

THE EXPECTATION CONFIRMATION THEORY: A SERVICE PERSPECTIVE

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Abstract

The Expectation Confirmation Theory (ECT) focuses on understanding the key psychological processes related to individual expectations and fulfillment. Specifically, it examines the relationships between pre-consumption expectations and post-consumption experiences, which influence satisfaction and subsequent behavior. As human behavior is central to all social sciences, ECT has garnered significant attention and fostered research across various academic fields. This study provides a comprehensive analysis of ECT's application in psychology, management, and marketing, with a specific focus on its role in understanding service satisfaction and consumer behavior. Although this theory is widely used by marketers to explore consumer satisfaction and loyalty, its application in management to address service-related issues remains underexplored. The purpose of this study is to extend the literature on ECT by identifying under-researched areas and facilitating future theoretical and empirical studies. Identifying these gaps and offering suggestions for further research aims to reignite interest in the theory, enhance its applicability, and promote its broader use in service-related knowledge development.

Keywords: expectation confirmation theory; management theory; service satisfaction; customer loyalty; service satisfaction

INTRODUCTION

Expectation Confirmation Theory (ECT), initially developed by Oliver (Oliver, 1977, 1980), posits that individuals form expectations prior to experiencing a service or product, and after consumption, they compare these expectations with their actual experience. If performance meets or exceeds expectations, confirmation occurs, leading to satisfaction. Otherwise, disconfirmation results in dissatisfaction. Several scholars have revised the original version of the theory and proposed alternative theories to explain consumer satisfaction, loyalty, and service quality (Adams, 1963, 1965; Anderson, 1973; Wang & Wang, 2019; Weiner, 1985).

The primary context of ECT lies within consumer behavior and service marketing. This has prompted extensive research primarily focusing on understanding customer satisfaction, purchase intentions, and post-consumption attitudes. Researchers have applied the theory to study customer loyalty, service quality evaluations, and the dynamics of consumer decision-making (Chea & Luo, 2008).

In the fields of management and marketing, ECT has been embraced to examine service performance, customer relationship management, and business strategies. Scholars interested in organizational performance and service operations have used ECT to investigate employee satisfaction, service recovery, and business model innovation (Price et al., 1995). Despite its widespread adoption in consumer research, challenges remain in measuring constructs, such as disconfirmation and linking them to broader organizational or employee outcomes.

In the service industry, ECT is widely adopted to assess service quality management, customer relationship management, and service recovery strategies. Researchers in these fields have used ECT to examine how service providers manage customer expectations, handle complaints, and build long-term customer relationships, linking service performance with business success (Bitner et al., 1990). However, despite its prevalence in service marketing research, challenges remain in measuring the nuances of expectation-confirmation and disconfirmation, particularly when it comes to linking these to employee satisfaction or overall organizational outcomes.

However, recent efforts by scholars to refine and develop more accurate scales for measuring confirmation and disconfirmation have led to a renewed interest in ECT (Maertens et al., 2024). These advances have improved the theory's applicability in both the marketing and management fields. Ultimately, the study explores when and how ECT has been adopted by service researchers, assess whether adaptations to the original theory have occurred, and examine how the service industry can benefit further from the theory's ability to predict and explain customer satisfaction, loyalty, and service performance.

EXPECTATION CONFIRMATION THEORY: ORIGINS, REVISIONS, AND ALTERNATIVE THEORIES

Cognitive theory and expectation-confirmation theory explain that satisfaction after a purchase is influenced by initial expectations, actual performance, and any discrepancies between the two. This framework was established by Richard L. Oliver in 1977 (Oliver, 1977) and further refined in 1980 (Oliver, 1980). This theory is a fundamental research framework in consumer behavior research. The Expectancy Confirmation Theory (ECT) suggests that consumer satisfaction hinges on the relationship between what customers expect and how they perceive the actual performance of a product or service. When the performance aligns with or surpasses expectations, it results in confirmation and thus satisfaction. On the other hand, if the performance does not meet expectations, it leads to disconfirmation and dissatisfaction. This theory was first introduced in psychology literature through a three-phase field study examining responses to a newly launched car model. The theory's impact extends beyond initial consumer satisfaction measurements, influencing long-term customer loyalty and repurchase intentions. When consumers experience positive disconfirmation, where actual performance exceeds expectations, they are more likely to develop trust and emotional attachment to the brand. This psychological process creates a feedback loop that shapes future expectations and purchase decisions. The model also acknowledges that expectations are not static but evolve through direct experience, word-of-mouth communication, and marketing messages. Consumers continuously update their reference points based on accumulated knowledge and experiences. This dynamic nature of expectations highlights the importance of consistent product quality and service delivery in maintaining customer satisfaction. The theory's practical applications have expanded into various sectors, including healthcare, education, and digital services. Organizations use this framework to design customer experience strategies, set appropriate expectation levels through marketing communications, and implement quality control measures. Understanding the psychological mechanisms of expectation formation and satisfaction helps businesses prevent negative disconfirmation by either improving product performance or managing customer expectations effectively.

Previously, the effect of confirmation and disconfirmation of expectations on perceived product performance has received scant attention in the literature (Anderson, 1973), despite an apparent relationship between expectancy disconfirmation and product satisfaction. Rolf E. Anderson considered psychological theories in determining the disconfirmed expectations on perceived product performance and consumer satisfaction and revealed the gap between expectations and actual product performance. Moreover, the theory recognizes that satisfaction is not purely cognitive but involves emotional responses. The gap between expectations and performance can trigger various emotional reactions, from delight to disappointment, which significantly influence overall satisfaction judgments and subsequent consumer behavior.

ECT has undergone several revisions to address its limitations and enhance its applicability in various contexts. One notable revision is the inclusion of the concept of "disconfirmation sensitivity" (Ailawadi et al., 2001) which explores how different consumers may react differently to the same level of disconfirmation based on their prior experiences, personality traits, or situational factors. The authors suggest that people strategically manage the level of expectations they use to evaluate satisfaction after purchase and that satisfaction is not solely dependent on the objective comparison between expectations and performance, but is also influenced by individual differences in sensitivity to disconfirmation. The results show that perfectionists have higher expectations than non-perfectionists do.

Another significant extension of ECT involves integrating the theory with other psychological constructs such as fairness and equity. Researchers have argued that consumers' perceptions of fairness in the exchange process can moderate the relationship between disconfirmation and satisfaction. For instance, even if a product performs below expectations, consumers may still be satisfied if they perceive the transaction as fair. The high demand for intelligence and competition highlights the importance of interaction and fairness as key elements for solvers to meet their goals, implying that these factors could affect the level of confirmation. In response to these challenges, this research incorporates platform trust, interaction, and perceived fairness into an enhanced Expectation-confirmation model (Wang & Wang, 2019) to examine solvers' continuance intention. This study shows that satisfaction, perceived benefits, and platform trust, which are positively associated with confirmation, are three significant antecedents of solvers' continuance intention.

In addition to these revisions, several alternative theories have been developed to explain consumer satisfaction and post-purchase behavior. One such alternative is the Equity Theory (Adams, 1963) developed by psychologist J. Stacey Adams, which posits that consumers evaluate the fairness of the exchange by comparing

their input-output ratio to that of others. If they perceive the exchange as equitable, they are likely to be satisfied even if the product does not fully meet their initial expectations. Adams proposed that workers strive to achieve a balance between what they contribute to their jobs and the rewards they receive, comparing this balance to that of their peers. Disparities in these relationships can lead to dissatisfaction, which increases in relation to the level of inequality experienced. Feelings of anger arise from situations of underpayment, while overpayment can lead to feelings of guilt (Adams, 1965). Satisfaction arises from a perception of equitable exchange when a customer feels that they are receiving value relative to what they have given (e.g., money, time, effort). Inequity, either from overpayment (guilt) or underpayment (dissatisfaction), leads to negative feelings and dissatisfaction. By adding a fairness dimension to customer evaluations, Equity Theory broadens the factors influencing satisfaction, offering a complementary or alternative lens to ECT's focus on expectation confirmation.

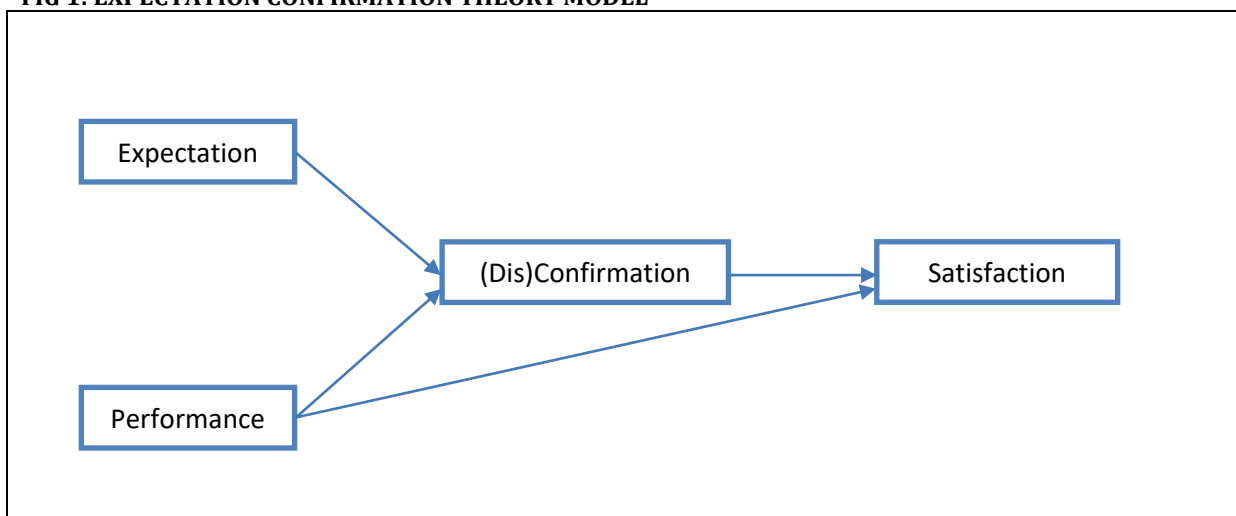
Another alternative is the Attribution Theory (Weiner, 1985), which suggests that consumers assign causes to the outcomes of their purchases, and these attributions affect their satisfaction. For example, if a product fails to meet expectations, consumers might attribute this to external factors (e.g., poor weather conditions affecting a delivery) rather than the product itself, which could mitigate dissatisfaction. Weiner suggests that post-purchase satisfaction or dissatisfaction arises from the consumer's attributions or explanations for why a product or service performed as it did. If customers attribute the outcomes to controllable factors by the company (e.g., poor service), they may be dissatisfied. If they attribute them to uncontrollable external factors (e.g., bad weather), dissatisfaction might be lower. This theory diverges from ECT by emphasizing the cognitive processes behind assigning responsibility for outcomes, which can affect satisfaction more than mere expectation confirmation.

Despite the emergence of these revisions and alternative theories, ECT remains a dominant model in consumer satisfaction research, particularly because of its simplicity and strong empirical support. It continues to be used extensively to predict consumer behavior in various industries, from retail to hospitality, and has been instrumental in shaping modern marketing strategies.

EXPECTATION CONFIRMATION THEORY IN SERVICE SECTOR

Expectation-confirmation theory describes how consumers evaluate their satisfaction with products or services. This explains the process through which consumers assess products and services, ultimately leading to satisfaction or dissatisfaction. Satisfaction plays a crucial role in consumer behavior and has significant implications for the success of the service sector. ECT provides a valuable framework for understanding customer loyalty and satisfaction, particularly in the service sector. Additionally, it serves as a useful tool for service providers to enhance service quality and understand and influence the satisfaction process. All service sectors use the concept of ECT to better understand consumer satisfaction and loyalty. Loyalty is indicated by passengers when the service provided meets an acceptable standard, resulting in satisfaction (Fu et al., 2018). The model primarily consists of four key concepts: confirmation, satisfaction, expectations, and performance. In ECT, expectations serve as a standard customers use to assess performance and determine disconfirmation outcomes (Halstead, 1999). Expectations represent objective criteria that customers rely on when evaluating service performance. Customers form specific expectations regarding a certain level of performance based on their experiences with a service, including how it is delivered. Purchase satisfaction arises when the service provided meets or exceeds expectations (Jiang and Klein, n.d.).

FIG 1: EXPECTATION CONFIRMATION THEORY MODEL



EXPECTATION CONFIRMATION THEORY IN RAILWAYS

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Expectation Confirmation Theory (ECT) is utilized across different service sectors, notably in public transport like railways. This theory posits that customer satisfaction is shaped by the relationship between what customers expect prior to receiving a service and the reality of their experiences during that service. When the service aligns with or surpasses their expectations, customers tend to feel satisfied. On the other hand, if their experiences do not meet their anticipations, it can lead to feelings of dissatisfaction (Jiang & Klein, 2009). Therefore, Passenger satisfaction with railway services depends on previous expectations and actual experiences. Railway services are expected to address various passenger needs and desires that cover every aspect of their travel experience. These expectations significantly influence overall satisfaction, aligning with the principals of expectation-confirmation theory. It has been argued that the judgement of service quality and the expectations of passengers are highly correlated to their overall satisfaction levels (Jiang & Klein, narvaizdas).

RAILWAY SERVICE EXPECTATIONS

Passenger expectations of railway services can vary based on several factors that influence overall travel experience. These expectations often depend on the quality of service, which includes the effectiveness of Information and Communication Technology (ICT) resources used for purchasing tickets and receiving live updates (Amudha et al., 2018). In addition, the aesthetic appeal and comfort level provided by trains are important (Schimkowsky, 2024). Finally, the planning and organization of various activities also play a crucial role in shaping these expectations (Korobiova, 2017). Innovations in the digital space, such as smart ticketing and AI-based customer interaction tools, have transformed the passenger experience, providing a new level of convenience and customization in railway services (Murthy et al., 2023). However, the combination of chronic underinvestment and management mistakes has led to a decline in the quality of railway services (Ali & Singh, 2018). Passenger perceptions of service quality may vary based on their travel frequency; for instance, infrequent travellers may have different expectations than frequent travellers (Bezerra et al., 2021). The introduction of high-speed trains is likely to elevate expectations for other travel options as these trains tend to offer greater comfort and efficiency (Parkhomenko, 2014).

PUNCTUALITY AND EXPECTATIONS

The punctuality of a railway system is crucial to its operational performance, customer satisfaction, and customer expectations. Punctuality is an important measure when evaluating train services and also functions as a driver of passenger satisfaction (Palmqvist et al., 2020). While punctuality is definitely a core area of concern within the industry, it is also subject to the influence of climate, infrastructure, and operational determinants (Palmqvist et al., 2020). However, punctuality is not the only determinant factor contributing to customer satisfaction; other contributors include train frequency, congestion level, and time distance (Murakoshi et al., 2010). Studies have established that punctuality has a straightforward and dependable influence on customer satisfaction and loyalty, and regardless of time delays, promoters and passengers can be spared from the unavailability of provisions, which leads to poor experience (Gs & Istanti, 2022). Intelligence and deliberations of postponement provisions, such as those used in Slovakia, lead to an understanding of clientele expectations, and how best to address any dissatisfaction can boost satisfaction levels (Dolinayova et al., 2016). Punctuality, which can be best understood as a feature of railway service, bears a direct relationship with the satisfaction of the customer's needs, feelings, and expectations, and is a fundamental aspect of railway service that directly affects customer satisfaction and expectations. Although it is a critical component, it operates within a broader context of service quality factors that collectively influence passenger experiences. To enhance customer satisfaction, railway operators must consider a comprehensive approach that includes punctuality, service quality, and effective communication and compensation strategies for delays (Dolinayova et al., 2016) (Gs and Istanti, 2022) (Murakoshi et al., 2010) (Palmqvist et al., 2020).

CUSTOMER SERVICE AND EXPECTATIONS

Customer satisfaction is closely related to the delivery of services and expectations of customers. Research shows that customer satisfaction is likely to be high when railway services meet or exceed passengers' expectations (Ali et al., 2022) (Kumsa, 2020) (Ratnawita et al., 2023) (Sari & Dirbawanto, 2023). Service quality dimensions such as reliability, responsiveness, and convenience, plays a significant role in shaping customer expectations and satisfaction (Ali et al., 2022) (Kumsa, 2020) (Ratnawita et al., 2023) (Sari & Dirbawanto, 2023). Few studies have shown that customer expectations have no significant impact on customer satisfaction in certain contexts (Ratnawita et al., 2023), while others have highlighted a positive and significant relationship between service quality dimensions and customer satisfaction (Ali et al., 2022) (Bogale & Gizat, 2021) (Kumsa, 2020) (Zewdie, 2021). The level of passenger satisfaction in railway services is significantly affected by how well the quality of service aligns with or surpasses customer expectations. Improving customer satisfaction requires attention to various aspects of service quality, including reliability, responsiveness, and convenience. Customer expectations can vary widely and satisfying customers in one context may not apply universally (Dike et al., 2023) (Hassan et al., 2012) (Nobilo, 2023) (Ratnawita et al., 2023) (Udo et al., 2010). Therefore,

railway service providers should continuously assess and adapt to the evolving expectations of their customer bases to maintain and improve their satisfaction levels.

COMFORT AND EXPECTATIONS

Passenger comfort and ease are important elements for satisfying and meeting the expectations of clients in railway transport systems. The literature indicates that seat design elements, such as the width, depth, and height of such seats, as well as the shape of the cushion and backrest angle, are important for passenger comfort in railway coaches (Zhang et al., 2011). For instance, ticket price, speed, and security also enhance overall satisfaction in journeys, whereas comfort is the third component of the satisfaction evaluation system for passengers (Jiang et al., 2013). Other convenience factors such as booking of tickets, timeliness, and hygienic conditions are also important aspects of satisfaction level (Srinivas et al., 2024; Zhen et al., 2018). The state of infrastructure, including the facilities and services provided at the station, also determines customer satisfaction (Perera et al., 2023). With regard to high-speed rail transportation, the provision of services such as free Wi-Fi and improving accessibility are recommended to improve passenger satisfaction (Liu & Putro, 2024).

Information and communication and expectations

The railway industry's expectations for information and communication support the seamless operation and modernization of rail systems. This involves not only the implementation of advanced technologies but also ensuring that these technologies are integrated within a market model that promotes efficiency and responds to the dynamic needs of the industry (Belnitsky, 2021; Tshabalala & Mpofu, 2023; Zaborski & Avramović, 2018). The challenge lies in harmonizing technological advancements with market demands and the development of soft skills among railway professionals to navigate the changes brought about by 4IR (Zincume, 2024).

PRICING AND EXPECTATIONS

Revenue generation and passenger inflow are largely influenced by railway pricing policies. Recent studies have shown that passenger demand directly impacts the strategies used to price tickets. Such expectations from passengers increase the probability of purchasing tickets (Qin et al. 2019). Furthermore, it has been shown that approximately 23% and 285% increases in expected ticket revenues can be generated by differential pricing and dynamic pricing, respectively, and Many Studies have also suggested that, along with differential pricing, more revenue generation will occur with the use of specific segments of passengers' purchasing powers. Based on the data collected through the surveys conducted during off-peak periods, an increase in revenue of 10.41% and peak period fuel increase in revenue of approximately 7.98% (Qin et al., 2019). A cooperative approach to planning train stops and determining ticket prices increases the total revenue from ticket sales by 27% (Xia et al., 2022). This also demonstrates the necessity of evaluating customer satisfaction and perceived value in the pricing strategies undertaken. The connection between pricing efficiency and service quality was also established, and it was found that of the thinking of 15 trains, ten suffered pricing inefficiencies (Farimani et al., 2022).

SAFETY AND EXPECTATIONS

Safety on railways is one of the highly focused areas in the industry, with the implementation of different measures and systems intended to cater to the safety of passengers, employees, and installations. Safety on railways is a diverse combination of many factors, such as legislation and regulations, organization of services, control of traffic, and the quality of devices in the railway infrastructure (Burdzik et al., 2017). Despite the fact that many technological advances have made it possible to improve railway safety, human factors still have an impact. For example, the deployment of safety systems such as ATC and ERTMS is fairly beneficial, but new technical devices and vagueness of responsibilities create some problems. It brings out the inadequacy of technological revolution at the expense of human ideologies and lacks unambiguous definitions at every organizational level. The railway sector has continually expanded since there has been an increase in the demand for capacity, safety, and customer satisfaction. There are projections that the adoption of smart technologies, such as artificial intelligence and machine learning, will enhance rail industry cooperation, integration, and autonomy (Dong et al., 2019). However, as the industry continues to advance, it is essential to protect existing standard regimes, human elements, and operational responsibilities to sustain and improve railway safety in the process of continuous development and advancement.

CLEANLINESS AND EXPECTATION

As noted above, different modes of transportation have both positive and negative effects on society. According to Vo et al. (2015), railway systems are the most sustainable, as they provide an increased capacity for carrying more loads apart from being environmentally friendly relative to other modes of transport. The same cannot be said when discussing cleanliness and the image of teacher-focused businesses. Throughout the previous decades and today, one of the main concerns of railways is the maintenance of cleanliness, keeping up with the

expectations of customers, and how to delicately approach the management of such expectations. In other words, in such an environment, where failure to keep the railway infrastructure clean and well-maintained impacts reliability, safety, and customer satisfaction, this would pose a challenge to the zeal of performing one's duties to utmost standards. As the demand for the services offered by the rail transportation sector grows, the rail industry is still plagued by inefficiency, unreliability, and lack of safety. To meet such demands, Dong et al. (2019) noted that powerful tools, such as artificial intelligence, big data, and machine learning, are being incorporated into the sector to enhance railway autonomy, collaboration, and integration of services. Such technologies would be useful in optimizing operations, improving maintenance practices, and eventually the passenger experience. For instance, rolling stock data can be used in machine learning methods to improve reliability and safety features during manufacturing, assembly, and maintenance processes while reducing costs (Bezuidenhout et al., 2023). Railways are expected to remain clean while fulfilling passenger expectations. Maintaining cleanliness and meeting passenger expectations on railways requires a multifaceted approach. This includes implementing effective maintenance procedures; leveraging intelligent technologies; and continuously improving operational practices to ensure a high-quality, reliable, and safe transportation system that meets the evolving needs of passengers.

DISCUSSION

In light of the literature reviewed, it is evident that service management scholars have utilized the Expectation Confirmation Theory (ECT) to explain customer attitudes and behaviors during service delivery and organizational transformations. ECT has been applied to explore the psychological processes behind customer satisfaction, dissatisfaction, and loyalty, as well as to predict service recovery outcomes and customer behavioral intentions. While ECT has significantly contributed to the understanding of these topics and has encouraged further research, service scholars have generally applied the theory without making significant revisions. Consequently, its use in the service field has enhanced its generalizability without contributing new theoretical developments.

One of the key areas in service management research where ECT has been applied is service quality management. Studies have used the theory to understand the factors that promote or hinder successful service recovery and customer satisfaction. A major finding of these studies is the crucial role of customer engagement and involvement in reducing disconfirmation and enhancing service satisfaction. Moreover, ECT has been instrumental in understanding the psychological processes behind customer resistance to service changes during realignment, misalignment, or transformation phases. As a next step, service scholars could expand the implications of the theory by exploring disconfirmation reduction methods within transformed service organizations, discussing the roles of service recovery teams and customer experience management in implementing such strategies.

ECT has also been applied to comprehend the psychological processes underlying service-related ethical conflicts. These conflicts are often cited as significant precursors to customer dissatisfaction and disengagement, as well as managerial frustration when addressing ethical dilemmas in service delivery. As in service quality management, the role of disconfirmation reduction strategies has not been extensively explored in studies on service ethics, creating opportunities for future research.

Within the domain of service operations and behavior research, ECT has been used to study entrepreneurial behavior in service-based startups, as well as the behavioral intentions and satisfaction levels of service employees. However, these studies have primarily applied the theory as an explanatory mechanism for intention-satisfaction relationships rather than contributing to the theory itself or integrating it with related frameworks such as service-dominant logic or relationship marketing theories. To increase the utility of ECT in service management, future studies could integrate the theory into research on various service-related issues, such as service justice, decision-making processes for service managers and employees, the adaptation of newcomers or minority customers in different service settings, the psychological factors driving deviant customer behaviors, and the maintenance of service team harmony through alignment of employee and customer expectations. Moreover, rather than merely adopting ECT's assumptions, challenging and refining some of its premises for service-specific contexts is essential for advancing knowledge in service management. ECT remains an influential theory in explaining and predicting customer behavior, particularly in relation to service quality and satisfaction. Its application has yielded important managerial insights, particularly in the areas of customer retention and loyalty. While ECT has been used to connect various aspects of consumer behavior, there is little evidence of the theory transforming or evolving into new models or frameworks. Therefore, it can be concluded that while ECT's contribution to service marketing knowledge is substantial, there is still ample room for further research.

ECT's application in service marketing has helped increase its generalizability, but it has not led to significant modifications of the theory's core concepts, relationships, or assumptions. Service scholars have primarily adopted and applied the theory as originally proposed by Oliver.

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