

Factors Influencing Firms' Continuous Use of Artificial Intelligence in Customer Service in Ho Chi Minh City, Vietnam: An Integrated TPB-ECT Approach

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Abstract:

In the context of digital transformation, artificial intelligence (AI) has been increasingly adopted by firms in customer service activities to enhance operational efficiency and improve customer experience. However, sustaining the use of AI after the initial implementation stage remains challenging and has not been sufficiently examined at the organizational level. This study aims to investigate the factors influencing firms' decisions to continuously use AI in customer service by integrating the Theory of Planned Behavior (TPB) and Expectation-Confirmation Theory (ECT). Data were collected from 378 firms, with respondents being managers or personnel in charge of customer service and digital transformation initiatives. Partial Least Squares Structural Equation Modeling (PLS-SEM) was employed to test the proposed research model and hypotheses. The results indicate that attitude toward AI use, subjective norms, and perceived behavioral control have significant positive effects on firms' intentions to continuously use AI in customer service. In addition, expectation confirmation and satisfaction play critical roles in shaping positive attitudes toward continued AI use.

This study contributes to the literature by extending the applicability of TPB to the organizational AI context and clarifying the role of post-adoption factors in explaining technology continuance behavior. From a practical perspective, the findings provide valuable managerial insights for firms seeking to develop sustainable AI-driven customer service strategies.

Keywords — Artificial intelligence; customer service; continuance use; theory of planned behavior; PLS-SEM.

I. INTRODUCTION

In recent years, artificial intelligence (AI) has emerged as a core technology in firms' digital transformation efforts, particularly in customer service functions. Through applications such as chatbots, virtual assistants, intelligent customer relationship management systems, and customer behavior analytics, AI enables firms to enhance responsiveness, personalize service interactions, and maintain continuous engagement with customers [3], [5], [12]. The adoption of AI in customer service not only improves operational

efficiency but also contributes to higher customer satisfaction and loyalty [5], [12].

Despite the widely recognized potential of AI in customer service, empirical evidence suggests that many firms fail to sustain AI use beyond the initial implementation phase. In practice, AI adoption is often experimental and may lack sufficient alignment with organizational resources, digital platforms, processes, and capabilities [3], [7]. As a result, firms may suspend or abandon AI initiatives when expected outcomes are not achieved. This observation implies that AI adoption should be viewed not merely as an initial acceptance decision, but as a continuous behavioral process shaped by

organizational perceptions and experiences over time [2], [9].

Previous studies on technology use behavior, including AI-related research, have predominantly focused on initial adoption intentions or individual-level usage behaviors, such as those of consumers or employees [10], [11], [13]. In contrast, continuous AI use at the firm level—particularly in customer service contexts where AI must be deeply embedded into service strategies and operational processes—remains underexplored [3], [5], [12]. This research gap highlights the need for an appropriate theoretical framework to explain firms' motivations to sustain AI use in customer service.

The Theory of Planned Behavior (TPB) provides a well-established foundation for explaining behavioral intentions through three key determinants: attitude toward the behavior, subjective norms, and perceived behavioral control [1]. Prior technology acceptance studies further confirm that behavioral intention is shaped by perceived value, social influence, and perceived capability in technology-enabled contexts [10], [11]. However, TPB primarily emphasizes intention formation and does not fully account for the role of actual usage experience and post-adoption evaluations in long-term technology use [2], [9].

To complement TPB, Expectation–Confirmation Theory (ECT) emphasizes the role of expectation confirmation and satisfaction in shaping continuance intentions toward information systems [2]. Later studies on post-adoption technology use also show that users' continuance decisions are strongly affected by confirmation, usefulness, satisfaction, and accumulated experience after implementation [9]. Integrating TPB and ECT allows for a more comprehensive explanation of the transition from initial AI adoption to continuous AI use in customer service [1], [2], [9].

Accordingly, this study aims to examine the factors influencing firms' continuous use of AI in customer service by integrating TPB and ECT. Using survey data from 378 firms and applying PLS-SEM, the study seeks to contribute both theoretically and practically to understanding sustainable AI utilization in organizational customer service contexts [4], [8].

II. THEORETICAL BACKGROUND AND LITERATURE REVIEW

A. Artificial Intelligence in Customer Service and Continuance Use

Artificial intelligence in customer service refers to the deployment of intelligent systems—such as chatbots, virtual assistants, service robots, and data-driven automation tools—to support and enhance customer interactions [5], [12]. AI enables firms to process large volumes of customer inquiries, deliver personalized responses, and provide continuous service without temporal or human resource constraints [3], [5]. Because AI-based service often depends on real-time data exchange and stable service availability, network performance and standardized wireless connectivity also constitute operational infrastructure conditions for reliable AI-enabled customer service delivery [14], [15].

Prior studies have documented multiple benefits of AI adoption in customer service, including cost reduction, service quality improvement, automated frontline interaction, and enhanced customer satisfaction [3], [5], [12]. Nevertheless, implementation does not necessarily guarantee sustained use. Many firms encounter challenges related to investment costs, operational capabilities, employee acceptance, trust in technology, and realized performance, which may result in intermittent or discontinued AI use [6], [7].

The concept of technology continuance emphasizes firms' decisions to maintain and integrate technology into routine operations after initial adoption. In customer service contexts, AI continuance reflects firms' long-term commitment to embedding AI into service strategies and operational workflows. Understanding the determinants of AI continuance is therefore essential for explaining sustainable digital transformation outcomes [2], [3], [9].

B. Theory of Planned Behavior and Continuous AI Use

According to TPB, behavioral intention is determined by attitude toward the behavior, subjective norms, and perceived behavioral control [1]. In the context of AI use in customer service, attitude reflects firms' overall evaluation of AI benefits and effectiveness. Firms that perceive AI

as valuable for enhancing service quality and efficiency are more likely to develop strong continuance intentions, which is consistent with broader technology acceptance evidence [10], [11].

Subjective norms capture perceived pressures from key stakeholders, such as customers, competitors, and top management, regarding AI use. In increasingly competitive service environments, external expectations may significantly influence firms' decisions to sustain AI applications [1], [10], [12].

Perceived behavioral control reflects firms' beliefs about their ability to continuously operate AI systems, considering technological capabilities, human resources, managerial support, and financial capacity [1]. In organizational technology contexts, this perception is closely related to the availability of resources, trust in technological arrangements, and managerial confidence in system controllability [6], [10]. When firms perceive AI operation as manageable, their intentions to continue AI use are strengthened.

Although TPB provides a robust framework for explaining behavioral intentions, it does not explicitly incorporate post-adoption experiences, suggesting the need for theoretical integration with continuance-oriented perspectives [1], [2], [9].

C. Expectation–Confirmation Theory and Its Integration with TPB

ECT explains continuance behavior based on expectation confirmation and satisfaction derived from actual system use [2]. Expectation confirmation reflects the extent to which AI performance meets or exceeds firms' initial expectations. Positive confirmation leads to higher satisfaction, which in turn promotes continuance intentions [2], [9].

In customer service contexts, satisfaction with AI outcomes—such as improved response speed, customer experience, service consistency, or cost efficiency—can shape firms' attitudes toward sustained AI use [5], [12]. Integrating ECT with TPB allows satisfaction and confirmation to influence attitudes, thereby strengthening explanatory power regarding continuous AI use at the organizational level [1], [2], [9].

Based on this integrated perspective, the study proposes a TPB–ECT framework to explain firms' continuous AI use decisions [1], [2], [9].

III. RESEARCH MODEL AND HYPOTHESES

To examine the factors influencing firms' continuous use of artificial intelligence (AI) in customer service, this study develops an integrated research model based on the Theory of Planned Behavior (TPB) and Expectation–Confirmation Theory (ECT) [1], [2]. The integration of these two theoretical frameworks allows the model to capture both behavioral determinants and post-adoption evaluations that shape organizational decisions regarding sustained AI use [9], [10].

Within this framework, TPB explains firms' behavioral intentions through attitude toward the behavior, subjective norms, and perceived behavioral control [1]. ECT complements this perspective by emphasizing the role of expectation confirmation and satisfaction derived from actual system use, which are particularly relevant in explaining post-adoption and continuance behavior [2], [9]. The integration is also aligned with broader technology acceptance and use literature that emphasizes both pre-use beliefs and post-use evaluations [10], [11].

D. Attitude toward Continuous Use of AI

Attitude toward continuous AI use refers to a firm's overall positive or negative evaluation of maintaining AI applications in customer service activities [1]. Firms that perceive AI as effective in improving service efficiency, enhancing customer experience, and supporting operational performance are more likely to develop favorable attitudes toward continued use [5], [10], [12].

Prior TPB-based studies consistently demonstrate that attitude is a key determinant of behavioral intention in technology-related contexts [1], [10], [11]. In organizational settings, a positive attitude toward AI reflects management's belief that AI contributes meaningful value to customer service operations and aligns with long-term strategic objectives [3], [5].

H1: Attitude toward AI use has a positive effect on firms' intention to continuously use AI in customer service.

E. Subjective Norms

Subjective norms represent the perceived social pressure exerted by important stakeholders regarding the continuous use of AI in customer service [1]. These stakeholders may include customers, competitors, industry peers, and top management, whose expectations may shape organizational technology use decisions [10], [12].

In highly competitive and technology-driven markets, firms may feel compelled to sustain AI applications in response to customer expectations, platform-based service transformation, and competitive dynamics [7], [10], [12]. External pressure to remain technologically relevant may therefore influence firms' intentions to continue using AI, even beyond initial adoption.

H2: Subjective norms have a positive effect on firms' intention to continuously use AI in customer service.

F. Perceived Behavioral Control

Perceived behavioral control refers to firms' perceptions of their capability to continuously operate and manage AI systems in customer service [1]. This perception is shaped by the availability of financial resources, technological infrastructure, skilled personnel, managerial support, and trust in technology-enabled operations [6], [10].

When firms believe that they possess sufficient resources and capabilities to maintain AI applications, they are more likely to form strong intentions to continue AI use. Conversely, perceived constraints related to cost, technical complexity, data infrastructure, or human resources may weaken continuance intentions [6], [7], [10].

H3: Perceived behavioral control has a positive effect on firms' intention to continuously use AI in customer service

G. Expectation Confirmation

Expectation confirmation reflects the extent to which firms' initial expectations regarding AI performance are met or exceeded after actual implementation [2]. In the context of customer

service, confirmation may arise from improved response speed, service consistency, customer satisfaction, or cost efficiency [5], [9], [12].

According to ECT, positive confirmation strengthens satisfaction with system use, which in turn influences subsequent behavioral intentions [2]. Thus, expectation confirmation plays a critical role in explaining post-adoption evaluations of AI [2], [9].

H4: Expectation confirmation has a positive effect on satisfaction with AI use

H. Satisfaction with AI Use

Satisfaction refers to firms' affective evaluation of their experience with AI in customer service after actual use [2]. Satisfaction reflects the degree to which AI outcomes align with organizational expectations and perceived benefits [2], [9].

In an integrated TPB–ECT framework, satisfaction not only directly influences continuance intention but also indirectly shapes intention by reinforcing positive attitudes toward AI use [1], [2], [9].

H5: Satisfaction has a positive effect on attitude toward continuous AI use.

H6: Satisfaction has a positive effect on firms' intention to continuously use AI in customer service.

Based on the evaluation and development of the research hypotheses, the authors propose the research model as illustrated in Figure 1

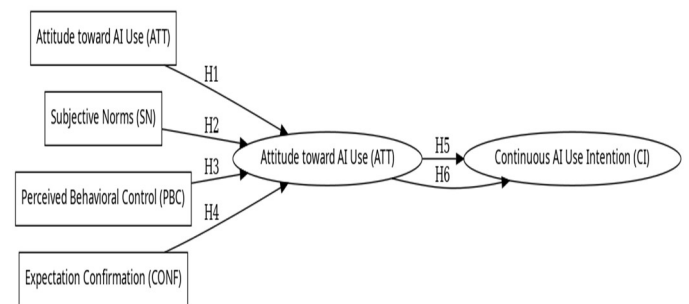


Fig. 1 A sample line graph using colors which contrast well both on screen and on a black-and-white hardcopy

IV. RESEARCH METHODOLOGY

I. Research Design and Data Collection

This study employs a quantitative research design to examine the factors influencing firms' continuous use of artificial intelligence (AI) in customer service. Data were collected through a

structured questionnaire survey targeting firms that have implemented AI applications in customer service activities. This design is appropriate for testing theoretically grounded relationships among latent constructs in a PLS-SEM framework [4].

Respondents were managers or personnel directly involved in customer service management, digital transformation initiatives, or AI-related decision-making processes within their organizations. This selection ensured that respondents possessed adequate knowledge and experience regarding AI adoption and usage in customer service contexts.

The survey was administered both online and in person over a three-month period. A total of 420 questionnaires were distributed, and 378 valid responses were retained after data screening, yielding a valid response rate suitable for multivariate analysis. The final sample size satisfies the minimum requirements for Partial Least Squares Structural Equation Modeling (PLS-SEM).

J. Measurement Instruments

All constructs in the research model were measured using multi-item scales adapted from established studies and modified to fit the organizational context of AI use in customer service [1], [2], [9], [10]. The measurement items were originally developed in English and were translated into Vietnamese using a back-translation procedure to ensure semantic equivalence.

Each item was measured on a five-point Likert scale ranging from 1 (“strongly disagree”) to 5 (“strongly agree”). The questionnaire consisted of two main sections: (1) measurement items for the research constructs and (2) demographic and organizational characteristics of the respondents and their firms.

Specifically, attitude toward AI use, subjective norms, and perceived behavioral control were adapted from prior TPB-based studies [1], [10]. Expectation confirmation and satisfaction were adapted from ECT-related research on information systems continuance [2], [9]. Continuous AI use intention was measured using items reflecting firms’ willingness to maintain and expand AI use in customer service operations, in line with prior

technology continuance and technology acceptance studies [9], [11], [13].

K. Data Analysis Technique

Partial Least Squares Structural Equation Modeling (PLS-SEM) was employed to test the proposed research model and hypotheses, using SmartPLS software [4], [8]. PLS-SEM is particularly suitable for this study due to its ability to handle complex research models, predictive research objectives, and data that do not necessarily meet normal distribution assumptions [4].

The data analysis followed a two-step procedure. First, the measurement model was assessed to evaluate the reliability and validity of the constructs. Second, the structural model was examined to test the hypothesized relationships among the constructs.

Measurement model evaluation included assessments of internal consistency reliability (Cronbach’s alpha and composite reliability), convergent validity (factor loadings and average variance extracted), and discriminant validity using the Fornell–Larcker criterion and the heterotrait–monotrait (HTMT) ratio [4].

L. Common Method Bias and Data Quality

To minimize potential common method bias, several procedural remedies were applied during questionnaire design and data collection. Respondents were assured of anonymity and confidentiality, and there were no right or wrong answers. Measurement items were also carefully worded to reduce ambiguity and evaluation apprehension, following common survey-quality procedures in PLS-SEM research [4].

Post hoc statistical tests were conducted to assess common method bias. The results indicated that common method variance was unlikely to pose a serious concern in this study, as no single factor accounted for the majority of variance in the data.

M. Ethical Considerations

The study was conducted in accordance with ethical research principles. Participation in the survey was voluntary, and respondents were informed about the purpose of the research. All collected data were used solely for academic

research purposes and were analyzed in aggregate form to ensure confidentiality and anonymity

V. RESULTS

N. Sample Description

The research sample consists of 378 firms that have implemented or are currently using artificial intelligence (AI) in customer service activities. Survey respondents were primarily senior managers, heads of customer service departments, and personnel in charge of digital transformation initiatives.

The sample characteristics indicate substantial diversity in terms of firm size and industry sector, which provides a comprehensive representation of the research context in Ho Chi Minh City, Vietnam. Overall, the sample is considered appropriate for examining organizational-level decisions regarding the continuous use of AI in customer service.

O. Measurement Model Assessment

Reliability and Convergent Validity:

The reliability of the measurement scales was assessed using Cronbach’s alpha (CA) and Composite Reliability (CR), while convergent validity was evaluated through outer loadings and Average Variance Extracted (AVE), consistent with recommended PLS-SEM assessment procedures [4].

TABLE I
 RELIABILITY AND CONVERGENT VALIDITY OF CONSTRUCTS

Construct	Number of items	Cronbach’s Alpha	CR	AVE
ATT	4	0.874	0.905	0.705
SN	3	0.821	0.883	0.716
PBC	4	0.862	0.901	0.695
CONF	3	0.845	0.895	0.741
SAT	4	0.881	0.917	0.734
CI	3	0.858	0.902	0.754

The results indicate that all constructs meet the recommended thresholds for internal consistency reliability (CA and CR > 0.70) and convergent validity (AVE > 0.50). Therefore, all measurement scales are deemed reliable and suitable for subsequent structural model analysis [4].

Discriminant Validity:

Discriminant validity was assessed using the Heterotrait–Monotrait ratio (HTMT), which is

commonly recommended for evaluating whether latent constructs are empirically distinct in PLS-SEM models [4].

TABLE III
 HTMT MATRIX

Construct	ATT	SN	PBC	CONF	SAT	CI
ATT	–					
SN	0.612	–				
PBC	0.645	0.587	–			
CONF	0.701	0.542	0.598	–		
SAT	0.732	0.566	0.621	0.744	–	
CI	0.769	0.613	0.668	0.701	0.758	–

All HTMT values are below the conservative threshold of 0.85, confirming that the constructs demonstrate satisfactory discriminant validity [4].

P. Structural Model Assessment

Multicollinearity Assessment:

Variance Inflation Factor (VIF) values for all independent variables are below 3, indicating that multicollinearity is not a concern in the proposed structural model [4].

Hypothesis Testing Results:

The hypotheses were tested using the bootstrapping procedure with 5,000 resamples, as recommended in PLS-SEM for assessing the significance of path coefficients [4], [8].

TABLE IIIII
 STRUCTURAL MODEL RESULTS

Hypothesis	Relationship	Path coefficient (β)	t-value	p-value	Result
H1	ATT → CI	0.381	6.742	0.000	Supported
H2	SN → CI	0.214	4.386	0.000	Supported
H3	PBC → CI	0.269	5.118	0.000	Supported
H4	CONF → SAT	0.612	12.904	0.000	Supported
H5	SAT → ATT	0.548	10.237	0.000	Supported

The results show that attitude toward AI use has the strongest effect on firms’ continuous AI use intention, followed by perceived behavioral control and subjective norms. In addition, expectation confirmation significantly influences satisfaction, and satisfaction has a strong positive effect on attitude toward AI use. These findings are consistent with the integrated logic of TPB and ECT [1], [2], [9].

Explanatory Power and Predictive Relevance:

The explanatory power and predictive relevance of the model were assessed using R² and Q² values, which are commonly used to evaluate the predictive quality of PLS-SEM models [4].

TABLE IVV
R² AND Q² VALUES

Endogenous construct	R ²	Q ²
SAT	0.375	0.281
ATT	0.468	0.326

The model explains 59.3% of the variance in continuous AI use intention, indicating a relatively high explanatory power in the context of organizational behavior research. All Q² values are greater than zero, confirming satisfactory predictive relevance [4].

Mediation Analysis:

The mediating role of attitude toward AI use in the relationship between satisfaction and continuous AI use intention was examined through indirect effects, consistent with the logic that post-adoption satisfaction may shape continuance both directly and through attitude formation [2], [9].

TABLE V
MEDIATION ANALYSIS RESULTS

Indirect relationship	Indirect effect	t-value	p-value	Conclusion
SAT → ATT → CI	0.209	5.864	<0.001	Partial mediation

The results indicate that attitude toward AI use partially mediates the relationship between satisfaction and continuous AI use intention. This finding suggests that satisfaction influences continuance intention both directly and indirectly through shaping firms' attitudes toward AI use [1], [2], [9].

Q. Summary of Results

Overall, the empirical results demonstrate that firms' continuous use of AI in customer service is driven by a combination of behavioral factors (attitude, subjective norms, and perceived behavioral control) and post-adoption evaluations (expectation confirmation and satisfaction). The findings provide strong empirical support for the integrated TPB–ECT framework in explaining organizational AI continuance behavior [1], [2], [9], [10].

VI. DISCUSSION

The purpose of this study was to examine the factors influencing firms' continuous use of artificial intelligence (AI) in customer service by integrating the Theory of Planned Behavior (TPB) and Expectation–Confirmation Theory (ECT). The empirical results provide strong support for the proposed integrated framework and offer several important insights into organizational AI continuance behavior [1], [2], [9].

First, the findings reveal that attitude toward AI use is the strongest determinant of firms' intention to continuously use AI in customer service. This result is fully consistent with the core premise of TPB, which emphasizes the central role of attitude in shaping behavioral intention [1]. In the organizational context, a positive attitude reflects firms' perceptions that AI delivers tangible value, such as improving service efficiency, enhancing customer experience, and supporting strategic objectives [5], [10], [12]. This finding reinforces the view that continuous AI use is not merely a technological decision, but rather a strategic and cognitive commitment formed through value-based evaluations [10], [11].

Second, perceived behavioral control exerts a significant positive influence on continuous AI use intention, highlighting the importance of organizational capability in sustaining AI adoption. This result suggests that firms are more willing to maintain AI use when they believe they possess sufficient technological infrastructure, human resources, managerial support, and financial capacity to operate AI systems effectively [1], [6], [10]. Compared with individual-level TPB applications, perceived behavioral control in this study reflects organizational-level competence, thereby extending the applicability of TPB to firm-level technology continuance decisions.

Third, the positive effect of subjective norms indicates that external pressures from customers, competitors, and industry trends also shape firms' decisions to continuously use AI in customer service. In increasingly competitive and technology-driven markets, firms may perceive AI adoption as an industry norm, a platform-based service requirement, or a strategic necessity [7],

[10], [12]. This finding underscores the role of institutional and competitive pressures in sustaining AI use beyond the initial adoption stage.

In addition to TPB-related factors, the results strongly support the relevance of post-adoption evaluations derived from Expectation–Confirmation Theory. Expectation confirmation has a significant positive effect on satisfaction, confirming that firms' evaluations of AI performance relative to their initial expectations play a critical role in shaping post-adoption attitudes [2], [9]. When AI delivers outcomes aligned with or exceeding expectations—such as faster response times, improved service quality, or cost efficiency—firms are more likely to develop satisfaction with AI use [5], [12].

Moreover, satisfaction directly influences both attitude and continuous AI use intention, highlighting its dual role in the integrated TPB–ECT framework. This finding demonstrates that satisfaction not only reinforces positive attitudes toward AI but also independently motivates firms to sustain AI use [2], [9]. Importantly, the mediation analysis further reveals that attitude partially mediates the relationship between satisfaction and continuous use intention, suggesting that satisfaction affects continuance both directly and indirectly through attitude formation [1], [2], [9]. This result provides empirical evidence for the complementary roles of TPB and ECT in explaining organizational technology continuance.

Taken together, the findings suggest that firms' continuous use of AI in customer service emerges from a complex interaction between behavioral beliefs, organizational capability, social pressure, digital-platform development, and post-adoption experience [3], [5], [7], [12]. Unlike initial adoption decisions, which may be driven by experimentation or external incentives, sustained AI use requires positive experiential feedback and alignment between expected and realized benefits [2], [9]. This insight advances existing literature by shifting the focus from AI adoption to AI continuance at the organizational level.

Overall, the discussion highlights that sustaining AI use in customer service is not solely a technological challenge, but a managerial and behavioral process involving expectation management, capability

development, trust in technology, and strategic perception of value [2], [6], [9]. The integrated TPB–ECT framework thus provides a comprehensive explanation of how firms transition from initial AI adoption to long-term, continuous use [1], [2].

VII. MANAGERIAL IMPLICATIONS

The findings of this study offer several important managerial implications for firms seeking to sustain the use of artificial intelligence (AI) in customer service activities. These implications emphasize that continuous AI use requires not only technological investment but also managerial attention to behavioral, organizational, and experiential factors [3], [5], [12].

First, the strong effect of attitude toward AI use on continuous use intention suggests that managers should actively cultivate positive organizational perceptions of AI [1]. Rather than viewing AI merely as a cost-saving tool, firms should communicate and demonstrate its strategic value in enhancing service quality, customer responsiveness, and long-term competitiveness [5], [12]. Clear articulation of AI-related benefits and success stories can help reinforce favorable attitudes among decision-makers and operational teams.

Second, the significant role of perceived behavioral control highlights the importance of organizational capability in sustaining AI use [1], [10]. Managers should ensure that sufficient resources are allocated to AI operations, including technological infrastructure, skilled personnel, and ongoing technical support. Investment in employee training, trust-building, and cross-functional collaboration can enhance firms' confidence in managing AI systems and reduce perceived operational barriers that may hinder continuous use [6], [7].

Third, the influence of subjective norms indicates that external and internal pressures shape firms' AI continuance decisions [1], [10]. Managers should pay attention to customer expectations, competitive dynamics, industry trends, and frontline service transformation related to AI-enabled customer service [7], [12]. Benchmarking against competitors and responding proactively to market expectations

may help firms maintain legitimacy and strategic alignment in increasingly digital service environments.

Fourth, the critical role of expectation confirmation and satisfaction underscores the need for effective expectation management during AI implementation [2], [9]. Managers should set realistic performance expectations for AI systems and establish clear evaluation criteria to assess AI outcomes. Regular monitoring of AI performance and alignment with service objectives can help ensure that realized benefits meet or exceed initial expectations, thereby fostering satisfaction and encouraging continued use.

Finally, the partial mediating role of attitude in the relationship between satisfaction and continuous use intention suggests that positive experiences with AI should be translated into sustained positive evaluations [1], [2], [9]. Managers can achieve this by systematically capturing feedback from AI operations, documenting performance improvements, and integrating AI outcomes into broader customer service strategies. Such practices may help transform short-term satisfaction into long-term commitment to AI-driven customer service.

Overall, the managerial implications indicate that sustaining AI use in customer service is a multidimensional challenge that extends beyond initial adoption. Firms that proactively manage perceptions, capabilities, external pressures, digital infrastructure, and post-adoption experiences are more likely to achieve long-term success in deploying AI as a core component of their customer service strategy [3], [5], [7].

VIII. LIMITATIONS AND FUTURE RESEARCH

Despite its theoretical and practical contributions, this study is subject to several limitations that should be acknowledged. Recognizing these limitations provides opportunities for future research to further extend and refine understanding of firms' continuous use of artificial intelligence (AI) in customer service [3], [5].

First, this study adopts a cross-sectional research design, which captures firms' perceptions and

behaviors at a single point in time. Although this approach is appropriate for testing the proposed TPB–ECT framework, it does not allow for examination of changes in AI continuance behavior over time [1], [2]. Future research may employ longitudinal designs to explore how firms' attitudes, satisfaction, and continuance intentions evolve as AI technologies mature and become more deeply embedded in customer service operations [9].

Second, the data were collected using a self-reported survey from organizational respondents. While respondents were selected based on their involvement in AI and customer service decision-making, perceptual measures may still be subject to common method bias or social desirability effects. Future studies could complement survey data with objective performance indicators, such as service response time, customer satisfaction metrics, AI usage logs, or platform-based operational records, to provide a more comprehensive assessment of AI continuance behavior [4], [7].

Third, the study focuses specifically on AI use in customer service, which may limit the generalizability of the findings to other functional areas. AI applications in areas such as supply chain management, human resource management, or strategic decision-making may involve different adoption dynamics and organizational considerations [3]. Future research could extend the integrated TPB–ECT framework to other organizational contexts to examine whether similar mechanisms explain AI continuance across functions [2], [9].

Finally, this research was conducted within a single national context. Cultural, institutional, technological, and regulatory factors may influence firms' perceptions and use of AI technologies [3], [7]. Comparative studies across countries or regions could provide deeper insights into how contextual factors, digital infrastructure, and technology standards shape organizational AI continuance behavior and enhance the generalizability of the findings [14], [15].

In summary, while the present study offers valuable insights into the determinants of firms' continuous use of AI in customer service, addressing these limitations through future research may further

strengthen theoretical development and practical understanding of sustainable AI adoption in organizational settings [1], [2], [3].

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