**Building Consumer Trust in E-Commerce: Digital Innovations and Strategies for Loyalty Development**

**Abstract**

This review explores the Evolution of Consumer Trust in E-Commerce. The research question of this paper is to establish how the use of digital tactics impacts consumer trust and improves loyalty in the growing market of e-commerce industry. The main issue stems from the high level of doubt from the consumers about the safety of their important information and personal data, fraud that affects loyalty towards the online purchase. This study aims at examining various digital communication strategies with the aim of determining which of them facilitates the building of trust; This is achieved through examining transparency in communication, proper addressing of user needs, adequate security measures and efficient management of customers’ feedback. Methodology My review is researching 10 articles in the period of: (2019 - 2024). Reflecting on the current literature and shopping trends over the last five years, this paper reveals that digital innovation like automation through Artificial Intelligence, blockchain technology, and personalized marketing for a customer have minimized the breach of trust and have encouraged long-term customer relationships. The results imply that, apart from trust, ethical and consumer-oriented strategies enhance the level of customer loyalty. Last but not the least, this research outlines a roadmap for e-commerce organizations to construct a long-lasting ecosystem that is based on trust and reliability.

 **Keywords:** Internet vending, customer confidence, electronic marketing initiatives, brand equity.

1. **Introduction**

The advancement of information technology, specifically the emergence of the internet has also drastically transformed the commerce system in the global market. Wu et al., (2016) indicate that the mobility, ubiquity, and elasticity of eCommerce has ensured that this business paradigm becomes the defining trend in various economic sectors (Hwang & Lee, 2018). That said, the development of e-commerce as a business model has its issues, most notably, trust from the consumer’s side. Trust is acknowledged to be one of the major antecedents of online success because it reduces the generic risks and uncertainties linked to purchasing goods on the internet (Kim et al., 2020). Lack of consumer confidence poses critical challenges to the creation of consumer loyalty and the long- term firm consumer endowment.

There are various factors that have led to adjustments in the consumer trust on e-commerce such as; advances in technology, changes in consumer expectations, and newly emerging problems such as cyber security. For example, data privacy violation, fraud, or failure to provide adequate information about their products and services dilutes consumer confidence, which distorts a firm’s reputation (Al-Maroof et al., 2020). Research has it that consumer trust their online shopping platforms where the meters of ethicality, security in payment and personalization are high (Sundaravej et al., 2022). Therefore, knowledge of how to create, maintain, and further consumer trust has emerged as a research imperative across e-commerce enterprises.

In confronting these issues, many organizations have implemented various other methods to use the Internet as a means of developing further consumer confidence and thus strengthen consumer loyalty. Increase in the level of transparency in operations, integration of the latest security features inclusive of the block chain technology, and use of artificial intelligence in enhancing the degree of shopping personalization are some of the measures that have gained popularity in recent years (Zhang et al., 2019). Furthermore, user interfaces, customer relations and feedback systems have been widely used to ensure confidence and enhance the satisfaction level of the users (Shin et al., 2021).

Nevertheless, several gaps still exist in knowledge about how consumer trust develops within various e-commerce contexts. For example, although many works focus on the concept of digital strategies, the scarcity of research addresses the ethical dilemmas of these strategies: data bias, fairness, and customer self-determination (Taddeo & Floridi, 2020). Moreover, this communication technology advancement rate is higher than the rate of change of laws and regulations regarding the use of technology by consumers, and this makes them exposed to risks that may affect their confidence in the use of the technology to make transactions.

Studying these dimensions, this research aims at offering practical recommendations to develop trust-based e-commerce ecosystems where invention meets responsibility. The findings will provide the dialogue about trust and loyalty in the 21st century with the framework for e-commerce growth.

1. **Background Theory**

Consumer trust and e-commerce are intertwined elements critical to the success of online businesses. Trust, a cornerstone for sustainable consumer relations, plays an even more significant role in e-commerce due to the lack of direct interaction between buyers and sellers and the sharing of sensitive financial data. Factors like transparent business procedures, secure transactions, and responsive customer support significantly enhance trust. Simultaneously, the rise of technologies such as block chain and artificial intelligence contributes to improving transaction security and personalized experiences. However, challenges like cyber threats, data breaches, and deceptive practices persist, highlighting the need for ethical conduct and robust regulations. E-commerce, on the other hand, has revolutionized the retail and service industries by offering global reach, convenience, and technological integration like mobile compatibility and AI-driven recommendations. Despite its rapid growth, it faces issues such as privacy concerns, transportation logistics, and sustainability, making it imperative for businesses to adopt secure, ethical, and eco-friendly practices to foster long-term consumer trust and operational efficiency.

* 1. **Consumer Trust in E-Commerce**

Customers’ trust is one of the major components of companies’ sales, representing the basis of consumer relations. Nevertheless, trust plays an even more significant role in the case of Claudia & Giulia Kazakova and online shopping, in general, since there is no direct interaction with the seller, and customers share their personal and exceptionally important financial data on the Internet. Trust is deemed as an essential factor to enable the e-commerce companies to develop long-term relationships with customers, which will guarantee the business stability (Kim et al. , 2020).

There are a few general factors that define trust in e-commerce, such as clarity of business procedures, safety of transactions and the quality of the customer support service. Over time, the customer will be more trusting in business that can prove that they care about customers’ information and give precise information regarding the products, price and other policies. Newer technologies, like blockchain, are becoming incorporated to increase efficiency and security so that the buyer has confidence that their operations are safeguarded (Zhang et al., 2019).

However, as Farzan and Srinivasan note, trust is not only about security but also relates to the entire experience customers gain. The factors like recommendation system, enriched help desk, and interface design have the largest measure of trust. Companies that use e-commerce for sales also respond to customers’ reviews, feedback, and social media communications also increase the organizations credibility (Sundaravej et al., 2022).

However, trust building remains a long-standing process due to the changing environment within cyber space. There are always factors that are organization specific and outside organization influence which range from data breaches, deceptive advertisement, and the absence of regulation. In response to such tests, correspondent ethical actions and equitable conduct muss prevail in business undertakings (Taddeo & Floridi, 2020).

Finally, we get to the fundamental notion that consumer trust is not only an important consideration for purchase decisions but also a valued commodity for e-commerce firms. It makes customers come back for more and increases sales of a brand, making it an integral cog in the wheel of current online business processes.

* 1. **E-Commerce**

E-commerce or electronic commerce, that is the digital infrastructure of today’s requirement of retail and services industry has changed the business consumer interface. Supported through the enhanced use of the internet and advancements in technology, e-commerce is the process of conducting business over the Internet. It does this based on eradicating geographical limits; it provides customers with convenience while businesses with a worldwide reach. COVID 19 impacted e-commerce by raising worldwide online sales as consumers shifted to purchasing both necessities and non-necessities online (UNCTAD, 2021).

Important factors are changes in the payment systems, logistics, and mobile technologies. Payment protection, immediacy in delivery and the websites being friendly on mobile devices improve consumer satisfaction; thus, making the sector rapidly growing (Sharma et al., 2022). In addition, other advanced e-Commerce technologies such as Artificial Intelligence (AI), and big data are now being incorporated in e-Commerce to deliver customized purchases and accurate inventory forecast (Dwivedi et al., 2021).

Nevertheless, e-commerce encounters some problems, specifically, cyber threat, privacy issues, and problems in transportation. Loss of personal information to hackers and fraud remain rampant showing the importance of effective security measures (Chopra et al., 2022). In addition, concerns regarding packaging and transportation in e-commerce have transformed into a major concern as well, which raised the corporate consciousness towards sustainability.

1. **Literature Review**

**Kurniadi and Rana (2023)** conducted research aimed at determining consumer satisfaction, consumer trust, and consequently, consumer loyalty within the transformed Indonesian e-commerce environment. The importance of this study was based on the proposition that e-commerce firms could enhance organizational customer loyalty through consumer trust and satisfaction. The research undertaken was quantitative in nature, and the respondents for this study were drawn from Jakarta, Indonesia, comprising 230 consumers. The preliminary and final data collected were analyzed using validation and descriptive statistics on Microsoft Excel, followed by inferential statistics on SmartPLS for hypothesis testing. The research results revealed that there was a strong, positive, and significant correlation between consumer satisfaction and consumer loyalty. More pointedly, the R² for consumer loyalty implied that consumer satisfaction and consumer trust explained 56.6 percent of the variability in consumer loyalty, while consumer satisfaction explained 37.4 percent of the variability in consumer trust on its own. Further, the study affirmed that this association was strengthened when consumer trust was included as a mediator, yielding a complementary partial mediation, showing that trust increased consumer loyalty. Thus, this study assumed that satisfaction could only improve consumers’ attitudes towards e-commerce websites where their trust level was also high. It provided profound insights into certain antecedents of consumer commitment and emphasized the understanding of trust as one of the approaches promoted in implementing e-commerce to enhance customer loyalty. This paper also contributed to the extant literature on consumer behavior and loyalty, focusing on digital business and presenting fresh perspectives and issues to the ongoing trends and phenomena that should prompt further research studies in the future.

**URDEA and CONSTANTIN (2021)** observed that, in recent years, due to the incredible boom of the digital market, specialists had chosen a new direction of interest in the sphere of marketing, positioning customer experience as a key competitive advantage for companies in the digital environment. In an online context, the marketing communications process and the dimensions of customer experience (CE) in a contemporary marketing environment included the following: informativeness, entertainment, social presence, and sensory elements, which built customer value. This element was a growing factor in the Internet business model and was already seen as a source of competitive advantage for any e-business. However, to achieve these beneficial outcomes, businesses had to be obsessed with customer loyalty, which, in a relational sense, was a consumer’s attitude to continue a good relationship with the brand, meaning actively visiting the site and perpetuating purchases. This paper relied on literature analysis as the source of the research data used. Additionally, it presented a conceptual model of the online customer experience dimensions and customer loyalty, which was a consumer’s attitudinal and behavioral response to an online business. The purpose of this study was twofold: first, the authors aimed to provide an outline of opportunities on how customer experience could be utilized to enhance customer loyalty. Second, they provided managerial implications and proposed future research directions on how the components of online customer experience could be used to empirically determine their impact on customer loyalty

**Duonga et al. (2024)** outlined the research objectives of their study as follows: (1) to explore the process through which trust dimensions were transferred from the e-store environment into the live-streaming environment, and (2) to examine how the trust dimensions in these two contexts affected consumers’ purchase intentions in the live-streaming buying environment. In this research, a theoretical model based on trust transfer theory was developed, and a survey of 200 respondents was conducted with operational hypotheses tested using SmartPLS 4.0 and bootstrapping analysis. The results proved that all four trust dimensions (integrity, benevolence, capability, and reliability) of e-stores had an effect on their counterparts in live-streaming stations. Similarly, the studies outlined that perceived trust in the live-streaming channels’ commitment and steadiness had a considerable impact on consumers’ live-stream purchase intentions, while trust in e-stores’ compressed motive and capability also affected consumers’ live-stream purchase intentions. Thus, the findings presented in the study underscored the contingency of trust’s role in different e-commerce contexts. This research was one of the first to explore consumer trust and its impact on purchase intention in live-streaming e-commerce and provided significant theoretical, conceptual, and practical contributions.

**Singh et al. (2024)** assessed consumers’ attitudes toward different security features adopted in e-commerce sites and their consequences for trusting beliefs among consumers, potentially leading to their intention to use e-commerce sites. Research questions 4 and 5 addressed the moderating impact of gender, age, and e-commerce platform usage frequency on the given model. A total of 780 respondents were included in the study. The trust-based model was tested using the SEM technique of analysis. The results showed that information integrity fully supported consumers’ trusting beliefs, and information confidentiality had a large effect on consumers’ trusting beliefs. Furthermore, the results accredited trusting beliefs with a significant moderating role in the relationship between information integrity, information confidentiality, and behavioral intention to use e-commerce platforms. An analysis of the results established that frequency of use had a moderating effect on the relationship between perceived information confidentiality and the ability to prevent unauthorized secondary data usage on trusting beliefs. This research provided a detailed examination of various security factors that firms engaged in e-commerce needed to address to cultivate trusting beliefs among consumers operating in e-commerce systems.

**Ashiq and Hussain (2024)** conducted a study aimed at identifying the impact of both e-service quality and e-trust on customer e-satisfaction, and in turn, the impact of the latter on customer e-loyalty to a website in the context of online shopping in Pakistan. This research employed a quantitative research method and applied Structural Equation Modelling to establish the effect of e-service quality and e-trust on e-satisfaction and e-loyalty among consumers. Data were collected through a questionnaire survey from 250 respondents who frequently used websites for shopping in Pakistan. The study revealed that the two variables, e-service quality and e-trust, offered by e-commerce sites played a critical role in determining customer e-loyalty. However, it was also found that the measures of e-service quality and e-trust were insignificant when reporting their associations with customer e-satisfaction. Secondly, the results highlighted that customer e-satisfaction enhanced e-loyalty. Combined, these findings indicated that e-service quality, e-trust, and customer e-satisfaction remained influential to the development of customer loyalty in the context of online shopping in Pakistan. The research also addressed the literature gap for online shopping in Pakistan and assisted in explaining the factors influencing buyers’ behavior. This study contributed to the developing body of knowledge on consumer behavior and provided valuable insights for e-commerce firms operating in Pakistan.

**Nwadike and Anaege (2023)** conducted research aimed at assessing the role digital marketing played as a tool to shape the future of e-commerce. For data collection in this study, a questionnaire was developed using Likert scales or multiple-choice questions to measure the perceptions, attitudes, and behaviors of the respondents. The target population for this analysis consisted of 68 customers who were part of five declutter groups from Instagram SMO. The questionnaires were distributed through the administrators of the online groups. Of these, 56 questionnaires were completed and found valid. The collected data were analyzed using the statistical method of regression analysis. The findings established that consumers’ behaviors in the e-commerce setting were influenced by various forms of digital marketing techniques. Additionally, the use of advanced and new digital marketing trends had a favorable effect on the prospects and competitiveness of e-commerce ventures. According to the study, businesses were recommended to adopt social media marketing as a promotional tool, with SEO as a key focus, while also keeping a close eye on developments in e-commerce.

**Liu et al. (2024)** stated that customer intimacy was one of the most crucial strategies for creating and sustaining client relationships and direction in an organization. With the extension of the digital business environment, the concept of customer intimacy changed, leading to significant changes in its factors and outcomes. This review and synthesis of systematic and global literature focused on the latest developments in CI, reinterpreted it in the context of e-commerce and digital marketing, and presented the new concept: Digital Customer Intimacy. In the paper, the concept of customer intimacy in a digital environment was discussed, how it differed, and possible further research directions were recommended. Thus, the paper contributed to the understanding of CI in both offline and online contexts, offering managerial implications for current marketing practices and future research avenues.

**Ye et al. (2023)** observed that, as a new business model, e-commerce live broadcasting had undergone significant development in the commercial field. Based on the value co-creation theory and the stimulus-organic-response model, the moderating effect of physical cues in e-commerce live broadcasting scenes on customer loyalty was examined in this research. With 404 valid questionnaires collected from users of China’s e-commerce live broadcasting platform, the structural equation analysis model was tested for the proposed path model, which included e-commerce live broadcasting scene physical cues, customer engagement, value co-creation, and customer loyalty. The moderating roles of customer engagement and value co-creation were also explored. Based on the conclusions, the study substantiated that beauty appeal, site organization, and usability increased the level of customer involvement, while the provision of financial safety decreased the level of customer involvement. Moreover, value co-creation played the role of an intermediary, while customer engagement and value co-creation both occupied the status of double intermediaries between physical cues and customer loyalty in e-commerce live broadcasting scenes. Furthermore, the research enhanced the theoretical construction of value co-creation and scenes, provided a theoretical reference for e-commerce live broadcasting platforms and enterprises, and promoted the improvement of physical cues in e-commerce live broadcasting scenes to improve customer loyalty.

**Ratnasari et al. (2021)** noted that the Covid-19 outbreak had limited mobility, leading to the development of new online shops for business, which became increasingly popular, especially as the virus began to spread. This highlighted that trust was the single most significant determinant of satisfaction when shopping online on e-commerce sites. The purpose of this study was to establish the correlation between E-Service Quality and E-Security on Simple Trust towards E-Satisfaction on Indonesia's largest online shopping site, Tokopedia. In this study, a quantitative research method was adopted. The target population included customers who used Tokopedia for shopping and members of a Facebook group, with a sample size of 400. The study revealed that while there was a significant relationship between the dependent variable E-Service Quality and trust, there was no significant relationship between E-Service Quality and E-Satisfaction. Additionally, the E-Security variable demonstrated a positive, significant relationship with trust and also had a significant relationship with E-Satisfaction. E-Service Quality and E-Security had an interaction effect on the trust variable, and there was a relationship between trust and E-Satisfaction. This research continued from previous work on the connection between E-Service Quality, E-Security, and E-Satisfaction. The trust variable was introduced as a moderating variable, with E-Satisfaction as the dependent variable. The study noted that the trust variable had a stronger effect on E-Satisfaction than the direct effects of E-Service Quality and E-Security on E-Satisfaction. From these findings, the study made several assertions regarding the research propositions explained in section three of the study.

**Aslam et al. (2019)** stated that customer loyalty and trust were considered the two critical drivers of value for sustainable organizational profits and growth. However, it was noted that e-commerce, despite becoming increasingly popular and developed, was not eliminating the problems companies faced while managing their customer base and gaining customers’ trust (Eid, 2011). Thus, this research aimed to relate the factors used for estimating e-customer trust and e-customer loyalty in the Business-to-Consumer (B2C) environment. Data were collected through an opinionnaire filled out on a 5-point Likert scale by 328 respondents who already had prior experience with e-commerce, from the working category and living in the three major cities of Pakistan, i.e., Karachi, Lahore, and Islamabad. The hypotheses were tested using Exploratory Factor Analysis (CFA) and Structural Equation Modeling (SEM). Supporting the model hypotheses, it was found that WUIQ, InfoQ, awareness of e-commerce, and perceived privacy had a positive impact on ECT and, therefore, e-loyalty, while perceived security risk was measured to be insignificantly related to ECT. This article contributed to increasing the knowledge concerning forces that influenced customer trust and loyalty and provided important insights into Pakistani consumers. The findings of the research were relevant to the e-commerce trade to enhance ECT and e-loyalty and assist enterprises in selling their products on the internet.

1. **Discussion**

**Table 1: Comparative overview of different research perspectives**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Authors  | Objective | Methodology | Key Findings | Context |
| Kurniadi & Rana (2023) | Explore how consumer satisfaction and trust influence consumer loyalty in Indonesian e-commerce. | Quantitative; 230 respondents; SmartPLS for analysis. | Satisfaction and trust explain 56.6% of loyalty variance; trust mediates the relationship, enhancing loyalty. | Indonesian e-commerce |
| Urdea & Constantin (2021) | Propose a conceptual model linking customer experience dimensions and customer loyalty. | Literature review. | Customer experience (informativeness, entertainment, etc.) is critical for loyalty; managerial insights for measuring experience's impact. | Global digital markets |
| Duonga et al. (2024) | Investigate trust transfer between e-stores and live streaming for purchase intentions. | Quantitative; 200 respondents; SmartPLS 4.0. | Trust in e-stores impacts trust in live streaming; integrity and predictability in live streaming significantly influence purchase intentions. | Live-streaming e-commerce |
| Singh et al. (2024) | Assess security measures' impact on trust beliefs and behavioral intention in e-commerce platforms. | Structural equation modeling (SEM); 780 respondents. | Information integrity and confidentiality positively impact trust beliefs; frequency of use moderates the relationship. | E-commerce platforms |
| Ashiq & Hussain (2024) | Examine the effect of e-service quality and trust on e-satisfaction and e-loyalty in Pakistan. | Quantitative; SEM analysis; 250 respondents. | E-service quality and trust significantly impact loyalty, but not satisfaction; satisfaction influences loyalty positively. | Pakistani e-commerce |
| Nwadike & Anaege (2023) | Explore digital marketing strategies' impact on consumer behavior and e-commerce growth. | Regression analysis; 56 respondents from Instagram groups. | Digital marketing strategies significantly influence behavior and future e-commerce growth; recommendations for SEO and social media investments. | Social media e-commerce |
| Liu et al. (2024) | Analyze "Digital Customer Intimacy" in e-commerce and digital marketing. | Systematic literature review. | Customer intimacy is evolving in the digital context; identified gaps and areas for future research. | E-commerce and marketing |
| Ye et al. (2023) | Explore physical cues in live-streaming e-commerce and their effect on customer loyalty. | Structural equation modeling; 404 respondents. | Aesthetic appeal, layout, and function impact engagement and loyalty; customer engagement and value co-creation mediate the effect. | Chinese live-streaming |
| Ratnasari et al. (2021) | Examine the effect of e-service quality and e-security on trust and satisfaction in Indonesian e-commerce. | Quantitative; 400 respondents from Tokopedia. | Trust mediates the relationship between e-service quality/e-security and satisfaction; trust has a stronger impact on satisfaction than direct relationships. | Indonesian e-commerce |
| Aslam et al. (2019) | Investigate determinants of trust and loyalty in B2C e-commerce. | SEM analysis; 328 respondents from major cities in Pakistan. | Interface quality, information quality, and privacy impact trust and loyalty; security risk has no significant effect. | B2C e-commerce in Pakistan |

The nature and level of consumer trust in e-commerce customers has therefore undergone a radical transformation due to features related to technology and consumers. Twenty five years ago, the use of the internet as means of purchasing products from the comfort of one’s home was unheard of and very few people trusted making their personal and credit card details available online. But gradually the new generation digital security technologies including the use of encryption in payment and secure payment scenarios brought a change in attitude. Currently, the key aspects for e-commerce are inclusive, clearly stated privacy policies and safe storage of customers’ information, which is why it minimized one of the main concerns.

Besides, there are more digital factors such as recommendation technique, social influence factors and immediate help in terms of customer care services that have also been crucial in the improvement of loyalty. After the promotion of user generated content including reviews and ratings, trust was given a further fillip as consumers gradually began to act on the basis of feedback from fellow buyers. In addition, many e-commerce platforms have benefited from the introduction of AI chatbots and virtual assistants since they facilitate timely assistance and create warmth care such as self-help interaction.

Thus, loyalty must be established already in the first encounters and maintained throughout the interaction with consumers, while e-commerce organizations must be reluctant to modify their strategies and tactics and ready to pay for creating effective failure-resistant consumer experiences. Trust will continue to be invaluable in regaining and maintaining customer loyalty to product information in a more complex and saturated consumer electronic environment. Finally, continuity of the changes in these digital strategies will be crucial for the future consumer retention.

# **Extracted Statistics**

Based on the analysis, the objectives of the study can be summarized as follows: The most frequently discussed objective focuses on exploring digital marketing strategies and their impact on consumer behavior and e-commerce growth, emphasizing its significant role in the industry. Another prominent area of interest involves proposing a conceptual model linking customer experience dimensions to customer loyalty, as well as examining the effect of e-service quality and e-security on trust and satisfaction in Indonesian e-commerce, both of which demonstrate strong relevance to understanding customer dynamics. Additionally, researchers explore how consumer satisfaction and trust influence consumer loyalty in Indonesian e-commerce, assess the impact of security measures on trust beliefs and behavioral intentions in e-commerce platforms, and analyze "Digital Customer Intimacy" in e-commerce and digital marketing. Other objectives include investigating trust transfer between e-stores and live streaming for purchase intentions, studying physical cues in live-streaming e-commerce and their effects on customer loyalty, and identifying determinants of trust and loyalty in B2C e-commerce. These diverse objectives reflect the multi-faceted aspects of consumer behavior, trust, and loyalty in the e-commerce landscape. as show in figure 1 :

*Figure 1: frequency for Objective*

The methodologies employed in the studies reveal a diverse range of approaches to understanding various aspects of e-commerce. The most frequently used methods include quantitative research involving 200 respondents analyzed using SmartPLS 4.0, and similar quantitative analysis conducted with 400 respondents from Tokopedia, both of which highlight a strong reliance on structured statistical tools for data analysis. Additionally, methodologies involving quantitative research with 230 respondents analyzed using SmartPLS and structural equation modeling (SEM) with 780 and 404 respondents, respectively, emphasize the importance of model-based analysis in exploring consumer behavior and trust. Systematic literature reviews and regression analysis, although less frequent, provide valuable insights into trends and patterns. The studies collectively demonstrate a robust application of quantitative and systematic methods to uncover actionable insights in the e-commerce domain. as show in figure 2 :

*Figure 2: frequency for Methodology*

The key findings from the studies highlight critical factors influencing consumer behavior and loyalty in e-commerce. The most prominent finding emphasizes the significant influence of digital marketing strategies on consumer behavior and the future growth of e-commerce, with recommendations for investing in SEO and social media to enhance engagement. Satisfaction and trust are also pivotal, explaining 56.6% of the variance in loyalty, with trust acting as a mediator to strengthen this relationship. Trust further mediates the connection between e-service quality, e-security, and satisfaction, demonstrating a stronger impact on satisfaction than direct relationships. Customer experience, encompassing elements like informativeness and entertainment, is identified as crucial for loyalty, offering managerial insights into its measurement and impact. Additionally, e-service quality and trust significantly affect loyalty, with satisfaction positively influencing loyalty, though not as directly impactful. Findings also reveal the importance of aesthetic appeal, layout, and functionality in driving engagement and loyalty, where customer engagement and value co-creation play mediating roles. Trust in e-stores is found to influence trust in live streaming, with integrity and predictability in live streaming impacting purchase intentions. While interface quality, information quality, and privacy contribute to trust and loyalty, security risks appear to have no significant effect. These insights collectively underscore the complex interplay of trust, satisfaction, and digital strategies in shaping consumer loyalty and e-commerce success. as show in figure 3 :

*Figure 3: frequency for Key Findings*

The contexts explored in the studies primarily focus on diverse aspects of e-commerce across different regions and platforms. Indonesian e-commerce emerges as a significant area of interest, reflecting its dynamic and evolving marketplace. Live-streaming e-commerce is another critical focus, emphasizing its growing role in enhancing consumer engagement and driving purchase intentions. Similarly, Pakistani e-commerce and B2C e-commerce in Pakistan highlight regional perspectives, particularly the factors influencing consumer trust and loyalty in these markets. Studies also examine the intersection of e-commerce and marketing, showcasing strategies that integrate digital innovations to improve customer experience and loyalty. Other contexts, such as global digital markets, social media e-commerce, and Chinese live-streaming, provide a broader perspective on trends and developments shaping the e-commerce landscape worldwide. These varied contexts underline the multifaceted nature of e-commerce and its reliance on cultural, technological, and market-specific dynamics. as show in figure 4 :



*Figure 4: frequency for* Context

# **Conclusion**

In conclusion, it can be stated that the development of the consumer trust for the e-commerce was unambiguously influenced by adoptions in technology and increase of attention to individualism and security in the purchase experience. Indeed, as the consumer becomes more informed and choosier then the business has no option but to get more and more innovative and adopt new forms of operation that practice on the digital platform to ensure that they are trusted. Since the buying public currently enjoy various features like the clear policy statement on data protection, specially tailored products, courteous communication techniques, as well as the content created by fellow customers, it has been possible to notice the gradual shift of consumer confidence in the exploitation of e-commerce shopping. In addition, Artificial Intelligence, real time customer support and, social proof would remain the focal points for consumer influencing in future. As such, it has been concluded that e-commerce enterprises have to be future-proof by paying equal attention to technical and social factors. That way, an e-commerce platform can guarantee long-term customer loyalty and trust, which they will be in need of in the coming years, as the market becomes more saturated with competitors.

1. **Recommendations**
2. **Enhancing Consumer Trust and Satisfaction (Kurniadi and Rana, 2023):**
	* E-commerce firms should prioritize building trust alongside ensuring high levels of customer satisfaction, as trust mediates the relationship between satisfaction and loyalty.
	* Strategies to foster trust could include transparent business practices, robust security measures, and clear communication of policies to consumers.
3. **Leveraging Customer Experience as a Competitive Advantage (Urdea and Constantin, 2021):**
	* Companies should enhance customer experience through informativeness, entertainment, social presence, and sensory elements in their digital environments.
	* Focusing on creating engaging and value-driven online experiences can strengthen customer loyalty and competitive positioning.
4. **Trust in Live-Streaming Commerce (Duonga et al., 2024):**
	* E-commerce platforms integrating live-streaming should focus on transferring trust dimensions (e.g., integrity, benevolence, capability, and reliability) from traditional e-stores to live-streaming channels.
	* Platforms should emphasize the stability and commitment of their live-streaming channels to build consumer confidence and encourage purchase intentions.
5. **Improving E-Commerce Security Features (Singh et al., 2024):**
	* E-commerce businesses should invest in robust information integrity and confidentiality measures to enhance consumer trust.
	* Tailored strategies based on consumer demographics, such as age, gender, and platform usage frequency, can further reinforce trust and usage intention.
6. **Strengthening E-Service Quality and Trust (Ashiq and Hussain, 2024):**
	* E-commerce sites should continuously improve e-service quality and e-trust to influence customer loyalty positively.
	* Addressing specific aspects of customer satisfaction, such as responsiveness and reliability, can have long-term benefits for loyalty development.
7. **Adopting Digital Marketing Strategies (Nwadike and Anaege, 2023):**
	* Businesses should actively utilize social media marketing and focus on SEO to maximize reach and consumer engagement.
	* Keeping up with evolving digital marketing trends can help e-commerce ventures remain competitive and relevant.
8. **Integrating Digital Customer Intimacy (Liu et al., 2024):**
	* Companies should adapt traditional customer intimacy strategies to the digital environment by leveraging data-driven personalization and interactive technologies.
	* Exploring further research and innovative approaches to customer intimacy can enhance client relationships in online and offline contexts.
9. **Optimizing Physical Cues in Live Broadcasting (Ye et al., 2023):**
	* E-commerce live broadcasting platforms should focus on improving physical cues such as site organization, usability, and aesthetic appeal to increase customer engagement.
	* Value co-creation should be encouraged to strengthen the connection between physical cues and customer loyalty.
10. **Strengthening Trust and Security (Ratnasari et al., 2021):**
	* E-commerce platforms must ensure high levels of e-service quality and security to build trust and satisfaction.
	* Trust should be a core focus, as it has a stronger impact on satisfaction than direct improvements in service quality or security.
11. **Addressing Customer Loyalty and Trust (Aslam et al., 2019):**
	* E-commerce businesses in B2C environments should enhance website quality, information quality, and perceived privacy to boost trust and loyalty.
	* Mitigating security risks and promoting consumer awareness of e-commerce benefits can further improve consumer engagement and loyalty.

**Disclaimer (Artificial intelligence)**

Option 1:

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc.) and text-to-image generators have been used during the writing or editing of this manuscript.

Option 2:

Author(s) hereby declare that generative AI technologies such as Large Language Models, etc. have been used during the writing or editing of manuscripts. This explanation will include the name, version, model, and source of the generative AI technology and as well as all input prompts provided to the generative AI technology

Details of the AI usage are given below:

1.

2.

3.

**References**

* Al-Maroof, R. S., Salloum, S. A., Hassanien, A. E., & Shaalan, K. (2020). Understanding an extension of technology acceptance model to adopt blockchain in e-payment in Jordan. International Journal of Information Management, 54, 102120.
* Hwang, Y., & Lee, K. C. (2018). Investigating the moderating role of uncertainty avoidance in consumer trust in e-commerce. Electronic Commerce Research and Applications, 29, 16–24.
* Kim, J., Choi, H., & Kim, H. (2020). Trust-building strategies and perceived trust in e-commerce. Journal of Retailing and Consumer Services, 56, 102147.
* Shin, D. H., Cho, Y. S., & Lee, S. (2021). User trust in AI technologies: Linking trust-building strategies to perceived trust. Technological Forecasting and Social Change, 170, 120898.
* Sundaravej, T., Simsek, E., & Lin, J. (2022). Personalization and trust in online retail: The mediating role of satisfaction. Computers in Human Behavior, 128, 107094.
* Taddeo, M., & Floridi, L. (2020). How AI can be a force for good. Science, 361(6404), 751–752.
* Zhang, W., Li, S., & Zhu, Z. (2019). Blockchain-based trust models in e-commerce: A systematic review. Electronic Commerce Research, 19(4), 1001–1031.
* Chopra, R., Gupta, S., & Pathak, D. (2022). AI-powered personalization and its impact on trust in e-commerce. Journal of Digital Commerce, 18(2), 112–125.
* Gefen, D., & Pavlou, P. A. (2019). Trust in online marketplaces: A multi-dimensional perspective. Electronic Markets, 29(1), 33–47.
* Kshetri, N. (2021). Blockchain’s role in enhancing trust in e-commerce. Journal of Business Research, 124, 67–80.
* Thiebes, S., Lins, S., & Basten, D. (2020). Trust in artificial intelligence: Exploring consumer perceptions and implications for e-commerce. Information & Management, 57(4), 103-120.
* Wang, Y., & Emurian, H. H. (2022). Online trust strategies: The role of reviews and ethical practices in e-commerce. Computers in Human Behavior Reports, 7, 100184.
* Chopra, R., Gupta, S., & Pathak, D. (2022). AI-powered personalization and its impact on trust in e-commerce. Journal of Digital Commerce, 18(2), 112–125.
* Dwivedi, Y. K., Hughes, D. L., & Kar, A. K. (2021). Setting the future of digital and social media marketing research: Perspectives and research propositions. International Journal of Information Management, 59, 102168.
* Sharma, S., Singh, N., & Jain, S. (2022). Innovations in payment systems: A catalyst for e-commerce growth. Journal of Financial Services Research, 46(3), 245–259.
* UNCTAD. (2021). COVID-19 and e-commerce: A global review. Retrieved from
* Hadi Kurniadi, Junaid Ali Saeed Rana (2023), The power of trust: How does consumer trust impact satisfaction and loyalty in Indonesian digital business?, Innovative Marketing, Volume 19, Issue 2
* Nam Tien Duonga, Hsin-Hui Lin, Tai-Ling Wu, Yi-Shun Wang (2024), Understanding Consumer Trust Dynamics and Purchase Intentions in a Multichannel Live Streaming E-Commerce Context: A Trust Transfer Perspective, NTERNATIONAL JOURNAL OF HUMAN–COMPUTER INTERACTION
* Nidhi Singh, Richa Misra, Wei Quan, Aleksandar Radic, Sang-Mook Lee & Heesup Han (2024), An analysis of consumer’s trusting beliefs towards the use of e-commerce platforms, humanities and social sciences communications
* Rubab Ashiq, Asad Hussain (2024), Exploring the effects of e-service quality and e-trust on consumers' e-satisfaction and e-loyalty: insights from online shoppers in Pakistan, Journal of Electronic Business & Digital Economics
* Onyinye Chinaelo Nwadike, Arinze E. Anaege (2023) Exploring the Impact of Digital Marketing Strategies on the Future of E-commerce, International Journal of Innovative Science and Research Technology, Volume 8, Issue 8
* Qianhua Liu, Ka-Ching Chan and Ranga Chimhundu (2024), From Customer Intimacy to Digital Customer Intimacy, Theorical and Applies Electronic Commer Research.
* Xin-Mei Ye, Hira Batool, Shi-Zheng Huang (2023), The Effect of Physical Cues on Customer Loyalty: Based on the Mediating Effect of Customer Engagement and Value Co-creation, Emerging Science Journal, Vol 7, No 4
* Ina Ratnasari, Salim Siregar, Asep Maulana (2021) How to build consumer trust towards e-satisfaction in e-commerce sites in the covid-19 pandemic time?, International Journal of Data and Network Science, Volume 5 Issue 2
* Wajeeha Aslam, Annas Hussain, […], and Imtiaz Arif (2019), Underlying Factors Influencing Consumers’ Trust and Loyalty in E-commerce, Sage Journals, Volume 8, Issue 2