

The Impact of Electronic Customer Relationship Management (e-CRM) on e-Loyalty

Electronic Customer
Relationship
Management

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ABSTRACT

In the era of digital commerce, customer loyalty has become a vital determinant of platform sustainability. This study investigates the impact of Electronic Customer Relationship Management (e-CRM) on electronic loyalty (e-loyalty), with a focus on the mediating roles of e-customer experience and customer engagement. Grounded in Relationship Marketing Theory, the research targets active Tokopedia users in Indonesia using a quantitative approach. Data were collected through an online survey of 240 participants selected via purposive sampling, and analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 4.0. The results indicate that e-CRM significantly influences e-loyalty both directly and indirectly. Customer experience and engagement were found to mediate these relationships effectively. Notably, e-CRM improves digital experiences and promotes deeper customer involvement, both of which significantly enhance loyalty. These findings affirm that loyalty in e-commerce is driven not only by technical CRM execution but also by seamless, personalized interactions and emotional connections.

Keywords: Customer Engagement, e-Customer Experience, Loyalty, Relationship Management.

ABSTRAK

Di era perdagangan digital, loyalitas pelanggan menjadi penentu utama keberlanjutan sebuah platform. Penelitian ini mengkaji pengaruh Electronic Customer Relationship Management (e-CRM) terhadap loyalitas elektronik, dengan fokus pada peran mediasi dari pengalaman pelanggan digital dan keterlibatan pelanggan. Berlandaskan Teori Pemasaran Relasional, penelitian ini menargetkan pengguna aktif Tokopedia di Indonesia dengan pendekatan kuantitatif. Data dikumpulkan melalui survei online terhadap 240 responden yang dipilih menggunakan teknik purposive sampling, dan dianalisis dengan metode Partial Least Squares Structural Equation Modeling (PLS-SEM) menggunakan SmartPLS 4.0. Hasil penelitian menunjukkan bahwa e-CRM berpengaruh signifikan terhadap e-loyalty baik secara langsung maupun tidak langsung. Pengalaman pelanggan dan keterlibatan terbukti menjadi mediator yang efektif dalam hubungan tersebut. Secara khusus, e-CRM terbukti mampu meningkatkan kualitas pengalaman digital serta mendorong keterlibatan pelanggan yang lebih dalam, yang secara signifikan memperkuat loyalitas. Temuan ini menegaskan bahwa loyalitas dalam e-commerce tidak hanya ditentukan oleh implementasi teknis CRM, tetapi juga oleh interaksi yang personal, mulus, dan penuh keterlibatan emosional.

Kata kunci: Keterlibatan Pelanggan, Pengalaman Pelanggan Elektronik, Loyalitas, Manajemen Hubungan.

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INTRODUCTION

In today's digital era, online commercial activities, often referred to as digital trade, have transformed how businesses operate by enabling transactions via internet-based platforms (Koe, 2020; Nasution et al., 2021; Yang et al., 2023). In Indonesia, this digital transformation has significantly fueled the growth of the national economy, with the e-commerce sector consistently dominating the country's gross merchandise value (GMV), as reported by Google, Temasek, and Bain & Company. GMV functions as a key performance indicator, reflecting the total sales value within a specific timeframe. Since 2018, Indonesia has led Southeast Asia in GMV contributions, initially valued at US\$12.2 billion. According to Momentum Works, this figure rose to US\$51.9 billion in 2022, US\$53.8 billion in 2023, and peaked at US\$65 billion in 2024, making Indonesia a dominant force in regional e-commerce. Shopee accounted for the largest market share with 40% of national GMV, followed by Tokopedia at 30%. Bukalapak, TikTok Shop, Lazada, and Blibli contributed smaller portions. Shopee and Tokopedia, in particular, have aggressively pursued top-of-mind positioning by enhancing their platforms and boosting traffic. Tokopedia's visitors, for instance, surged by 140% from Q3 2019 to Q2 2022, showing fierce competition between the two, especially in improving user interface (UI), user experience (UX), and celebrity branding strategies.

From a marketing perspective, customer loyalty has emerged as a critical factor in measuring a platform's sustainability and effectiveness. This aligns with the research of Ali Abumalloh et al. (2020) and Kim et al. (2021), which emphasizes that loyalty within digital ecosystems must be examined through behavioral analysis, especially in how recommendation systems shape consumer choices and engagement. In an environment where online users easily switch platforms in search of better deals or experiences, loyalty becomes a moving target. Kawa and Zdrenka (2024) and Anora and Ginting (2025) argue that in digital commerce, loyalty is not easily swayed by price fluctuations but is more closely tied to consistent platform usage and user habits. In response to this, Tokopedia has revealed efforts to reduce its cost to serve by optimizing operational efficiency while maintaining service quality, thus attracting new users and reactivating dormant ones. Farmania et al. (2021) and Abdullah et al. (2024) affirm that understanding consumer behavior is crucial for designing effective e-CRM strategies to nurture loyalty. Tokopedia has acknowledged this by shifting towards data-driven marketing techniques aimed at personalization and customer retention, although inconsistencies in earlier studies reveal a gap in fully understanding how loyalty is developed in digital contexts.

Building on this, Karim et al. (2023) and Semwayo (2024) explain that e-CRM represents a modernization of traditional CRM by incorporating digital technologies that foster real-time communication and deeper customer insights. Through these tools, businesses can better understand customer needs, behaviors, and preferences, thus enhance loyalty and reduce operational inefficiencies. Farmania et al. (2021) add that before the digital age, CRM success relied heavily on human interaction skills. In contrast, digital platforms now demand integrated strategies that not only enable personalization but also improve UX. However, research by Haudi et al. (2022) and Karim et al. (2024) highlights inconsistencies in the statistical significance of the link between e-CRM and loyalty, suggesting unresolved gaps in understanding these relationships. The introduction of mediating variables-such as customer experience and engagement-has been proposed to better explain how e-CRM may influence loyalty. Sutriani et al. (2024), Vo et al. (2024), and Adiani et al. (2024) argue that younger users tend to show lower brand loyalty, highlighting the importance of experiential and engagement factors. Similarly, Tarigan et al. (2023) emphasize that customer satisfaction remains the cornerstone of loyalty, driving retention, repeat purchases, and positive referrals, which collectively build long-term value for brands.

Medjani and Barnes (2021) provide further insight into how e-CRM contributes to customer engagement, demonstrating a statistically significant relationship. By promoting

interactive and personalized communication, companies can better analyze and predict consumer behavior. Nonetheless, integrating behavioral data into CRM systems remains a challenge. Kuppelwieser et al. (2022) stress the importance of interactivity in shaping customer-brand relationships, while Tuguinay et al. (2022) confirm the positive impact of engagement on long-term brand loyalty. Retnosari and Nadlifatin (2024) also note that while trust enhances engagement, it is the perceived value and immersive digital experiences that ultimately drive purchasing decisions. These insights collectively support the notion that loyalty is shaped by more than just system quality-it also hinges on emotional engagement and perceived benefit. Therefore, this study seeks to investigate how electronic customer relationship management (e-CRM) directly influences e-loyalty among Tokopedia users in Indonesia, while also examining the mediating roles of e-customer experience and customer engagement. By addressing the inconsistencies in previous studies and incorporating these mediators, this research aims to provide a more comprehensive understanding of the mechanisms through which digital platforms can foster and sustain consumer loyalty.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Electronic CRM and Customer Experience

Electronic Customer Relationship Management (e-CRM) has become a central strategy in digital marketing, especially within e-commerce platforms aiming to foster long-term consumer relationships. As stated by Petzer and Tonder (2019) and Huddin et al. (2024), customer loyalty largely hinges on how customers perceive the value of their interactions with a business. These interactions help form emotional bonds and trust, which in turn influence repurchase behavior and advocacy. Furthermore, platforms that manage to attract high web traffic are better positioned to cultivate these loyal connections (Ipang et al., 2021). e-CRM initiatives focus on leveraging data and digital tools to enhance service personalization, responsiveness, and engagement. This approach has a direct bearing on customer experience, making it a vital intermediary in loyalty formation. Mokha and Kumar (2022), Ferreira et al. (2023), and Ali and Alfayez (2024) suggest that customer experience significantly mediates the effect of e-CRM on loyalty by creating service encounters that are interactive, seamless, and customer-centric. The quality of the digital experience offered-such as ease of navigation, speed of service, and platform usability-has been shown to boost customer satisfaction and emotional connection with the brand.

H1: e-CRM has a positive effect on e-loyalty.

H2: e-CRM has a positive effect on e-customer experience.

e-Customer Experience and Customer Engagement

Customer experience not only directly influences e-loyalty but also strengthens it through cognitive and emotional pathways. Studies such as those by Manyanga et al. (2022), Ali and Alfayez (2024), Shahzad et al. (2024), and Zhang et al. (2024) identify that brand attitudes-shaped by customer experiences-are instrumental in fostering e-loyalty. Repeat purchases, brand recommendations, and a lack of switching intention all signify robust customer loyalty, which stems from favorable experiences with the product or service. Tarigan et al. (2023) and Chow and Ho (2025) also note that verbal endorsements-where customers positively speak about a product's advantages-function as indirect indicators of brand loyalty. As customers become more emotionally and functionally satisfied, they are more likely to remain committed to a brand. This is particularly important in the e-commerce landscape, where consumers face a myriad of options and can easily shift to competing platforms. When a customer's journey is frictionless and personalized, the perceived value increases, deepening their connection to the brand. Customer engagement also plays a pivotal role in reinforcing these relationships. Harrigan et al. (2020) and Medjani and Barnes (2021) found that well-executed e-CRM systems increase customer participation through timely communication,

promotions, and feedback mechanisms. This involvement makes users feel more connected and valued, encouraging active behaviors such as content sharing, reviewing, and promotion. These engagement efforts not only support repeat usage but also amplify emotional loyalty.

H3: e-Customer experience has a positive effect on e-loyalty.

H4: e-CRM has a positive effect on customer engagement.

H5: Customer engagement has a positive effect on e-loyalty.

H6: e-Customer experience positively mediates the relationship between e-CRM and e-loyalty.

Mediating Effects of Experience and Engagement in Strengthening e-Loyalty

Beyond their direct influence, both e-customer experience and customer engagement act as critical mediators in the relationship between e-CRM and e-loyalty. Ali and Alfayez (2024) demonstrated that e-CRM indirectly boosts loyalty by enhancing customer experience, which improves users' emotional and cognitive perception of a platform's value. A seamless digital experience ensures that users not only return but also recommend the platform to others. Similarly, Medjani and Barnes (2021) found that increased engagement-driven by personalized communication and interactive digital tools-strengthens the impact of e-CRM strategies by encouraging deeper involvement and user participation. Customer engagement represents a consumer's behavioral and emotional investment in the brand. Studies by Tuguinay et al. (2022) and Meyer-Waarden et al. (2023) assert that engaged customers are more likely to demonstrate consistent loyalty, respond positively to marketing efforts, and act as brand advocates. Engagement manifests in actions such as participation in campaigns, reviewing products, or interacting through social media-behaviors that extend the consumer-brand relationship beyond simple transactions. This study aims to examine how e-CRM contributes to the development of customer loyalty in Indonesia's e-commerce landscape by incorporating e-customer experience and customer engagement as mediating variables. While existing literature supports the positive relationships between these constructs, research gaps persist regarding how these mediators operate simultaneously in a unified model. Thus, this study formulates a structured model to test both the direct and indirect effects of e-CRM on e-loyalty, offering a more holistic understanding of loyalty development strategies in digital commerce environments.

H7: Customer engagement positively mediates the relationship between e-CRM and e-loyalty.

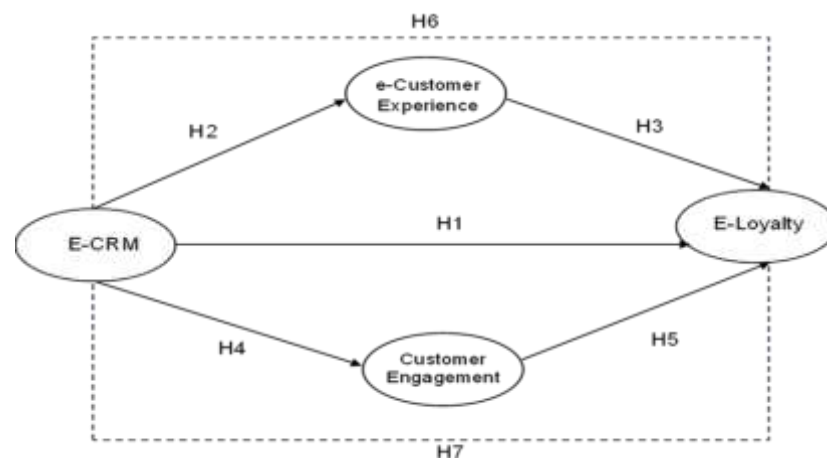


Figure 1. Research Framework

Based on Figure 1, the conceptual framework illustrates the relationship between Electronic Customer Relationship Management (e-CRM) and e-loyalty, mediated by e-customer experience and customer engagement. The model proposes that e-CRM directly influences both mediators, which in turn positively impact e-loyalty. This suggests that the implementation of effective e-CRM strategies-such as personalized services, responsive communication, and digital convenience-not only enhances the quality of customer experience but also encourages active customer involvement. Both elements are essential in building emotional bonds and reinforcing long-term loyalty in the e-commerce environment. The framework also reflects two indirect pathways: from e-CRM to e-loyalty through e-customer experience and from e-CRM to e-loyalty through customer engagement. This dual mediation approach highlights the importance of addressing both functional satisfaction and emotional connection to strengthen digital loyalty. Ultimately, this model serves as a guide for e-commerce businesses aiming to develop integrated relationship strategies to retain and grow their customer base.

RESEARCH METHODS

This study adopts a quantitative research design to systematically examine the factors that influence electronic loyalty (e-loyalty) within the context of Indonesia's digital marketplace. A structured questionnaire served as the primary instrument for data collection, allowing the researchers to obtain reliable and standardized responses from participants. The research framework is grounded in Relationship Marketing Theory, which emphasizes the importance of building long-term, value-driven relationships between businesses and their customers. In this model, two critical constructs-Customer Experience and Customer Engagement-are positioned as mediators to explore how they contribute to strengthening the relationship between Electronic Customer Relationship Management (e-CRM) and e-loyalty. The target population for this research comprises active Tokopedia users, chosen due to Tokopedia's prominence as one of Indonesia's leading e-commerce platforms. Given the absence of precise data on the total number of Tokopedia users, the study employed purposive sampling-a non-probability sampling technique. An online survey was conducted with 240 e-commerce customers across Indonesia. Participants were selected based on specific inclusion criteria relevant to the study's aims, ensuring that the data reflected insights from users with adequate interaction and experience on the platform. While this method does not allow for generalization to the entire population, it is effective for exploratory and theory-driven research focused on understanding specific consumer behaviors. Data analysis was performed using SmartPLS version 4.0, applying the Partial Least Squares Structural Equation Modeling (PLS-SEM) technique (Ghozali, 2016). PLS-SEM is particularly advantageous in this study due to its capability to analyze complex relationships between latent variables, accommodate non-normally distributed data, and handle both reflective and formative constructs. This approach is widely accepted in social sciences and behavioral research for its predictive accuracy and flexibility. To complement the structural modeling, descriptive statistical methods were used to summarize respondent demographics and general response patterns. The data collection process, executed through Google Forms, enabled efficient distribution and accessibility for a broad range of participants. Ultimately, the study provides empirical insights into how digital relationship strategies, customer experience, and engagement collectively drive loyalty on e-commerce platforms such as Tokopedia.

RESULTS

The results of the loading factor will be used to conduct convergent validity testing, which shows that the indicator value has an outer loading > 0.70 , which indicates that all indicators can still be used at an advanced stage and are considered valid.

Table 1. Validity Result

Indicator	Loading Factor
E-CRM1	0.814
E-CRM2	0.791
E-CRM3	0.829
E-CRM4	0.821
E-CRM5	0.816
E-CRM6	0.832
ECEX1	0.760
ECEX2	0.802
ECEX3	0.801
ECEX4	0.827
ECEX5	0.776
ECEX6	0.802
ECEX7	0.802
CE1	0.841
CE2	0.859
CE3	0.862
CE4	0.836
CE5	0.866
CE6	0.836
ELOY1	0.756
ELOY2	0.835
ELOY3	0.806
ELOY4	0.802
ELOY5	0.853

Based on the validity test results presented in Table 1, all indicators of the variables E-CRM, e-Customer Experience (ECEX), Consumer Engagement (CE), and e-Loyalty (ELOY) show loading factor values above 0.70. This indicates that each item has a good level of validity and is able to accurately reflect the latent construct being measured. In detail, the indicators for the E-CRM variable have loading factor values ranging from 0.791 to 0.832, showing a consistently strong relationship between the indicators and the E-CRM construct itself. The e-Customer Experience (ECEX) variable also shows relatively high loading factor values, ranging from 0.760 to 0.827, indicating that all indicators are valid in describing the electronic customer experience. Meanwhile, the Consumer Engagement (CE) variable exhibits higher loading factor values, ranging from 0.836 to 0.866, suggesting that the indicators of this variable have a very strong contribution to the formation of the consumer engagement construct. The e-Loyalty (ELOY) variable also meets the validity criteria, with loading factor values between 0.756 and 0.853, meaning that all indicators are valid in explaining electronic customer loyalty.

Table 2. Validity Result

Variable	Cronbach's Alpha	Composite Reliability	AVE
e-CRM	0.887	0.919	0.655
e-Customer Experience	0.879	0.911	0.631
e-Customer Engagement	0.903	0.929	0.686
e-Loyalty	0.861	0.905	0.656

Based on the results of the reliability and construct validity tests presented in Table 2, all research variables show Cronbach's Alpha, Composite Reliability (CR), and Average Variance Extracted (AVE) values that meet the required thresholds for a good measurement model. In detail, the e-CRM variable has a Cronbach's Alpha of 0.887, Composite Reliability of 0.919, and AVE of 0.655. These values indicate that the e-CRM construct possesses high internal consistency and strong convergent validity. The e-Customer Experience (ECEX) variable shows a Cronbach's Alpha of 0.879, Composite Reliability of 0.911, and AVE of 0.631, meaning that all indicators in this construct are reliable and can explain more than 63% of the variance of the measured construct. Furthermore, the e-Customer Engagement (CE) variable has the highest reliability and

validity values, with a Cronbach's Alpha of 0.903, Composite Reliability of 0.929, and AVE of 0.686. This demonstrates that the CE construct has excellent reliability and convergent validity, and that its indicators consistently represent electronic customer engagement. Finally, the e-Loyalty (ELOY) variable records a Cronbach's Alpha of 0.861, Composite Reliability of 0.905, and AVE of 0.656, indicating that all indicators in the e-Loyalty construct are also highly reliable and valid in representing the variable.

This study evaluated the significance of hypothesis parameters by comparing the obtained t-statistic values with the corresponding critical t-values. Specifically, a hypothesis is deemed statistically significant when the resulting t-statistic exceeds the critical threshold of 1.96, aligning with a 95% confidence level. These t-statistics are derived through a bootstrapping method, which enhances the robustness of the analysis by resampling the data repeatedly to estimate the parameter variability. If the t-statistic falls below 1.96, the parameter estimate is interpreted as not statistically significant (Ghozali, 2016).

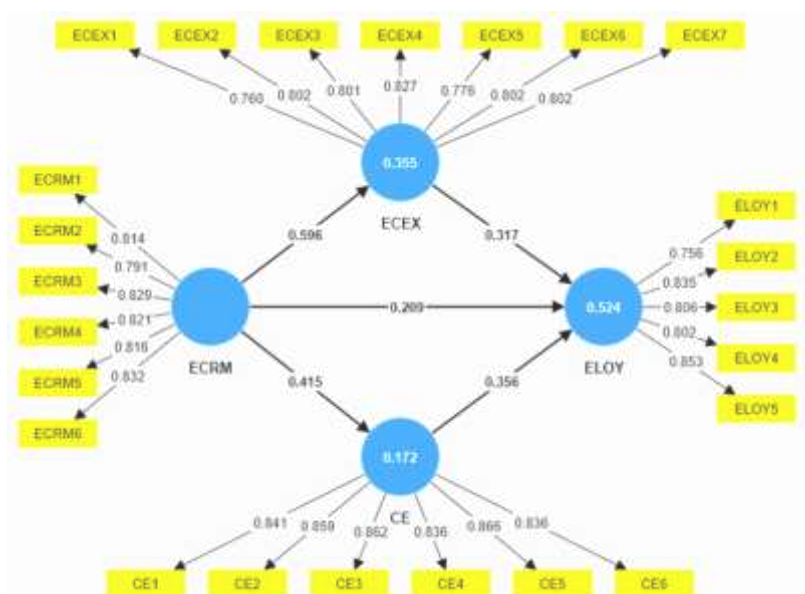


Figure 2. Structural Model Hypothesis Test of Direct Effect

The structural model depicted in Figure 2 illustrates the direct relationships among Electronic Customer Relationship Management (E-CRM), e-Customer Experience (ECEX), Customer Engagement (CE), and e-Loyalty (ELOY). The model shows that E-CRM significantly influences ECEX (path coefficient = 0.596) and CE (0.415), which in turn positively affect ELOY (0.317 and 0.356, respectively). Additionally, E-CRM directly contributes to ELOY with a path coefficient of 0.209. These findings highlight both direct and indirect pathways from E-CRM to e-loyalty. The inner circle values (R^2) indicate that E-CRM explains 35.5% of the variance in ECEX, 17.2% in CE, and 52.4% in ELOY. Each construct is measured through several indicators (e.g., E-CRM1–E-CRM6), all of which show strong factor loadings above 0.75, supporting measurement validity. Overall, the figure confirms that customer experience and engagement are key mediators in strengthening the effect of E-CRM on digital loyalty.

Table 3. Direct Effect

Hypothesis	Path Coefficient	T-Statistics	P-Values	Description	
H ₁	E-CRM -> ELOY	0.209	3.450	0.001	Significant
H ₂	E-CRM -> ECEX	0.596	9.472	0.000	Significant
H ₃	ECEX -> ELOY	0.317	4.611	0.000	Significant
H ₄	E-CRM -> CE	0.415	6.702	0.000	Significant
H ₅	CE -> ELOY	0.356	5.731	0.000	Significant

Based on Table 3, the results obtained for Hypothesis 1 demonstrate a statistically significant and positive relationship between electronic Customer Relationship Management (e-CRM) and electronic loyalty (e-loyalty). This finding is reinforced by a path coefficient of 0.209, along with a t-value of 3.450 and a p-value of 0.001, demonstrating a statistically significant relationship at a confidence level substantially under the typical 0.05 benchmark. According to the established criteria, where a t-value exceeding 1.96 and a p-value less than 0.05 indicate significance, these findings confirm that e-CRM meaningfully contributes to the enhancement of e-loyalty. In essence, the implementation of effective e-CRM practices can significantly boost customers' loyalty in the digital environment.

The results supporting Hypothesis 2 reveal that electronic Customer Relationship Management (e-CRM) plays a crucial and statistically significant role in shaping the e-customer experience. The analysis reveals a strong and significant positive effect of e-CRM on customer experience in the digital environment, indicated by a path coefficient of 0.596, a t-statistic of 9.472, and a p-value less than 0.001. These findings suggest that well-implemented e-CRM strategies contribute substantially to enhancing the quality and satisfaction of customer interactions in digital environments.

The electronic customer experience exerts a notably positive influence on electronic loyalty, as demonstrated by a path coefficient of 0.317, a t-statistic of 4.611, and a p-value of 0.000. The statistical findings demonstrate a significant and robust link, implying that improving interaction quality and user satisfaction on digital platforms is essential for building customer loyalty. The findings imply that when customers perceive their digital experience as seamless, engaging, and user-friendly, they are more likely to develop a sense of trust and commitment toward the platform or brand, ultimately encouraging repeat usage and long-term loyalty in the virtual marketplace.

Hypothesis H4 testing reveals a significant positive influence of electronic Customer Relationship Management (e-CRM) on customer engagement. The coefficient value stands at 0.415, accompanied by a t-statistic of 6.702 and a p-value of 0.000, signifying a robust and statistically significant relationship. These results underscore the importance of implementing effective e-CRM strategies, as they substantially contribute to fostering deeper customer involvement and interaction with the business.

Hypothesis 5 demonstrates that customer engagement significantly and positively affects electronic loyalty, as evidenced by a path coefficient of 0.356, a t-value of 5.731, and a p-value of 0.000. This suggests that increased customer involvement is closely linked to enhanced loyalty within digital environments.

Table 3. Indirect Effect

Hypothesis		Path Coefficients	T-statistics	P-values	Description
H ₆	E-CRM -> ECEX -> ELOY	0.189	3.917	0.000	Significant
H ₇	E-CRM -> CE -> ELOY	0.148	4.884	0.000	Significant

The results displayed in Table 3 offer compelling evidence regarding the indirect influence of Electronic Customer Relationship Management (e-CRM) on electronic loyalty (e-loyalty), as mediated by two critical variables: e-customer experience and customer engagement. The findings related to Hypothesis 6 highlight a statistically significant and positive indirect relationship between e-CRM and e-loyalty when mediated by e-customer experience. The path coefficient of 0.189, with a t-statistic of 3.917 and a p-value of 0.000, clearly exceeds the conventional significance thresholds ($t > 1.96$; $p < 0.05$). This indicates that improvements in digital customer experience significantly enhance the effect of e-CRM initiatives on customer loyalty. In practical terms, this means that when e-commerce platforms implement well-designed e-CRM strategies-such as responsive service, personalized communication, and user-friendly interfaces-they indirectly cultivate stronger customer loyalty by improving how customers experience the platform. A seamless, efficient, and emotionally engaging user experience not only increases satisfaction but also builds trust and emotional attachment, which are

critical for sustaining long-term consumer relationships in digital commerce. Similarly, Hypothesis 7 is also supported by the analysis. The data show that customer engagement significantly mediates the relationship between e-CRM and e-loyalty, with a path coefficient of 0.148, a t-statistic of 4.884, and a p-value of 0.000. These values demonstrate a strong and meaningful mediating effect. In this context, customer engagement refers to users' behavioral and emotional involvement with the platform, including actions such as product reviews, feedback, content sharing, and repeated interactions. When e-CRM systems are designed to encourage such interactions-through campaigns, push notifications, or loyalty programs-they strengthen the sense of connection between customers and the brand, which ultimately boosts their loyalty. These findings emphasize the importance of not only focusing on the technical aspects of e-CRM but also prioritizing customer experience and engagement as strategic mediators to foster deeper, longer-lasting digital loyalty.

DISCUSSION

This study confirms the central role of electronic Customer Relationship Management (e-CRM) in influencing key loyalty-building mechanisms within digital commerce. The direct relationship between e-CRM and e-loyalty (H1) yielded a significant result with a path coefficient of 0.209 and a t-value of 3.450. This finding is in line with Petzer and Tonder (2019) and Huddin et al. (2024), who argued that the perceived value of customer-business interactions plays a pivotal role in building consumer loyalty. It also corroborates the assertion by Ipang et al. (2021) that high traffic and effective e-CRM systems create durable emotional connections that sustain repeat behavior.

Furthermore, the strong relationship between e-CRM and e-customer experience (H2), with a path coefficient of 0.596 and a t-value of 9.472, reflects the growing importance of personalized, seamless, and responsive digital interactions. These results support prior findings by Mokha and Kumar (2022), Ferreira et al. (2023), and Ali and Alfayez (2024), who emphasized that well-executed e-CRM strategies enhance customer experiences and serve as a foundational pillar for loyalty. The study also demonstrated a significant positive impact of e-CRM on customer engagement (H4), as supported by Harrigan et al. (2020) and Medjani and Barnes (2021), who found that CRM-driven communication and digital tools foster greater user interaction, thereby strengthening engagement levels.

The results of this study reinforce the hypothesis that customer experience (H3) and engagement (H5) have significant positive effects on e-loyalty, confirming previous findings by previous researchers (Manyanga et al., 2022; Ali & Alfayez, 2024; Shahzad et al., 2024; Zhang et al., 2024). Specifically, the relationship between e-customer experience and e-loyalty yielded a path coefficient of 0.317, while customer engagement and e-loyalty showed a path coefficient of 0.356, both statistically significant. These findings demonstrate that customers who have positive, frictionless digital experiences and feel emotionally connected to a brand are more likely to remain loyal and engage in behaviors such as repurchasing, brand recommendation, and positive word-of-mouth, as discussed by Tarigan et al. (2023).

Moreover, the positive influence of customer engagement mirrors earlier studies by Tuguinay et al. (2022) and Meyer-Waarden et al. (2023), which emphasized that emotional and behavioral participation in digital platforms is a strong indicator of enduring brand relationships. The current study supports this, showing that platforms like Tokopedia can benefit significantly by encouraging deeper customer involvement through feedback loops, personalized messages, and interactive campaigns, to nurture long-term customer retention.

In terms of indirect effects, both e-customer experience and customer engagement significantly mediate the relationship between e-CRM and e-loyalty. Hypothesis 6 revealed that e-customer experience is a significant mediator, with a path coefficient of 0.189 and a t-value of 3.917. This aligns with Ali and Alfayez (2024), who stated that customer experience intensifies users' emotional and cognitive perceptions of a platform's value, contributing to higher loyalty. The seamlessness of the platform's interface, speed

of response, and perceived ease of use all contribute to enhancing loyalty indirectly through improved experience.

Similarly, Hypothesis 7 highlighted customer engagement as a meaningful mediator, with a path coefficient of 0.148 and a t-value of 4.884. This supports previous work by Medjani and Barnes (2021), suggesting that engagement is more than a byproduct of satisfaction; it is a deliberate, emotionally-driven action that fosters loyalty. The study underlines that when customers actively participate-through interactions like sharing content, reviewing products, or responding to campaigns-the impact of e-CRM on loyalty becomes more powerful.

CONCLUSION

This study underscores the essential role of Electronic Customer Relationship Management (e-CRM) in fostering customer loyalty within the digital retail environment. The findings demonstrate that e-CRM efforts-such as personalized communication, prompt service, and data-driven strategies-positively impact e-loyalty. Importantly, this relationship is not merely direct; it is significantly reinforced by the mediating effects of e-customer experience and customer engagement. A smooth, intuitive digital experience enhances satisfaction and builds trust, while engagement reflects users' emotional attachment and active interaction with the platform-both critical to sustaining long-term loyalty. The study reveals that these mediators strengthen the overall influence of e-CRM, emphasizing that loyalty stems not only from technical efficiency but also from meaningful customer relationships cultivated through consistent and engaging interactions. For e-commerce businesses, these insights suggest a strategic shift is needed: beyond investing in e-CRM systems, companies must also prioritize improving the digital customer journey and stimulating active user engagement. To this end, several practical recommendations are proposed. First, businesses should enhance their e-CRM through technologies such as AI, chatbots, and big data analytics to enable personalized and responsive service. Second, improving digital platform performance-by optimizing navigation, reducing loading times, and streamlining checkout processes-can significantly boost customer satisfaction. Third, to strengthen engagement, companies should implement loyalty programs, host interactive campaigns, and maintain consistent communication through digital channels like social media and email. Additionally, future research should explore broader market contexts, including global e-commerce platforms, to enable comparative analysis across different regions. Scholars are also encouraged to investigate other potential determinants of e-loyalty, such as pricing strategies, trust in the platform, and the security of transactions. Collectively, these efforts will contribute to a more holistic understanding of customer behavior and loyalty-building strategies in an increasingly competitive online marketplace.

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