The Post-Purchase E-CRM Paradox_ How Delivery, Tracking, and Customer Service Shape Customer Uncertainty, Trust, and Loyalty

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Abstract

This study examines how post-purchase electronic Customer Relationship Management (e-CRM) efforts function as uncertainty-management mechanisms that shape customer evaluations during fulfillment. Focusing on three key interventions—delivery performance, order tracking, and customer service—we investigate their effects on trust mechanisms (competence and benevolence), satisfaction, dissatisfaction, and loyalty. Using survey data from 1,124 online shoppers and a PLS-SEM model, the results show that delivery strongly enhances competence-based trust, increasing satisfaction and loyalty, while customer service reinforces both competence and benevolence and reduces dissatisfaction. Order tracking, however, exhibits a negative effect on satisfaction, supporting a transparency paradox in which increased visibility amplifies uncertainty rather than reducing it. Across all interventions, competence emerges as the dominant trust pathway, whereas benevolence exerts weaker influence. Satisfaction is the primary affective driver of loyalty, with dissatisfaction showing limited behavioral impact. The findings highlight the differentiated psychological mechanisms through which post-purchase e-CRM efforts influence customer outcomes and underscore the need to manage transparency carefully in digital fulfillment environments.

Keywords: *Post-purchase e-CRM; Delivery; Order Tracking; Trust Mechanisms; Loyalty.*

Track: Digital Marketing and Social Media

1. Introduction

Electronic commerce intensifies uncertainty in the post-purchase stage, where customers must wait for delivery, monitor progress, and rely on the retailer to resolve issues that are no longer under their control (Pavlou, 2003; Posselt & Gerstner, 2005). In this context, electronic Customer Relationship Management (e-CRM) tools—delivery updates, tracking systems, and customer service interactions—operate not only as operational features but as **marketing efforts** intended to manage uncertainty and sustain the customer relationship.

Although prior research establishes links between e-CRM and trust, satisfaction, and loyalty (Harrigan et al., 2008), most investigations focus on pre-purchase or purchase settings (Chen & Dibb, 2010; Gefen et al., 2003). The post-purchase phase remains underexamined, despite representing the most fragile moment of the customer journey. Existing work generally assumes that increasing communication and transparency reduces uncertainty (Gummerus et al., 2004; Parasuraman et al., 2005). However, emerging evidence shows that transparency can under certain conditions increase vigilance or perceived risk (Buell et al., 2017; Buell & Norton, 2011; Lurie & Swaminathan, 2009).

This study examines how delivery performance, order tracking, and customer service function as differentiated uncertainty-management mechanisms shaping trust (competence, benevolence), satisfaction, dissatisfaction, and loyalty. By isolating these interventions in the post-purchase phase, the study identifies the conditions under which e-CRM reduces uncertainty—and when it inadvertently amplifies it.

This research makes three contributions. First, it conceptualizes post-purchase e-CRM as a system of uncertainty-management mechanisms, moving beyond the view of uniform service enhancements. Second, it uncovers a transparency paradox, showing that tracking can trigger an uncertainty-amplification pathway that lowers satisfaction. Third, it demonstrates that competence is the dominant trust pathway in post-purchase contexts, clarifying the mechanisms through which uncertainty resolution shapes loyalty.

2. Literature Review

Post-purchase electronic Customer Relationship Management (e-CRM) encompasses digital tools used to manage customer interactions after payment, including delivery performance, order tracking, and customer service (Harrigan et al., 2008). Although prior work has examined e-CRM in pre-purchase and purchase stages (Chen & Dibb, 2010; Gefen et al., 2003), the post-purchase phase remains underexplored despite representing the moment of highest uncertainty and dependence on the retailer (Pavlou, 2003; Posselt & Gerstner, 2005). These interventions function as marketing mechanisms intended to manage uncertainty by signaling operational reliability and responsiveness. Delivery confirms fulfillment accuracy (Mofokeng, 2021), customer service manages emerging issues (Parasuraman et al., 2005), and tracking aims to reassure through transparency but may under some conditions increase vigilance or perceived risk (Buell et al., 2017; Buell & Norton, 2011).

Trust is central to post-purchase evaluations and is commonly conceptualized through competence (belief in the retailer's ability) and benevolence (belief in its intentions) (Mayer et al., 1995; McKnight & Chervany, 2001). Both mechanisms influence satisfaction and loyalty (Gummerus et al., 2004; Kim et al., 2008), yet they do not carry equal diagnostic value in all contexts. In the post-purchase phase—where uncertainty is performance-driven—competence is expected to dominate, as customers evaluate whether the retailer can fulfil promises. Delivery primarily reinforces competence, customer service may influence both mechanisms, and tracking can weaken competence if signals reveal variability or delays.

Satisfaction and dissatisfaction represent distinct affective pathways through which customers evaluate fulfillment performance. Satisfaction reflects confirmation of expectations, whereas dissatisfaction reflects negative affect due to unmet expectations (Holloway et al., 2005; Oliver, 1980). Satisfaction strongly predicts loyalty (Zeithaml et al., 1996), while dissatisfaction often exerts disproportionately negative effects in online environments, where negative experiences have stronger behavioral impact than positive ones (Barari et al., 2020; Lu et al., 2012). Post-purchase e-CRM efforts may activate different affective pathways: delivery tends to enhance satisfaction, customer service can reduce dissatisfaction, and tracking may reduce satisfaction by accentuating uncertainty.

Three gaps emerge from this literature. First, post-purchase e-CRM lacks a mechanism-based understanding of how specific interventions manage—or amplify—uncertainty. Second, transparency-related paradoxes remain insufficiently examined, particularly when tracking increases rather than decreases uncertainty. Third, the distinct roles of competence and benevolence in shaping post-purchase affective responses are not well understood. Addressing these gaps requires analyzing delivery, tracking, and customer service as differentiated uncertainty-management mechanisms that activate distinct trust and affective pathways influencing loyalty.

3. Theory and Hypothesis

3.1. Post-Purchase E-CRM as Uncertainty-Management Mechanisms

Post-purchase interactions occur under high perceived uncertainty because customers depend on the retailer to execute delivery, provide reliable information, and resolve emerging issues. Delivery performance reduces uncertainty by confirming operational execution; customer service reduces uncertainty by addressing problems; and tracking attempts to reduce uncertainty through transparency but may under some conditions amplify vigilance.

H1a–H1c: Delivery (H1a), tracking (H1b), and customer service (H1c) significantly influence trust mechanisms.

3.2. Trust Mechanisms as Dual Pathways

Trust consists of two mechanisms: competence (belief in the retailer's ability) and benevolence (belief in the retailer's intentions). In the post-purchase phase, uncertainty is performance-focused, making competence more diagnostic than benevolence. Delivery primarily updates competence: customer service may influence both mechanisms; tracking may weaken competence if signals are inconsistent.

H2a–H2b: Competence (H2a) and benevolence (H2b) significantly affect satisfaction.

H3a–H3b: Competence (H3a) and benevolence (H3b) significantly affect dissatisfaction.

3.3. Affective Pathways to Loyalty

Satisfaction and dissatisfaction represent distinct affective evaluations during fulfillment. Satisfaction typically strengthens loyalty, while dissatisfaction may reduce it but with weaker behavioral weight in online contexts. If trust reduces uncertainty, it should influence loyalty indirectly through these affective pathways.

H4a–H4b: Satisfaction (H4a) and dissatisfaction (H4b) significantly affect loyalty.

H5a–H5b: Satisfaction (H5a) and dissatisfaction (H5b) mediate the effects of trust on loyalty.

3.4. Sequential Mechanisms Linking E-CRM to Loyalty

If post-purchase E-CRM efforts function as uncertainty-management mechanisms, they influence loyalty through sequential psychological processes: trust formation followed by affective evaluation. Delivery, tracking, and customer service should therefore produce indirect effects on satisfaction and loyalty through competence and benevolence.

H6a–H6c: Delivery (H6a), tracking (H6b), and customer service (H6c) have indirect effects on satisfaction and dissatisfaction through trust.

H7a–H7c: Delivery (H7a), tracking (H7b), and customer service (H7c) have indirect effects on loyalty through trust and satisfaction/dissatisfaction.

4. Integrated Conceptual Model

The model in Figure 1 proposes that post-purchase E-CRM efforts act as uncertainty-management mechanisms that influence customer outcomes through a sequential process: they shape trust mechanisms (competence, benevolence), which in turn generate affective evaluations (satisfaction, dissatisfaction), ultimately driving loyalty. This captures the differentiated psychological pathways through which delivery, tracking, and customer service affect customer responses during fulfillment.

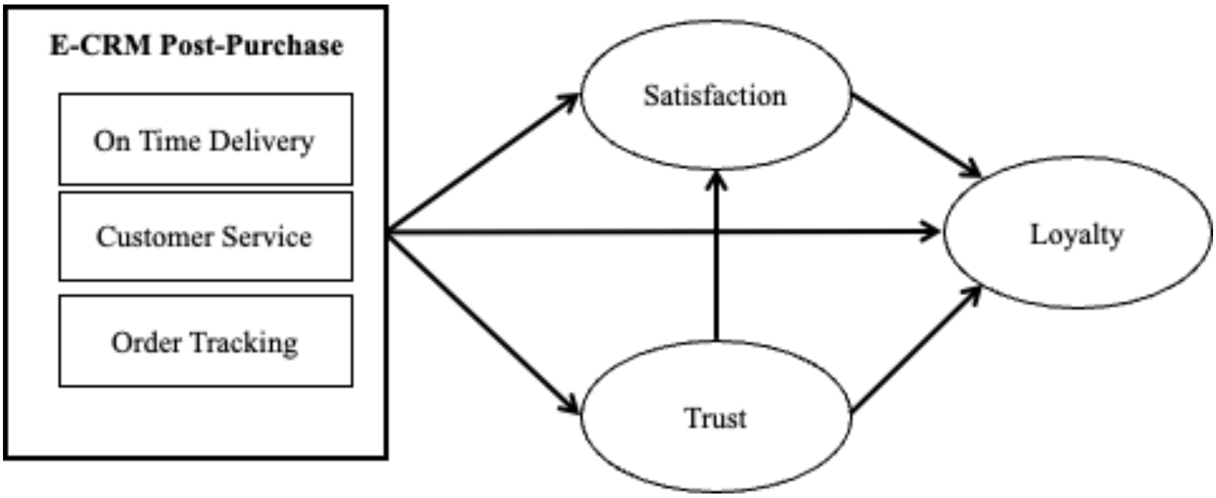

Figure 1. Conceptual model

5. Methodology

Research Design and Context: A quantitative survey was used to examine how post-purchase E-CRM efforts activate trust mechanisms and affective pathways. Respondents were required to have recent online shopping experience to ensure familiarity with delivery, tracking, and customer service interactions.

Data Collection and Sample: Data were collected online using non-probabilistic convenience sampling, a common approach in digital commerce research. A total of 1,124 valid responses were retained. The sample is predominantly young and digitally active, reflecting the demographic profile most engaged in online shopping.

Measurement Instruments: All construct were measured using established multi-item scales adapted to the post-purchase context. Items were rated on 5-point Likert scales. Post-purchase E-CRM efforts included delivery performance (timeliness, accuracy), order tracking (clarity, usefulness), and customer service (responsiveness, problem resolution). Trust mechanisms were measured as competence and benevolence. Affective evaluations included satisfaction and dissatisfaction. Loyalty captured repurchase intention and positive word-of-mouth.

Analytical Strategy: The model was tested using PLS-SEM due to its suitability for complex mechanism-based models and predictive analysis under non-normal data. Bootstrapping with 5,000 subsamples assessed the significance of direct, indirect, and sequential effects. Validity and reliability were evaluated using standard criteria, including factor loadings, Cronbach's alpha, composite reliability, AVE, Fornell–Larcker criterion, and HTMT.

Ethical Considerations: Participation was voluntary and anonymous, and informed consent was obtained prior to data collection.

6. Results

6.1. Measurement Model

All constructs met standard reliability and validity criteria. Factor loadings were within acceptable ranges, and Cronbach's alpha [0.871; 0.950], composite reliability'[0.833; 0.923], and AVE [0.722; 0.786] values confirmed internal consistency and convergent validity. Discriminant validity was confirmed. The square roots of the AVE values (0.850–0.887) exceeded all interconstruct correlations, satisfying the Fornell–Larcker criterion. HTMT values were below the .85 threshold, providing additional evidence of discriminant validity.

6.2. Structural Model

Path coefficients were estimated using PLS-SEM with 5,000 bootstrap subsamples. The model demonstrates strong explanatory power for trust mechanisms, satisfaction, dissatisfaction, and loyalty.

Effects of Post-Purchase E-CRM Efforts: Delivery performance significantly increased competence-based trust (β =0.337, $p<0.001$) and satisfaction (β =0.280, $p<0.001$) and didn't seem to significantly reduce dissatisfaction (β =0.038, $p=0.443$). Customer service positively influenced both competence (β =0.310, $p<0.001$), benevolence (β =0.342, $p<0.001$) and Satisfaction (β =0.214, $p<0.001$) and lowered dissatisfaction (β = -0.192, $p=0.003$). Order tracking produced a negative effect on satisfaction (β = -0.077, p=0.042), supporting the transparency paradox, and showed no substantial influence on trust.

Trust Mechanisms: Competence significantly increased satisfaction (β =0.415, p<0.001). Benevolence showed weaker and less negative effects on Dissatisfaction (β = -0.113, p=0.067).

Affective Pathways to Loyalty: Satisfaction strongly predicted loyalty (β =0.218, p<0.001), whereas dissatisfaction had a weaker and more limited insignificant effect, consistent with patterns observed online (β =0.043, p=0.117).

Indirect and Sequential Effects: Significant indirect relationships were observed. Delivery improved loyalty through competence and satisfaction (β =0.031, p<0.001). Customer service generated positive indirect effects through trust (Competence) and satisfaction (β =0.028, p=0.002). Tracking has no significant indirect effect on loyalty through its negative influence on competence and satisfaction. These findings support the view of post-purchase E-CRM as an uncertainty-management system operating through sequential trust and affective pathways.

7. Discussion

The findings show that post-purchase e-CRM efforts function through differentiated uncertainty-management mechanisms that shape customer evaluations through distinct trust and affective pathways. Delivery performance emerged as the strongest competence signal, directly reducing uncertainty and activating the satisfaction–loyalty pathway. Customer service operated as a dual mechanism by reinforcing both competence and benevolence, offering performance reassurance and relational support that reduced dissatisfaction and fostered satisfaction.

Order tracking produced the opposite pattern, supporting the transparency paradox: visibility into the fulfillment process can heighten vigilance and amplify uncertainty rather than reduce it. This negative influence on satisfaction indicates that transparency is not inherently reassuring but depends on the stability and interpretability of the signals presented during fulfillment.

Across mechanisms, competence consistently dominated benevolence as the primary trust pathway, reflecting the performance-critical nature of the post-purchase stage. Customers primarily evaluate whether the retailer can deliver as promised; intentions matter less when operational execution is uncertain. Satisfaction was the principal affective driver of loyalty, whereas dissatisfaction played a weaker role, consistent with the asymmetry common in digital service contexts where switching costs are low and minor inconveniences are normalized.

Finally, the results confirm a sequential psychological process: post-purchase e-CRM influences trust, trust shapes satisfaction and dissatisfaction, and these affective responses determine loyalty. Delivery and customer service reinforce this pathway by reducing uncertainty, while tracking weakens it by exposing variability. These insights highlight the need to view post-purchase e-CRM not as a set of uniform tools but as differentiated mechanisms that can either resolve or amplify uncertainty depending on how they are experienced.

8. Conclusion

8.1. Theoretical Contributions

This study advances understanding of post-purchase E-CRM by showing that delivery performance, tracking, and customer service act as distinct uncertainty-management mechanisms rather than uniform service tools. The findings identify a transparency paradox, demonstrating that tracking can amplify uncertainty and reduce satisfaction under certain conditions. The results also confirm that competence is the dominant trust pathway in performance-driven post-purchase contexts, while benevolence plays a secondary role. Finally, the study validates a sequential mechanism linking E-CRM efforts to loyalty through trust and affective evaluations.

8.2. Managerial Implications

Managers should view post-purchase interventions as differentiated levers rather than interchangeable touchpoints. Delivery reliability is the strongest contributor to trust and loyalty. Customer service should be designed to reinforce both ability and willingness to resolve issues. Tracking systems require careful calibration: overly detailed or inconsistent updates may heighten vigilance and reduce satisfaction. Firms should present tracking information in a way that reassures customers rather than increases their focus on potential problems.

8.3. Limitations

The study is based on cross-sectional self-reported data, which limits causal inference. The sample consists of active online shoppers, which may reduce generalizability to other segments or industries. Reflective measurement models may not capture dynamic fluctuations in uncertainty or trust during the fulfillment process.

8.4. Future Research

Future work should examine when transparency reassures versus amplifies uncertainty, considering factors such as delivery importance, and tolerance for ambiguity... Longitudinal or experimental designs could capture evolving trust and uncertainty across multiple transactions. Additional research should test alternative tracking formats and communication strategies to better understand the mechanisms underlying the transparency paradox.

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