0.900			
BE1	0.706	0.920	0.537	0.903
BE2	0.774			
BE3	0.712			
BE4	0.680			
BE5	0.641			
BE6	0.804			
BE7	0.813			
BE8	0.798			
BE9	0.748			
BE10	0.620			
CESM1	0.712	0.886	0.532	0.849
CESM2	0.793			
CESM3	0.847			
CESM4	0.754			
CESM5	0.805			
CESM6	0.570			
CESM7	0.575			
PI1	0.889	0.921	0.795	0.872
PI2	0.900			
PI3	0.886			
PUEC1	0.880	0.838	0.634	0.707
PUEC2	0.746			
PUEC3	0.756			

Discriminant validity was assessed by comparing the square root of the AVE for each construct with its correlations with other constructs. All constructs met the criteria for discriminant validity, as shown in Table 3, where the AVE values were greater than the inter-construct correlations

Table 3: Discriminant Validity, Mean and Standard Deviation

	Mean	SD	AIT	ATB	BE	CESM	PUEC	PI
Artificial Intelligence Technology	3.28	1.27	0.789					
Attitude toward Brand	4.43	1.46	0.709	0.898				
Brand Experience	3.10	1.24	0.707	0.667	0.732			
Customer Engagement on Social Media	3.23	1.13	0.650	0.696	0.780	0.730		
Perceived usefulness of E-Commerce	3.83	1.31	0.476	0.570	0.621	0.677	0.796	
Purchase Intention	1.97	1.37	0.683	0.710	0.699	0.669	0.518	0.892

5.2. Hypothesis Testing

Hypotheses were tested using the bootstrapping technique with 5000 resamples to assess path coefficients and their significance levels.

- AI Technology and Social Media Engagement: AI technology negatively influenced social media consumer engagement ($\beta = -0.650$, $p < 0.000$), confirming H1.

- Social Media Engagement and Brand Experience, Attitude, Purchase Intention: Social media engagement positively affected brand experience ($\beta = 0.710$, $p < 0.000$), attitude toward the brand ($\beta = 0.535$, $p < 0.000$), and purchase intention ($\beta = 0.605$, $p < 0.000$), supporting H2, H3, and H4.

Mediation analysis revealed negative mediating effects of social media engagement between AI technology and brand attitude ($\beta = -0.348$, $p < 0.000$), brand experience ($\beta = -0.461$, $p < 0.000$), and purchase intention ($\beta = -0.393$, $p < 0.000$), supporting H5, H6, and H7. Moderation analysis showed that perceived usefulness of e-commerce moderated the relationships between social media engagement and brand attitude ($\beta = 0.120$, $p < 0.001$), brand experience ($\beta = -0.143$, $p < 0.007$), and purchase intention ($\beta = -0.152$, $p < 0.008$), confirming H8, H9, and H10.

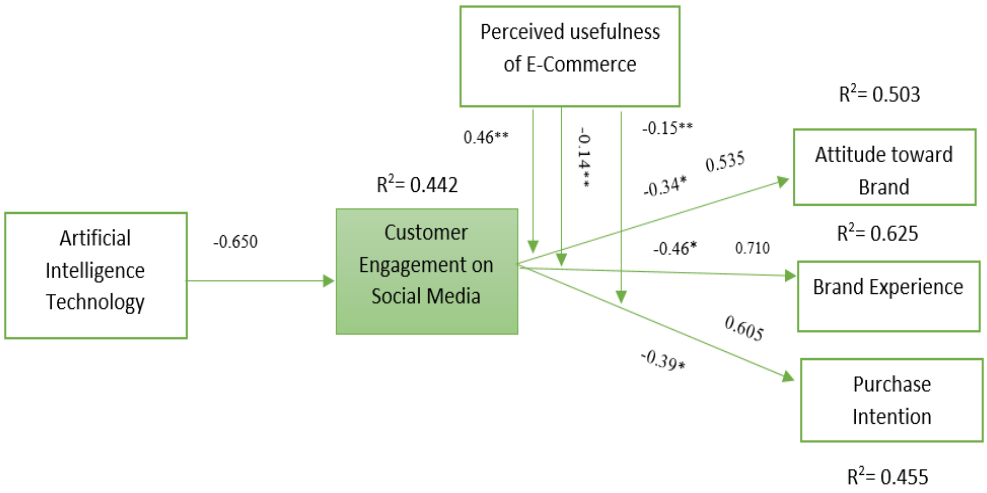

Figure 4: Testing Results. (paths marked with * for mediation and ** for moderation effects).

6. Discussion and Implications

6.1. Discussion of Findings

This study highlights the role of AI technology, customer engagement on social media, and the perceived usefulness of e-commerce in shaping brand experience, attitude, and purchase intention.

6.1.1. AI technology and social media engagement

The findings demonstrate that AI technology significantly influences customer engagement on social media. Businesses integrating AI into their social media campaigns achieve higher customer interaction and conversion rates. This suggests that leveraging AI-based tools can optimize marketing efforts, transitioning traditional business models to digital platforms and attracting traffic that converts into loyal customers. This alignment of AI technology with social media engagement contributes to increased sales volumes by enhancing consumer interaction online (Nazir, Khadim, Ali Asadullah, et al., 2023).

6.1.2. Customer engagement and its outcomes

The results also confirm that customer engagement on social media positively impacts brand experience, attitude, and purchase intention. This study enriches our understanding of how consumers interact with brands on social platforms by providing an empirically supported framework to measure

engagement. Research highlights that social media interactions, informed by past and present user behaviors, attitudes, and perspectives, significantly influence engagement levels (Bozkurt et al., 2021; De Oliveira Santini et al., 2020). Furthermore, recent studies emphasize the complexity of modern social media interactions, involving multiple stakeholders such as customers, organizations, and broader communities (So et al., 2021; Vinerean & Opreana, 2021). Customer engagement is now understood as a complex network of concurrent activities involving multiple actors, (Lim & Rasul, 2022). Positive engagement develops strong brand affinity and loyalty, validating that brand attitude and experience are crucial for meaningful social media participation.

6.1.3. Mediating effects of social media engagement

The analysis revealed significant mediating effects of customer engagement on the relationships between AI technology and brand attitude, experience, and purchase intention. These results indicate that AI technology enhances marketers' ability to connect with potential customers effectively, promoting products and services while fostering stronger brand experiences and attitudes (Vinerean & Opreana, 2021). Active social media users are more likely to report favorable experiences, supporting the link between social media participation and purchase decisions (Bozkurt et al., 2021).

6.1.4. Moderating role of perceived usefulness of e-commerce

The study further demonstrates that the perceived usefulness of e-commerce moderates the relationships between customer engagement and brand attitude, experience, and purchase intention. When consumers perceive e-commerce as valuable and convenient, they are more likely to interact positively with brands and consider purchases (Pina & Dias, 2021). Optimizing digital platform usability and functionality enhances these outcomes, as indicated by prior research (Mican et al., 2020).

6.1.5. Study limitations and recommendations

Several limitations were identified. The small sample size and use of snowball sampling may limit generalizability; future studies could address this by employing larger, randomly selected samples. Additionally, the study focused solely on Moroccan brands accessed via websites, limiting its applicability to other contexts. Future research could include cross-cultural studies to compare consumer behavior across industries and regions. Sociodemographic factors such as age, gender, and education should also be explored as moderating variables. Furthermore, qualitative methods, such as interviews with industry professionals, could provide deeper insights into the practical implications of social media engagement strategies.

6.2. Implications for Research and Practice

This study has significant implications for both academia and industry. It makes an initial theoretical contribution by employing action-based theory to understand customer engagement in the context of AI-enabled tools. These tools allow companies to assess the importance of various characteristics of their products and services based on customer interactions on social media. The increased use of social media platforms has transformed them into key channels for engaging with consumers, promoting products, and building brand awareness. AI tools play a critical role in analyzing and tracking user behavior on social media, enhancing customer engagement strategies. By integrating AI technology with consumer behavior insights, organizations can improve brand experience, attitudes, and purchase intentions. E-commerce strategies must consider the utility of AI and social media platforms in driving meaningful customer interactions and fostering engagement. This study highlights the potential of AI to enhance social media platforms' ability to attract new customers, particularly for Moroccan brands, by automating and refining data processing for tailored services. Despite these advancements, challenges persist in bridging communication gaps between

enterprises and employees regarding the use of real-time data for customer outreach. This gap underscores the need for a deeper understanding of how AI-enabled automated company responses can influence customer engagement on social media. Additionally, the study emphasizes the cultural and social implications of social media usage, as same citation (So et al., 2021), and addresses challenges related to brand experience, attitudes, and purchase intentions. Ultimately, the findings suggest that leveraging AI technology to optimize social media interactions can significantly enhance Moroccan brands' ability to engage with customers and build stronger connections.

7. Conclusion

Artificial intelligence technology represents a transformative tool for enhancing brand attitude, experience, and purchase intention. Understanding the role of AI in these areas is essential, particularly in conjunction with the perceived usefulness of e-commerce. Despite its importance, there is limited clarity on how employees and consumers align their behaviors and preferences with these outcomes. This study developed a conceptual framework incorporating perceived e-commerce usefulness and AI's impact on consumer engagement. Findings confirmed that customer engagement serves as a mediating factor in the relationship between AI technology and brand-related outcomes. The results underscore the importance of integrating AI solutions and optimizing e-commerce strategies to strengthen brand experience, attitude, and purchase intention.

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Appendix

Variables	Items	Source
Artificial Intelligence Technology	1. Artificial intelligence applications in social media marketing are useful for the audience, image, and sentiment analysis 2. AR (augmented reality) and VR (virtual reality) are used in social media marketing. 3. Audience analysis is a fundamental pillar of social media marketing strategies adopted by firms 4. Artificial intelligence technologies use multiple types of customer related data, such as purchases, sales, or behavioral and demographic data 5. Artificial intelligence tools for brand logo recognition open avenues to analyze social media users' interests 6. The employment of automatic image annotation tools may lead to many possible benefits, even for user expectations in social media marketing 7. Artificial intelligence techniques lead to classifications and clusters of user-generated content based on variables such as tone, sentiment, or topic 8. Through the sharing of images, users can also express their sentiments, and therefore, social media images can offer a rich and useful resource to identify and value users' sentiment	(Nazir, Khadim, Ali Asadullah, et al., 2023)
Customer Engagement On Social Media	1. Using social media websites (Facebook, Instagram, Twitter) gets me to think about it 2. I think about social media websites a lot when I am using them 3. Using social media websites stimulates my interest to learn more about brands 4. I feel very positive when I use social media websites 5. Using social media websites makes me happy 6. I feel good when I use social media websites 7. I am proud to use social media websites	(De Oliveira Santini et al., 2020)
Perceived Usefulness of E-Commerce	1. Using the Internet to acquire a product would permit me to purchase more efficiently 2. Using the Internet to acquire a product would permit me to purchase more quickly 3. Using the Internet to acquire a product would be useful to make my purchases	(Li & Wang, 2023)
Attitude Toward Brand	1. Attitude toward X brand: bad/good. 2. Attitude toward X brand: unfavorable/favorable. 3. Attitude toward X brand: negative/positive	(Nazir, Khadim, Ali Asadullah, et al., 2023)
Brand Experience	1. X brand makes a strong impression on my visual sense or other senses 2. I find X brand interesting in a sensory way 3. X brand induces my feelings and sentiments 4. I have strong emotions for X brand 5. X brand is an emotional brand 6. X brand results in bodily experiences 7. X brand is action oriented 8. I engage in a lot of thinking when I encounter X brand 9. X brand makes me think 10. X brand stimulates my curiosity	(Nazir, Khadim, Asadullah, et al., 2023)

Purchase Intention	1. I intend to continue booking a hotel from the website I regularly use 2. I intend to recommend the website that I regularly use to people around me 3. I intend to use the website that I regularly use as the priority online hotel booking for future purchases	(Kim et al., 2011)