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FACEBOOK INTEGRATION AND CUSTOMER SATISFACTION: INSIGHTS INTO DIGITAL MARKETING STRATEGIES

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Abstract: *This study aims to analyze the relationship between Facebook integration and customer satisfaction within the context of e-commerce. The research explores the contributions of key integration dimensions, including personalized offers, ease of navigation, and user interaction, in enhancing customer experience. A quantitative methodology was employed, utilizing both electronic and paper-based surveys to collect data from 348 participants. Statistical tools such as correlation and regression analysis were applied to evaluate the data.*

The findings reveal that "personalized offers" had the strongest relationship with customer satisfaction, followed by "ease of navigation," while "user interaction" showed a relatively limited association. Collectively, these dimensions accounted for 44.7% of the variance in customer satisfaction. The study recommends that companies invest in improving their digital strategies by optimizing personalized offers, enhancing navigation experiences through user-friendly interfaces, and fostering customer interaction through innovative tools such as interactive chatbots.

By addressing a critical knowledge gap, this research underscores the pivotal role of social media integration in customer satisfaction and offers a practical framework applicable in various business contexts.

Keywords: *Social Media; Digital Marketing; Customer Satisfaction; Facebook Platform; E-Commerce.*

JEL Classification: *M31; L81; D12.*

1. INTRODUCTION

In the era of digital transformation, social media has become a primary tool for businesses to engage with their customers. Platforms like Facebook are recognized as

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innovative channels for digital marketing, combining extensive reach, user-friendliness, and content personalization to meet diverse customer needs. Social media platforms act as key drivers of change in traditional marketing strategies, offering exceptional opportunities to build long-term customer relationships (Dwivedi et al., 2021).

Facebook's position as a leading marketing platform stems from its advanced technical and interactive features, such as targeted advertisements, integrated stores, and customer data analytics. These tools make Facebook a central channel for enhancing customer experience and satisfaction. Furthermore, direct interaction with customers through the platform fosters trust and improves customer loyalty. Social media platforms significantly contribute to trust-building and loyalty through continuous interaction (Kaplan & Haenlein, 2010; Mangold & Faulds, 2009). Despite the growing importance of Facebook integration in digital marketing, there remain research gaps in understanding its association with customer satisfaction, particularly within the e-commerce context. (Chaffey & Smith, 2022) emphasize that delivering personalized content tailored to individual customer preferences can positively influence purchasing behavior by increasing perceived relevance and engagement, which in turn strengthens customer trust and loyalty intentions.

This study seeks to analyze the relationship between Facebook integration and customer satisfaction, focusing on how various integration dimensions affect customer experience and purchasing behavior. By doing so, the study aims to shed light on Facebook's role as a critical tool for improving customer engagement and satisfaction within the e-commerce sector.

1.1. Research Problem

Amid rapid digital transformation, social media has emerged as a key tool for strengthening relationships between businesses and their customers. Among these platforms, Facebook stands out for its ability to combine personalization and user-friendliness to meet customer needs. However, the understanding of how Facebook integration is related to customer satisfaction remains incomplete, especially in the e-commerce context.

As Facebook's role as a primary marketing tool continues to expand, a key research question emerges: To what extent is Facebook integration – with its various dimensions – associated with customer satisfaction in the e-commerce context?

1.2. Research Objectives

This study aims to analyze the relationship between Facebook integration and customer satisfaction within the e-commerce sector. The specific objectives include:

- Examine the relationship between Facebook integration and customer satisfaction;
- Develop a model showcasing how businesses can use social media integration to explain variations in customer satisfaction;
- Provide practical recommendations for leveraging Facebook in digital marketing strategies;
- Present a holistic approach to refining marketing strategies, supporting customer loyalty, and contributing to competitive advantage.

To better understand the relationship between Facebook integration and customer satisfaction, the study will review the theoretical framework highlighting the dimensions under investigation and positioning them within the context of previous literature.

1.3. Structure of the Paper

The remainder of this paper is structured into six main sections. Section 2 presents a literature review and theoretical background, highlighting key dimensions of Facebook integration and customer satisfaction, and situates the current study within the existing research. Section 3 describes the research methodology, including the research design, data collection procedures, measurement instruments, and sampling strategy. Section 4 presents the results of descriptive and inferential statistical analyses, including correlation and regression models. Section 5 discusses the findings, considering existing literature and emphasizing theoretical implications and practical applications. Section 6 concludes the paper by summarizing key insights, outlining limitations, and offering directions for future research.

2. LITERATURE REVIEW

The integration of Facebook with e-commerce platforms is crucial in the digital age, enhancing interactions between businesses and customers through personalized content and instant communication (Chaffey & Smith, 2022; Dwivedi et al., 2021). Facebook stands out due to its wide adoption and advanced features that enable businesses to deliver personalized offers, streamline product access, and foster customer loyalty (Alalwan et al., 2017; Bok, 2023).

Prior studies have highlighted the importance of personalization, navigation ease, and user engagement in improving customer satisfaction. For example, (Huang & Rust, 2021) emphasized that tailored offers significantly increase customer appreciation and loyalty, while (Gefen et al., 2003) demonstrated that intuitive

navigation boosts trust and purchasing decisions. Additionally, (Kaplan & Haenlein, 2010) highlighted user interaction as a cornerstone for fostering brand loyalty and enhancing customer experiences.

However, previous research has often examined these dimensions in isolation, lacking a comprehensive approach to understanding their combined relationship. (Dabholkar & Sheng, 2012) suggested that integrating these dimensions holistically may enhance their relevance to customer satisfaction and purchasing behavior. This study addresses this gap by exploring the joint associations of navigation, personalization, and interaction with customer satisfaction within the Facebook e-commerce ecosystem.

2.1. Social Media Platform Integration

Activities enhance customer experience by providing interactive channels for seamless product access, facilitating brand-customer interactions, and delivering personalized offers aligned with customer preferences.

In the era of digital transformation, such integration bridges traditional and digital marketing to improve customer satisfaction. Facebook, for example, offers technical tools that enable businesses to create streamlined shopping experiences, fostering long-term relationships with customers (Kaplan & Haenlein, 2010). Social media platforms also play a critical role in enhancing customer loyalty and satisfaction by supporting direct interaction with brands (Mangold & Faulds, 2009) and gaining a competitive advantage through improved customer experiences and informed purchasing decisions (Chaffey & Smith, 2022).

This study examines three key dimensions of social media platform integration – ease of navigation, personalized offers, and user interaction – that form the foundation for enhancing customer experience and satisfaction.

2.1.1. Ease of Navigation

This dimension refers to technical features enabling seamless navigation between social media and e-commerce platforms. Enhancing navigation boosts trust and comfort (Gefen et al., 2003), while simple, user-friendly interfaces improve interaction and satisfaction (Yang et al., 2022). For example, Facebook stores simplify searches with categorized lists and direct purchase links.

Ease of navigation reflects the clarity, simplicity, and organization of the platforminterface, enabling users to access information and make decisions efficiently (Gefen et al., 2003). Prior studies have shown that user-friendly platforms improve trust

and ease of use, which in turn supports customer satisfaction (Davis, 1989; Parasuraman et al., 1988).

H2a: Ease of navigation (x_1) is positively associated with purchase decisions (y_1).

H2b: Ease of navigation (x_1) is positively associated with service experience (y_2).

H2c: Ease of navigation (x_1) is positively associated with loyalty intentions (y_3).

2.1.2. Personalized Offers

Personalized offers leverage customer data to provide targeted promotions that align with individual needs. (Huang & Rust, 2021) noted that personalization enhances product appeal and customer appreciation. (Chandra et al., 2022) found that tailored offers reduce decision-making fatigue and increase satisfaction, while (Rodrigues, 2021) demonstrated their role in fostering brand loyalty and repeat purchases. Leading brands utilize personalization technologies to align product recommendations with user preferences and purchase histories.

Personalized offers involve adapting product or service promotions based on customer behavior, preferences, or purchase history. Research confirms that personalization strengthens emotional connection and loyalty (Chaffey & Smith, 2022; Huang & Rust, 2021).

H3a: Personalized offers (x_2) are positively associated with purchase decisions (y_1).

H3b: Personalized offers (x_2) are positively associated with service experience (y_2).

H3c: Personalized offers (x_2) are positively associated with loyalty intentions (y_3).

2.1.3. User Interaction

User interaction emphasizes social and psychological engagement, allowing customers to share opinions and receive immediate responses. (Kaplan & Haenlein, 2010) argued that continuous interaction strengthens sustainable customer-brand relationships. (Ye et al., 2023) demonstrated how live streaming improves customer loyalty by enhancing functional, social, and recreational values. For example, chatbots facilitate instant responses, enriching the overall interaction experience.

User interaction includes two-way communication, responsiveness, and platform tools enabling dialogue. Studies suggest interaction fosters engagement, trust, and brand affiliation (Mangold & Faulds, 2009; Kaplan & Haenlein, 2010).

H4a: User interaction (x_3) is positively associated with purchase decisions (y_1).

H4b: User interaction (x_3) is positively associated with service experience (y_2).

H4c: User interaction (x_3) is positively associated with loyalty intentions (y_3).

These three dimensions were chosen to represent the variable of social media platform integration because they reflect the core pillars that improve customer experience and satisfaction. Ease of navigation ensures a seamless and convenient shopping experience, increasing customers' comfort and confidence in the platform (Gefen et al., 2003). Personalized offers highlight the platform's ability to utilize personal data to deliver targeted promotions that meet individual customer needs, increasing appeal and appreciation (Huang & Rust, 2021; Pappas et al., 2016). User interaction serves as the cornerstone for building sustainable relationships between brands and customers, where continuous engagement enhances customer satisfaction and loyalty (Kaplan & Haenlein, 2010).

Since these three dimensions play pivotal roles in shaping the customer experience, analyzing their relationship with customer satisfaction is essential for understanding the dynamics of the core variables in this study.

2.2. Customer Satisfaction and Its Importance in E-Commerce

Customer satisfaction reflects the alignment between customers' expectations and their actual experience when using a product or service. It is a critical metric for business success, influencing loyalty, repeat purchases, and competitive advantage. In e-commerce, satisfied customers are more likely to recommend the online store and remain loyal, which drives financial performance and market share growth (Oliver, 1997; Zeithaml et al., 1996).

This study examines three key dimensions of customer satisfaction that represent critical stages in the customer journey:

2.2.1. Purchase Decisions

This dimension represents the initial stage of the customer journey, during which social media platforms are associated with purchasing behavior in various ways:

- **User reviews and recommendations:** may be linked to increased product trust and a higher likelihood of purchase (Cheung & Thadani, 2012);
- **Targeted promotional offers:** Delivering personalized content based on customer behavior (Huang & Rust, 2021);
- **Customer-brand interaction:** Building trust through direct communication, encouraging positive purchase decisions (Bok, 2023).

2.2.2. Service Experience

Service experience pertains to the quality of interaction with the online store, including customer support responsiveness, ease of use, and product quality. Positive experiences build trust and loyalty, increasing the likelihood of repeat purchases, while negative experiences can lead to customer attrition (Parasuraman et al., 1988; Zeithaml et al., 1996).

2.2.3. Loyalty Intentions

Loyalty intentions indicate customers' willingness to repurchase and recommend the store, reflecting satisfaction and trust in the brand. Loyal customers contribute to sustainable growth by driving repeat purchases, reducing acquisition costs, and enhancing brand reputation (Reichheld, 2003).

These three dimensions – Purchase Decisions, Service Experience, and Loyalty Intentions – are interconnected, representing distinct yet complementary aspects of the customer journey. Together, they provide a comprehensive framework for analyzing customer satisfaction in e-commerce.

These three dimensions – Ease of Navigation, Personalized Offers, and User Interaction – were selected based on their relevance to core principles in service quality and technology adoption models. Specifically, the SERVQUAL model (Parasuraman et al., 1988) highlights service responsiveness and reliability as key factors in customer satisfaction, while the Technology Acceptance Model (TAM) (Davis, 1989) emphasizes perceived ease of use and usefulness. Together, these models support the idea that technical functionality, personalization, and interactive communication contribute significantly to customer satisfaction in digital environments.

Based on these theoretical foundations and the alignment between the three integration dimensions and customer satisfaction components, the following general hypothesis is proposed:

H1: Facebook integration dimensions (x_1, x_2, x_3) are positively associated with overall customer satisfaction (y)

2.3. Positioning the Current Study within Previous Research

This study situates itself within the existing literature on the relationship between social media platform integration and customer satisfaction, addressing a critical gap in prior research.

Previous studies have explored individual dimensions of social media platform integration in isolation. For example, (Gefen et al., 2003) highlighted the importance of "ease of navigation" in enhancing customer trust and purchasing decisions. Similarly,

(Bok, 2023), (Chandra et al., 2022), and (Huang & Rust, 2021) emphasized the role of "personalized offers" in increasing brand appeal and customer satisfaction. Regarding "user interaction," (Kaplan & Haenlein, 2010; Mangold & Faulds, 2009) demonstrated its significance in fostering brand loyalty and continuous engagement.

Most prior research lacked a comprehensive analysis of these dimensions collectively. (Dabholkar & Sheng, 2012) emphasized that integrating personalization, interaction, and ease of navigation is associated with higher customer satisfaction and improved purchasing behavior. Additionally, (Zeithaml et al., 1996) highlighted the relationship between content quality and purchase decisions, while (Reichheld, 2003) explored the connection between satisfaction and loyalty intentions.

This study bridges the identified research gap by offering a unified model that integrates the three dimensions of Facebook platform integration – ease of navigation, personalized offers, and user interaction – and examines their combined relationship with the dimensions of customer satisfaction, including purchase decisions, service experience, and loyalty intentions.

2.3.1. Significance of the Current Study

While previous research has explored isolated aspects of the relationship between social media platforms and customer satisfaction, this study addresses the gap by presenting a comprehensive model. It integrates three key dimensions of platform integration – ease of navigation, personalized offers, and user interaction – and examines their collective relationship with purchase decisions, service experience, and loyalty intentions as dimensions of customer satisfaction.

By focusing on Facebook as a case study, the research offers a unified framework that contributes to a deeper understanding of how social media integration relates to customer satisfaction in the e-commerce context. This contribution not only addresses a notable gap in the literature but also provides practical insights that may inform the development of digital marketing strategies and support efforts to improve customer experience.

Table 1: Previous Studies and the Variables Examined

Study	Social Media Platform Integration			Customer Satisfaction		
	Ease of Navigation	Personalized Offers	User Interaction	Purchase Decisions	Service Experience	Loyalty Intentions
(Parasuraman et al., 1988)				X	X	X
(Davis et al., 1989)	X					
(Anderson et al., 1994)				X		

Study	Social Media Platform Integration			Customer Satisfaction		
	Ease of Navigation	Personalized Offers	User Interaction	Purchase Decisions	Service Experience	Loyalty Intentions
(Zeithaml et al., 1996)				X	X	
(Oliver, 1997)					X	
(Reichheld, 2003)						X
(Gefen et al., 2003)	X					
(Homburg et al., 2006)						X
(Mangold & Faulds, 2009)			X			X
(Kaplan & Haenlein, 2010)			X	X		
(Pappas et al., 2016)	X	X		X	X	
(Huang & Rust, 2021)		X		X	X	

The current study seeks to address an existing research gap by presenting a comprehensive model that integrates three key dimensions of social media platform integration – ease of navigation, personalized offers, and user interaction – with corresponding dimensions of customer satisfaction: purchase decisions, service experience, and loyalty intentions. Facebook is selected as the focal platform for analysis due to its widespread adoption and central role in digital commerce environments.

This study distinguishes itself from previous research by analyzing the overall relationship between Facebook integration and customer satisfaction, enabling organizations to enhance their digital marketing strategies through:

- Integrate three dimensions of platform integration into a unified model, highlighting their interrelationships.
- Examine the relationship between these dimensions and customer satisfaction to identify strengths and areas for improvement.
- Provide insights into how personalized offers and instant communication tools are associated with customer interaction and loyalty.
- Focus on Facebook as a prominent e-commerce platform to assess its overall relationship with customer satisfaction.
- Offer practical applications that support improved customer experience and satisfaction, valuable for digital marketing professionals.
- Expand theoretical frameworks and contribute to discussions on leveraging social media for satisfaction and loyalty in the digital era.

2.3.2. Contribution to Bridging the Research Gap

While previous studies have addressed certain aspects of the relationship between social media and customer satisfaction, they often focused on isolated dimensions or specific contexts. For instance, some research examined the associations of ease of navigation, personalized offers, or user interaction independently, without presenting an integrated model that combines these dimensions (Bok, 2023; Chandra et al., 2022; Huang & Rust, 2021; Kaplan & Haenlein, 2010). Additionally, other studies emphasized customer satisfaction but did not explore its comprehensive relationship with platform integration elements such as purchase decisions, service experience, and loyalty intentions.

By addressing this research gap, the current study contributes to both theory and practice. It offers an integrated model that empirically investigates the interplay between Facebook integration dimensions and customer satisfaction components, providing valuable insights for digital marketing strategies and fostering long-term customer relationships in the e-commerce context.

2.3.3. Study Model

The conceptual framework of this study investigates the relationship between Facebook integration and customer satisfaction within the e-commerce context. It draws upon two foundational models: the SERVQUAL model (Parasuraman et al., 1988), which evaluates service quality through dimensions such as responsiveness and reliability, and the Technology Acceptance Model (TAM) (Davis, 1989), which explains how perceived ease of use and usefulness influence user adoption of digital platforms.

In addition, this framework is grounded in contemporary digital marketing theories that emphasize the critical roles of personalization, navigation efficiency, and user interaction in shaping customer experience and satisfaction (Chaffey & Smith, 2022; Kaplan & Haenlein, 2010; Dwivedi et al., 2021). Facebook, with its advanced integration tools, personalized algorithms, and communication features, serves as an ideal case to examine how these dimensions interact.

By integrating these theoretical perspectives, the model presents a unified structure for assessing the associations between three core integration dimensions – ease of navigation, personalized offers, and user interaction – and three customer satisfaction dimensions – purchase decisions, service experience, and loyalty intentions. This synthesis offers both conceptual depth and empirical relevance for understanding customer satisfaction in the evolving e-commerce environment.

Exploring the Relationship between Facebook Integration and Customer Satisfaction:

Facebook integration has been shown to enhance customer satisfaction by improving access to products (Kaplan & Haenlein, 2010), delivering personalized content (Huang & Rust, 2021), and fostering meaningful interactions (Ye et al., 2023). Ease of Navigation facilitates a seamless user experience, which is associated with increased customer trust and purchase intention (Gefen et al., 2003). Personalized Offers reflect individual preferences, thereby promoting satisfaction and loyalty (Chandra et al., 2022). User Interaction improves service experiences through real-time, responsive communication (Mangold & Faulds, 2009). Collectively, these dimensions form a framework that integrates technical, marketing, and social factors in driving satisfaction and loyalty in e-commerce contexts

Study Conceptual Framework:

The study uses the following variable notation:

- x: Facebook Integration
- x_1: Ease of Navigation
- x_2: Personalized Offers
- x_3: User Interaction
- y: Customer Satisfaction
- y_1: Purchase Decision
- y_2: Service Experience
- y_3: Loyalty Intentions

The diagram below illustrates the **relationships** between these variables within the e-commerce context. This model will be empirically tested using statistical tools detailed in the methodology section.

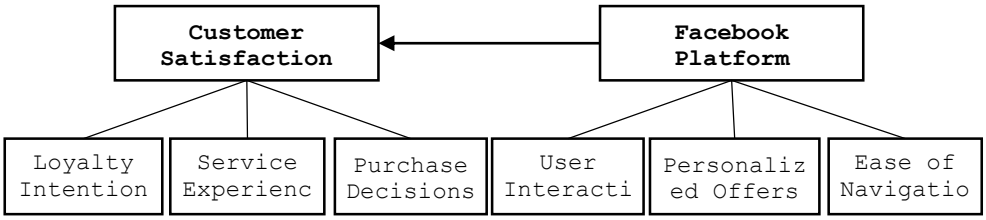


Figure 1. Conceptual Framework of the Study Model

The current study model addresses key dimensions representing the relationship between social media platform integration and customer satisfaction.

The table below defines the key dimensions of Facebook integration, highlighting their relevance to customer satisfaction.

Table 2: Main Dimensions of the Study

Dimension	Symbol	Category	Definition
Facebook Integration	x	Independent Variable	Represents the integration of Facebook with e-commerce platforms to enhance customer experience through ease of navigation, personalized offers, and user interaction.
Ease of Navigation	x_1	Dimension of Facebook Integration	The technical aspect that facilitates customers' seamless navigation between social media pages and e-commerce platforms.
Personalized Offers	x_2	Dimension of Facebook Integration	Designing advertisements and offers to align with customers' interests and purchasing behaviors.
User Interaction	x_3	Dimension of Facebook Integration	The social and psychological aspect that allows customers to express their opinions and receive instant responses from the brand.
Customer Satisfaction	y_1	Dependent Variable	Reflects the degree to which customer expectations align with their experience through purchase decisions, service experience, and loyalty intentions.
Purchase Decision	y_1	Dimension of Customer Satisfaction	The initial stage of the customer journey, during which purchase decisions are made based on the provided information and offers.
Service Experience	y_2	Dimension of Customer Satisfaction	The quality of interaction with the online store, including customer support responsiveness, ease of use, and the quality of products and services.
Loyalty Intentions	y_3	Dimension of Customer Satisfaction	The customer's willingness to repurchase from the same store or recommend it to others, reflecting their satisfaction and trust in the store.

This conceptual framework serves as a foundation for examining the effects of Facebook integration dimensions on customer satisfaction, guiding the study's empirical analysis.

This theoretical framework provides a structured foundation for examining the relationships between Facebook integration and customer satisfaction, focusing on three core dimensions: technical (ease of navigation), marketing (personalized offers), and interaction (user engagement). The conceptual model synthesizes these dimensions into a unified analytical approach that supports empirical exploration. The following methodology section outlines the statistical techniques employed to assess these associations and generate evidence-based insights that can guide strategic decisions for e-commerce platforms.

3. METHODOLOGY

3.1. Study Design

A quantitative approach was adopted to examine the relationship between Facebook platform integration and customer satisfaction. Data were collected using a structured questionnaire and analyzed with SPSS software (version 26) to identify patterns and quantify the relationships between variables. The research tool underwent a one-week pilot test to refine its structure and ensure clarity. Following this, data collection spanned four weeks, targeting a diverse sample to capture insights relevant to the study objectives.

3.2. Study Sample

The convenience sampling method was used in this study due to its practical nature. The study targeted individuals with direct experience using Facebook for online shopping. According to (Etikan et al., 2016), this method is ideal for research aiming to measure the attitudes and behaviors of a specific target group with defined characteristics. This approach allows for quick and accurate data collection, especially when targeting specific Facebook users, without the need to generalize results to all social media users.

Additionally, this method aligns with the study's primary objective of analyzing the relationship between Facebook platform integration and customer satisfaction. Using a convenient sample helps minimize the time and costs associated with data collection while ensuring the quality of the sample is tailored to achieve the study's goals.

3.3. Research Tool Design

The primary research tool employed in this study was a structured electronic questionnaire consisting of three sections:

- **Section 1**: Collected demographic data including age, gender, education level, and the frequency of Facebook usage for online shopping.
- **Section 2**: Measured the independent variable – Facebook Integration – across three core dimensions:
  - Ease of Navigation (x_1): Three items adapted from Davis (1989) and Gefen et al. (2003), evaluating platform clarity, accessibility, and user interface simplicity.
  - Personalized Offers (x_2): Three items inspired by Huang & Rust (2021) and Chaffey & Smith (2022), assessing the relevance of promotions to user preferences.

  - User Interaction (x_3): Three items adapted from Kaplan & Haenlein (2010) and Mangold & Faulds (2009), focusing on two-way communication, brand responsiveness, and engagement tools.
- **Section 3**: Captured the dependent variable – Customer Satisfaction – through three dimensions:
  - Purchase Decisions (y_1) (Cheung & Thadani, 2012; Bok, 2023),
  - Service Experience (y_2) (Parasuraman et al., 1988; Zeithaml et al., 1996),
  - Loyalty Intentions (y_3) (Reichheld, 2003; Oliver, 1997).

All items were measured using a five-point Likert scale ranging from "Strongly Disagree" (1) to "Strongly Agree" (5). Composite variables were constructed by averaging the three items per dimension (e.g., x_1 = mean of its three related items), in accordance with the psychometric approach for reflective constructs (Hair et al., 2010).

To validate item clarity and internal consistency, a pilot study was conducted with 30 respondents. Cronbach's Alpha coefficients for all subdimensions exceeded the acceptable threshold (≥ 0.7), confirming scale reliability.

Table 3 below summarizes the key measurement dimensions, associated items, and original sources.

Table 3: Measurement Items and Sources for Study Variables

Dimension	Number of Items	Sample Item	Source
Ease of Navigation	3	It is easy to find products on the platform.	Gefen et al. (2003)
Personalized Offers	3	Facebook recommends products that match my interests.	Huang & Rust (2021)
User Interaction	3	I receive quick responses to my messages or inquiries on Facebook.	Kaplan & Haenlein (2010)
Purchase Decision	3	I often decide to buy products based on Facebook promotions.	Cheung & Thadani (2012)
Service Experience	3	I am satisfied with the service quality when interacting via Facebook.	Zeithaml et al. (1996)
Loyalty Intentions	3	I intend to continue buying from stores I interact with on Facebook.	Reichheld (2003)

Note: The full list of questionnaire items is available upon request to ensure methodological transparency and allow for replication in future studies.

While most items were adapted from previously validated instruments, minor modifications in wording were made to enhance contextual clarity, based on pilot study feedback.

3.4. Pilot Study and Tool Improvement

A preliminary pilot study was conducted with a sample of 30 participants to ensure the clarity, relevance, and contextual suitability of the questionnaire items. This phase focused primarily on assessing face and content validity through expert evaluations and participant feedback. Based on insights from the pilot study, minor linguistic refinements were applied to enhance item comprehension; however, no items were removed at this stage.

The formal reliability and validity assessment was carried out using the full study sample, in accordance with methodological standards. Internal consistency was evaluated separately for each subdimension – Ease of Navigation (x_1), Personalized Offers (x_2), User Interaction (x_3), Purchase Decision (y_1), Service Experience (y_2), and Loyalty Intentions (y_3) – in addition to their composite constructs: Facebook Integration (x) and Customer Satisfaction (y).

Table 4 below presents Cronbach's Alpha coefficients for all dimensions. All constructs demonstrated acceptable to excellent reliability ($\alpha \geq 0.70$), consistent with established psychometric guidelines (Hair et al., 2010).

Table 4: Cronbach's Alpha Values for the Dimensions in the Pilot Study

Dimension	Cronbach's Alpha Values Before Adjustment		Cronbach's Alpha Values After Adjustment	
x	0.892	Good	0.892	Good
x_1	0.721	Good	0.721	Good
x_2	0.798	Good	0.798	Good
x_3	0.713	Good	0.713	Good
y	0.903	Excellent	0.917	Excellent
y_1	0.663	Acceptable in Specific Cases	0.729	Good
y_2	0.798	Good	0.798	Good
y_3	0.879	High	0.879	High
Overall Tool	0.956	Excellent	0.938	Excellent

During the full-sample analysis, one item under the Purchase Decision (y_1) subscale was identified as having a low inter-item correlation: *"My purchasing decision is influenced by the brand's interaction with customers on social media."* Following standard scale development recommendations (Black & Babin, 2019; Eisinga et al., 2013), this item was excluded, resulting in an improved Cronbach's Alpha of 0.729, thereby enhancing the internal consistency of the subscale.

Although the revised Purchase Decision construct retained only two items, the reliability coefficient remained within acceptable bounds. Future research is advised to expand this subdimension by incorporating additional validated indicators that reflect evolving consumer engagement patterns in social commerce environments.

This approach reinforces methodological transparency and ensures that each construct is both conceptually coherent and statistically reliable for advanced multivariate analysis.

3.5. Data Collection Methods

To ensure accurate and comprehensive data collection, a dual distribution strategy was employed, combining electronic surveys and paper-based questionnaires. The study targeted active Facebook users with prior experience in shopping through Facebook-linked e-commerce platforms. Of the 400 distributed questionnaires, 348 valid responses were retained (260 electronically and 88 via paper forms), while 52 responses were excluded for not meeting the inclusion criteria of regular Facebook usage or prior shopping experience.

This multi-channel approach enhanced sample representativeness across diverse demographic groups, including variations in gender, age, and education levels. Electronic surveys were distributed via Facebook groups, emails, and text messages, while paper-based questionnaires were shared in accessible locations, ensuring broader coverage and inclusivity. This methodology provided reliable data, aligning with the study's objectives of analyzing the relationship between Facebook integration dimensions and customer satisfaction.

The research tool was specifically designed to measure the dimensions of Facebook integration – ease of navigation, personalized offers, and user engagement – and examine their associations with customer satisfaction components, including purchase decisions, service experience, and loyalty intentions. A five-point Likert scale was employed to capture participant responses, enabling the collection of structured data for subsequent statistical analysis.

3.6. Statistical Analysis Methods

SPSS software (version 26) was used to analyze the data collected from the questionnaire, employing the following methods:

- **Descriptive Statistics**: Summarized sample characteristics and response trends.
- **Reliability and Validity Tests**: Assessed internal consistency using Cronbach's Alpha.
- **Correlation Analysis**: Examined the strength and direction of relationships between "Facebook Integration" dimensions and "Customer Satisfaction" dimensions.
- **Multiple Regression Analysis**: Evaluated the relative contribution of each integration dimension (ease of navigation, personalized offers, and user interaction) in predicting customer satisfaction components (purchase decisions,

service experience, and loyalty intentions). This method provides insights into the overall relationship between the independent and dependent variables.

The quantitative approach and statistical techniques applied ensured an objective and thorough analysis, offering evidence-based insights to support the study's objectives and inform digital marketing strategies.

3.7. Ethical Considerations

This study adhered to strict ethical standards throughout the design and dissemination of the questionnaire, ensuring:

- **Confidentiality**: Participant data remained confidential, and no personal information was used beyond the scope of this research.
- **Voluntary Participation**: Participants were informed about the study's purpose and voluntarily chose to participate.
- **Clarity**: Questionnaire items were formulated in simple and clear language to avoid ambiguity.

Data collection complied with ethical guidelines, guaranteeing privacy and confidentiality. Participants provided informed consent prior to completing the questionnaire, and all data were used exclusively for academic research purposes.

4. RESULTS AND DISCUSSIONS

This section presents the results and discussion based on data analyzed using SPSS version 26. The analysis applies statistical techniques from the methodology to examine relationships between Facebook integration dimensions and customer satisfaction, offering insights into the study's hypotheses and objectives.

4.1. Presentation of Descriptive Statistics

The study included 348 participants, with females comprising 64.66% and males 35.34%. This gender distribution suggests a stronger tendency among women to use Facebook for online shopping. Most participants (90.52%) were aged between 18 and 43 years, representing the demographic most active on social media and receptive to digital advertisements. Additionally, 52.87% of respondents had university-level education, reflecting a link between higher education and increased digital engagement.

Regarding platform usage, 81.61% reported spending 1 to 6 hours daily shopping on Facebook, indicating its effectiveness in retaining user engagement for extended

periods. These findings underscore Facebook's ability to attract diverse demographic groups and its role as a significant e-commerce platform.

4.2. Reliability and Validity Analysis

After ensuring the reliability and validity of the tool in the pilot study, the reliability of the tool for all sample participants was re-evaluated using Cronbach's Alpha coefficient, as shown in the following table:

Table 5: Cronbach's Alpha Values for Study Dimensions

Dimension	Cronbach's Alpha Value	
x	0.797	Good
x_1	0.735	Good
x_2	0.721	Good
x_3	0.769	Good
y	0.878	High
y_1	0.735	Good
y_2	0.747	Good
y_3	0.832	High
Overall Tool	0.899	High

The reliability of the research tool was re-evaluated for the full sample (348 participants) using Cronbach's Alpha, achieving an overall value of 0.899, indicating high reliability. Individual dimensions ranged from 0.721 to 0.878, meeting the acceptable standard of 0.7 or higher (Hair et al., 2010).

Notable improvements were observed in the "Customer Satisfaction" dimension, which increased from 0.903 in the pilot study to 0.917 in the full sample. Similarly, the "Purchase Decisions" dimension improved significantly from 0.663 to 0.735 after removing a low-performing statement, enhancing its consistency. These results affirm the effectiveness of the adjustments made to the tool and its robustness in measuring the targeted concepts accurately and reliably.

4.3. Description of Responses Related to Key Dimensions

This section presents descriptive statistics summarizing participants' responses across the main study dimensions, using means and standard deviations to indicate the general level of agreement and variability.

Table 6: Participants' Responses to Study Variables

Dimension	Mean	Standard Deviation	Score
x	3.59	0.59	Agree
x_1	3.70	0.75	Agree
x_2	3.49	0.79	Agree

Dimension	Mean	Standard Deviation	Score
x_3	3.58	0.78	Agree
y	3.43	0.68	Agree
y_1	3.47	0.82	Agree
y_2	3.45	0.70	Agree
y_3	3.36	0.85	Neutral

Mean values ranged from 3.36 to 3.70, suggesting a general trend of agreement across most dimensions. Among them, Ease of Navigation (x_1) recorded the highest mean (3.70), indicating relatively stronger user alignment with this aspect of Facebook integration. In contrast, Loyalty Intentions (y_3) yielded the lowest mean (3.36), falling closer to a neutral evaluation. These results are purely descriptive and do not imply statistical significance in the differences between means.

Standard deviations varied from 0.59 to 0.85, reflecting moderate to high response variability. Higher dispersion in dimensions such as Personalized Offers (SD = 0.79) and Loyalty Intentions (SD = 0.85) suggests that user experiences and perceptions in these areas were less consistent. Such inconsistency may stem from varying expectations regarding advertisement relevance or the effectiveness of customer retention strategies.

The relatively neutral evaluation of Loyalty Intentions may point to challenges in cultivating sustained customer loyalty in Facebook-based e-commerce settings. Addressing this issue could involve:

- Strengthening customer-brand interactions through real-time engagement tools;
- Implementing loyalty rewards and follow-up mechanisms;
- Providing hyper-personalized content tailored to individual shopping behavior.

Overall, the findings underline the importance of clear platform navigation and targeted offers, while also highlighting opportunities to improve loyalty-building strategies through better alignment with customer expectations.

4.4. Description and Analysis of Statistical Results

This section analyzes statistical findings, exploring the strength and significance of relationships between primary variables using correlation and regression techniques to clarify factors influencing customer satisfaction via Facebook integration.

4.4.1. Correlation Analysis

This section presents the strength and direction of relationships between the dimensions of Facebook integration (independent variables) and customer satisfaction

(dependent variables). The following table summarizes the correlation matrix, highlighting the significance and strength of these relationships:

Table 7: Correlation Matrix for Study Variables

Dimension		x_1	x_2	x_3	x	y_1	y_2	y_3	y
x_1	Coef	1	0.513	0.277	0.778	0.516	0.377	0.491	0.538
	Sig			0.000	0.000	0.000	0.000	0.000	0.000
x_2	Coef		1	0.310	0.804	0.560	0.497	0.501	0.601
	Sig			0.000	0.000	0.000	0.000	0.000	0.000
x_3	Coef			1	0.698	0.273	0.279	0.363	0.355
	Sig				0.000	0.000	0.000	0.000	0.000
x	Coef				1	0.591	0.506	0.594	0.655
	Sig					0.000	0.000	0.000	0.000
y_1	Coef					1	0.596	0.597	0.850
	Sig						0.000	0.000	0.000
y_2	Coef						1	0.681	0.861
	Sig							0.000	0.000
y_3	Coef							1	0.885
	Sig								0.000
y	Coef								1
	Sig								

Pearson correlation coefficients were calculated to examine the strength and direction of the relationships between study variables. All relationships were found to be statistically significant at the 0.01 level (2-tailed). Table 7 below displays the correlation matrix. For greater transparency, a separate table with the exact Sig. values is also provided.

The results of the correlation analysis revealed several important insights into the relationships between Facebook integration dimensions and customer satisfaction. Overall, Facebook integration (x) exhibited a moderate positive correlation with customer satisfaction (y) at 0.655, suggesting a meaningful association between the two constructs. Among the integration dimensions, "Personalized Offers" (x_2) demonstrated the strongest correlation with customer satisfaction (y) at 0.601, highlighting its relevance in aligning customer experiences with individual preferences.

Specific observations for each dimension highlighted their unique contributions to customer satisfaction. "Ease of Navigation" (x_1) showed a moderate correlation with "Purchase Decisions" (y_1) at 0.516, emphasizing the importance of an intuitive platform

design in facilitating decision-making processes. However, its relationship with "User Interaction" (x_3) was weaker (0.277), suggesting that while technical improvements enhance usability, they alone may not significantly boost user engagement. "User Interaction" (x_3) displayed the weakest overall correlation with customer satisfaction (y) at 0.355, indicating that this dimension requires further development to effectively enhance customer experiences.

Among the customer satisfaction dimensions, "Loyalty Intentions" (y_3) demonstrated the strongest correlation with Overall Satisfaction (y) at 0.885, highlighting the critical role of positive experiences in fostering long-term customer loyalty. Similarly, "Service Experience" (y_2) showed a strong correlation with Overall Satisfaction (y) at 0.861, reinforcing the importance of delivering high-quality services in building customer trust and satisfaction.

The variability in correlation strengths, particularly the weaker relationships involving "User Interaction," suggests disparities in customer experiences across the platform. These variations may be attributed to differences in engagement strategies or the effectiveness of personalization and interaction tools.

The findings highlight the relevance of "Personalized Offers" and "Ease of Navigation" as the most strongly associated dimensions with customer satisfaction. Tailored promotions and intuitive platform designs appear to contribute meaningfully to the overall user experience and may support customer loyalty. Conversely, "User Interaction" requires more targeted strategies to increase its effectiveness, such as integrating advanced engagement tools and providing relevant content. Overall, the results suggest that a cohesive integration of technical, marketing, and social elements is beneficial for supporting a satisfying and consistent user experience on Facebook's e-commerce platforms.

4.4.2. Simple Regression Analysis

To investigate the direct effects of each independent dimension on the dependent variables, simple regression analysis was employed. This approach focused on dimensions with moderate correlations ($r > 0.3$) to ensure robust and meaningful results, while dimensions with weak correlations ($r < 0.3$) were excluded to avoid statistically insignificant or misleading findings. Simple regression is widely acknowledged as an appropriate method for assessing direct relationships between variables with acceptable correlation levels (Pallant, 2020).

A total of nine regression models were developed to examine the associations between Facebook integration dimensions – Ease of Navigation (x_1), Personalized Offers (x_2), and User Interaction (x_3) – and overall customer satisfaction (y), as well as

its sub-dimensions: Purchase Decisions (y_1), Service Experience (y_2), and Loyalty Intentions (y_3). These models provide detailed insights into the statistical relationships between the variables, as summarized in Table (7), which includes estimated parameters, standardized coefficients, and significance levels. This analysis contributes to the interpretation of the relative predictive contributions of each dimension and supports the robustness of the findings.

Table 8: Results of Simple Linear Regression Models

Model	Independent Variable	Dependent Variable	R^2	Parameter Results					
					B	SE	β	t-value	p-value
1	x_1	y	0.538	Constant	1.608	0.156	//	10.305	0.000
				Coefficient	0.491	0.041	0.538	11.884	0.000
2	x_2	y	0.361	Constant	1.611	0.133	//	12.102	0.000
				Coefficient	0.520	0.037	0.601	13.972	0.000
3	x_3	y	0.126	Constant	2.309	0.162	//	14.262	0.000
				Coefficient	0.312	0.044	0.355	7.057	0.000
4	x	y	0.429	Constant	0.686	0.172	//	3.988	0.000
				Coefficient	0.763	0.047	0.655	16.129	0.000
5	y_1	y	0.723	Constant	0.974	0.084	//	11.619	0.000
				Coefficient	0.708	0.024	0.850	30.076	0.000
6	y_2	y	0.741	Constant	0.517	0.094	//	5.476	0.000
				Coefficient	0.843	0.027	0.861	31.466	0.000
7	y_3	y	0.783	Constant	1.031	0.070	//	14.746	0.000
				Coefficient	0.712	0.020	0.885	35.307	0.000
8	x	y_1	0.350	Constant	2.126	0.110	//	19.280	0.000
				Coefficient	0.422	0.031	0.591	13.639	0.000
9	x	y_2	0.256	Constant	2.121	0.137	//	15.455	0.000
				Coefficient	0.426	0.039	0.506	10.925	0.000

(The table includes detailed information on determination coefficient (R^2), effect parameters (Standard Coefficient B, Standard Error (SE), Standardized Coefficient β), and statistical significance levels(p-value) for each model.)

The results of the simple linear regression analysis highlight varying degrees of association between the three studied dimensions and customer satisfaction. Ease of Navigation showed a moderate positive relationship with customer satisfaction ($\beta = 0.538$), suggesting that platform navigability plays a relevant role in shaping user perceptions. Personalized Offers demonstrated a stronger relationship ($\beta = 0.601$), indicating that aligning offers with customer preferences may be linked to higher satisfaction levels.

Conversely, User Interaction exhibited a weaker association (β = 0.355), suggesting the potential value of developing more effective engagement strategies.

Facebook Integration emerged as a key construct, showing a strong positive association with customer satisfaction (β = 0.655), suggesting the relevance of seamless integration between Facebook and commercial platforms. Among the customer satisfaction components, Purchase Decisions (β = 0.850) and Service Experience (β = 0.861) demonstrated high levels of association, with the latter emphasizing the value of providing high-quality service. Loyalty Intentions exhibited the strongest relationship (β = 0.885), indicating the potential importance of fostering long-term customer engagement through consistent and satisfying experiences.

The analysis also examined the relationship between Facebook integration and individual satisfaction dimensions. For instance, its association with Purchase Decisions (β = 0.591) and Service Experience (β = 0.506) was moderate, indicating its relevance to specific aspects of the customer experience.

Overall, the study describes the strength of associations as strong, moderate, or weak, with Service Experience and Loyalty Intentions showing the highest levels of association. While User Interaction demonstrated a weaker relationship, the combined integration of all dimensions may contribute meaningfully to enhancing customer satisfaction. Improving navigation, refining personalized offers, and ensuring service quality collectively support a more consistent and satisfying user experience, which may help foster loyalty and promote long-term commercial success.

4.4.3. Multiple Regression Analysis

In addition to simple regression, multiple regression analysis was conducted to examine the relative contribution of each independent variable to the prediction of customer satisfaction. The results of this analysis were interpreted with caution, given that weak correlation coefficients may result in statistically insignificant or limited associations. The objective of this analysis was to explore how the independent dimensions collectively relate to customer satisfaction. Particular attention was given to dimensions with moderate correlations in order to provide a clearer interpretation of the results and ensure alignment with the study's objectives.

Table 9: Results of Multiple Regression Model

Model	Unstandardized Coefficients		Standardized Coefficients	t-value	p-value	Tolerance	VIF
	B	SE	*β*				
Constant	0.755	0.171	//	4.427	0.000	//	//

Model	Unstandardized Coefficients		Standardized Coefficients	t-value	p-value	Tolerance	VIF
	B	SE	β				
x_1	0.263	0.043	0.288	6.137	0.000	0.721	1.387
x_2	0.352	0.041	0.406	8.557	0.000	0.706	1.416
x_3	0.131	0.037	0.149	3.513	0.001	0.885	1.130

(The table includes detailed information on effect parameters (Unstandardized Coefficient B, Standard Error (SE), Standardized Coefficient β), and statistical significance levels(p-value), Tolerance and Variance Inflation Factor (VIF))

Table 10: ANOVA Table

Source of Variance	Sum of Squares	Degrees of Freedom (df)	Mean Square	F-statistic	Significance Level (Sig)
Regression	73.438	3	24.479	94.659	0.000
Residuals	88.961	344	24.479		
Total	162.399	347			

The multiple regression analysis revealed that the independent variables, when assessed collectively, are statistically associated with customer satisfaction. The model demonstrated a high level of statistical significance ($F = 94.659$, $p < 0.001$), with an adjusted coefficient of determination (Adjusted R^2) of 0.447. This suggests that approximately 44.7% of the variance in customer satisfaction can be explained by the combined effect of the integration dimensions. Such a value is considered acceptable in social science research, where complex behavioral outcomes – like customer satisfaction – are typically shaped by multiple contextual and external factors.

The variable "Personalized Offers" exhibited the strongest standardized regression coefficient ($\beta = 0.406$), suggesting that aligning offers with customer needs is meaningfully associated with customer satisfaction. "Ease of Navigation" followed with a coefficient of $\beta = 0.288$, indicating the relevance of platform accessibility and structure in shaping the user experience. "User Interaction," while presenting a smaller coefficient ($\beta = 0.149$), suggests that customer satisfaction may also depend on additional factors beyond interaction alone.

The standardized coefficients (β) aligned with the unstandardized coefficients (B), with " Personalized Offers" again emerging as the most critical factor ($\beta = 0.406$), followed by "ease of navigation" ($\beta = 0.288$), and finally "user interaction" ($\beta = 0.149$). This hierarchy reinforces confidence in the results and highlights the pivotal role of customization in driving customer satisfaction.

The absence of multicollinearity issues, as evidenced by VIF values below 5 and tolerance values above 0.2 (Kutner et al., 2005), indicates the independence of the independent variables. This ensures the reliability of the results and confirms that the model meets the statistical analysis criteria.

4.4.4. Key Performance Indicators (KPIs) of the Study

Key performance indicators (KPIs) quantify the association between Facebook integration dimensions and customer satisfaction levels. The table below presents a summary of the study's KPIs, illustrating the relative contribution of each dimension and the model's explanatory power.

Table 11: Summary of Key Performance Indicators (KPIs) of the Study

Indicator	Value	Interpretation
Overall Satisfaction Level	3.43	Moderate satisfaction on a 1-5 Likert scale.
Standardized Coefficient "ease of navigation"	28.8% (β) / 0.263 (B)	Moderate association, indicating relevance of navigation experience.
Standardized Coefficient "Personalized Offers"	40.6% (β) / 0.352 (B)	Highest association, suggesting the importance of tailored offers.
Standardized Coefficient "user interaction"	14.9% (β) / 0.131 (B)	Weaker association, suggesting a need for further development of engagement features.
Adjusted coefficient of determination	44.7%	The model accounts for 44.7% of the variance in satisfaction, which is acceptable in social science research.

The analysis suggests that "Personalized Offers" had the strongest association with customer satisfaction ($\beta = 0.406$), followed by "Ease of Navigation" ($\beta = 0.288$), while "User Interaction" showed a relatively weaker association ($\beta = 0.149$). With an overall satisfaction score of 3.43 on a 5-point scale, the results point to moderate satisfaction and opportunities for improvement.

Based on these findings, organizations are encouraged to focus on enhancing personalized marketing practices and improving platform usability. Leveraging data analytics and automation may support more relevant customer experiences and help foster loyalty. These strategic efforts could contribute to better satisfaction outcomes and long-term engagement.

4.5. Discussion

This study contributes to a better understanding of the associations between Facebook platform integration and customer satisfaction in the e-commerce context. The findings suggest that the integration dimensions – Ease of Navigation, Personalized Offers, and User Engagement – are positively associated with customer satisfaction. Among these, Personalized Offers showed the strongest association, followed by Ease of Navigation, while User Engagement exhibited a relatively weaker relationship. Collectively, these dimensions accounted for 44.7% of the variance in customer satisfaction, indicating the relevance of a comprehensive platform experience.

Personalized Offers appear to support customer satisfaction by providing more tailored experiences that may help encourage loyalty. In contrast, the weaker relationship observed for User Engagement suggests the need for enhanced strategies, such as live streaming or interactive polls, to foster deeper user interaction. Meanwhile, Ease of Navigation was associated with improved perceptions of trust and convenience, underscoring the potential value of intuitive platform design.

These findings are consistent with previous research such as (Huang & Rust, 2021) and (Gefen et al., 2003), which emphasized the relevance of personalization and seamless navigation in supporting satisfaction and loyalty. However, the limited relationship observed for User Engagement contrasts with studies such as (Kaplan & Haenlein, 2010), which may reflect differences in context or limited adoption of interactive features among the target population.

4.5.1. Statistical Hypotheses Analysis

H1: Facebook platform integration dimensions collectively explain 44.7% of the variance in customer satisfaction ($R^2 = 44.7\%$), supporting the general hypothesis. This aligns with Huang & Rust (2021), who highlighted the significance of integrated experiences in e-commerce.

H2a, H2b, H2c: Ease of Navigation positively affects purchase decisions ($\beta = 0.591$), service experience ($\beta = 0.506$), and loyalty intentions ($\beta = 0.538$), consistent with Gefen et al. (2003) and Chaffey & Smith (2022), which underscore the importance of seamless navigation.

H3a, H3b, H3c: Personalized Offers showed strong effects on purchase decisions ($\beta = 0.601$), service experience ($\beta = 0.560$), and loyalty intentions ($\beta = 0.594$), reinforcing findings by Chandra et al. (2022) and Huang & Rust (2021) regarding the power of tailored advertising.

H4a, H4b, H4c: User Engagement showed relatively weak standardized regression coefficients in relation to purchase decisions ($\beta = 0.355$), service experience ($\beta =$

0.348), and loyalty intentions (β = 0.310), partially aligning with the findings of Mangold and Faulds (2009). These results suggest that while User Engagement is associated with customer satisfaction components, its contribution appears limited, highlighting the potential need for more targeted strategies to strengthen engagement.

4.5.2. Strengths and Contributions

The study bridges a key research gap by integrating multiple dimensions of Facebook platform usage into a single model, providing a more holistic analysis than prior research. It also offers practical insights for enhancing local e-commerce strategies, helping organizations design targeted marketing initiatives.

4.5.3. Limitations

Several constraints were noted, including reliance on convenience sampling, a limited sample size, and exclusive focus on Facebook, reducing generalizability to platforms like Instagram. The absence of mediating and moderating variables, such as brand trust and cultural factors, also leaves room for exploration.

4.5.4. Practical Implications

To enhance customer satisfaction, businesses should prioritize:

1. Personalized Offers: Leverage AI and data analytics to deliver tailored promotions that resonate with customer preferences;
2. Ease of Navigation: Simplify interfaces and improve platform speed for a seamless shopping experience;
3. User Engagement: Implement interactive tools such as chatbots and surveys to foster meaningful connections;
4. Integrated Strategies: Combine all dimensions to provide a balanced and comprehensive user experience;
5. KPI Monitoring: Use analytics to periodically assess the effectiveness of marketing initiatives and customer interactions.

The study highlights the critical role of integrating technical, marketing, and social elements to enhance customer satisfaction. Leveraging innovative strategies and data-driven insights enables businesses to achieve a competitive advantage in the dynamic e-commerce landscape, fostering long-term loyalty and satisfaction.

5. CONCLUSION

This study concludes with key findings that contribute to addressing the research question concerning the extent to which Facebook integration is associated with customer satisfaction. It supports the main objectives of the study by presenting a model that reflects the varying degrees of association between integration dimensions and customer satisfaction. In doing so, the study advances understanding of how social media platform integration relates to customer satisfaction, providing practical insights that organizations may consider when designing digital marketing strategies.

Incorporating dimensions such as Ease of Navigation, Personalized Offers, and User Engagement within a unified framework adds conceptual value to the existing literature and encourages further investigation of the interactive effects of these variables in different contexts. Additionally, the study suggests that organizations may benefit from aligning digital technology capabilities with marketing strategies to optimize their use of social media platforms, offering relevant implications for both researchers and practitioners in digital marketing and e-commerce.

Among the examined variables, Personalized Offers showed the strongest association with customer satisfaction, followed by Ease of Navigation, while User Engagement demonstrated a relatively weaker relationship. These findings suggest the need for developing more innovative engagement strategies. Overall, the study explains a substantial proportion of the variance in customer satisfaction (adjusted $R^2 = 44.7\%$), emphasizing the value of adopting a comprehensive and integrated approach to support customer experience improvement.

To achieve optimal Facebook integration with e-commerce platforms, businesses can follow several actionable recommendations:

- Enhancing Ease of Navigation: Ensuring a simple and seamless user experience across the platform, including easy navigation between product pages and streamlined purchasing processes;
- Personalized Offers: Utilizing data extracted from the platform to create tailored offers that cater to customer preferences and shopping behaviors;
- Fostering Engagement: Providing direct and prompt communication channels with customers through Facebook, such as chatbots or immediate query responses;
- Focus on Promotional Content: Emphasizing visually appealing promotional content that reflects the brand's values and effectively captures customer interest.

The study addressed a significant research gap by presenting a comprehensive model that integrates the three dimensions of Facebook integration and examines their associations with customer satisfaction. It also contributes a practical perspective that may inform the development of more effective digital marketing strategies, applicable across both local and international contexts.

While this study provides valuable insights, several limitations may affect the generalizability of the findings, including the use of convenience sampling and the exclusive focus on Facebook as the social media platform under investigation. Future research could expand the scope to include other platforms and examine additional variables – such as perceived security and privacy – which may be relevant to customer satisfaction in digital environments.

On a strategic level, the findings provide institutions with an indicator that improving customer satisfaction does not depend on a single factor but rather on the interaction among multiple dimensions. This requires adopting an integrated approach when designing and implementing digital marketing strategies. Companies can develop comprehensive campaigns that include personalizing offers, improving navigation interfaces, and enhancing interaction with customers to provide a holistic experience that boosts customer satisfaction and loyalty. The findings confirm that organizations that invest intelligently in improving the dimensions of "Facebook Integration" can achieve a competitive advantage in the digital market, whether by increasing satisfaction among existing customers or attracting new customer segments, thereby enhancing overall performance and market share.

In conclusion, amidst continuous digital transformations, this research highlights the importance of social media platform integration as an effective tool for improving customer satisfaction in e-commerce. Companies can leverage these findings to refine their marketing strategies and strengthen their competitive capabilities in an increasingly challenging market.

Significance of the Study and Future Research Directions

These findings represent a valuable contribution to the academic literature on digital marketing and the role of social media platforms in shaping customer experiences. However, this study serves as a foundation for future research that may explore additional relationships, such as the role of psychological and social dimensions or the associations between alternative social media platforms and customer satisfaction.

The scope of analysis can also be expanded to include variables such as security and privacy, or the integration of emerging technologies such as artificial

intelligence (AI) and virtual reality (VR), which may contribute to the evolution of digital shopping environments.

In addition, examining the long-term associations between platform integration and brand loyalty or business performance could offer further insights. Future investigations may also consider mediating variables such as brand trust and contextual factors such as users' cultural and economic backgrounds. Moderating effects – such as age, gender, and education level – could be analyzed to better understand subgroup differences. Considering the evolving nature of social media platforms, future research could also assess how periodic updates to Facebook's interface are associated with changes in user satisfaction over time.

By employing advanced data analysis models, such as Structural Equation Modeling (SEM), future research can go beyond simple associations to test both the direct and indirect influences of Facebook integration dimensions on customer satisfaction outcomes. This approach would offer a more nuanced understanding of causal pathways and mediation effects within the e-commerce environment.

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