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Article

Cognition in Fashion E-Commerce and Sustainability Design

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Abstract: The rapid expansion of the e-commerce landscape requires companies to understand the mechanism through which the purchase intention of customers could translate into their favourable experiential outcomes. As such, the present study aims to extensively investigate the mediating role of perceived service quality (PSQ) in the relationship between online shopping intention (OSI) and customer experience (CX) in the context of online fashion retailing. A quantitative study was conducted, collecting the data from 467 online fashion shoppers to test the proposed research model using Structural Equation Modelling (SEM). The results revealed that OSI positively influences PSQ and CX, and that PSQ, in turn, significantly enhances CX. Furthermore, PSQ fully mediates the relationship between OSI and CX. The findings of the study theoretically revealed reconceptualizing service quality as an experiential mechanism rather than merely an antecedent of satisfaction. Therefore, the managers and e-retailers should prioritize reliable service delivery, transparent communication, personalization, and seamless return processes to enhance customer experience and foster long-term engagement.

Keywords: Customer Experience, Online Shopping Intention, Perceived Service Quality, Fashion E-Commerce.

1. Introduction

Digital retailing has moved from a transaction-based environment to an experience-driven ecosystem where customers are increasingly evaluating online purchasing platforms through emotional, cognitive, and psychological interactions. In such a competitive market, customer experience (CX) plays a pivotal role in influencing consumer satisfaction, trust, participation, and long-term behavioural results (Wang et al., 2023; Zeng et al., 2023; Hui et al., 2025). Fashion e-commerce is one of the most experience-sensitive retail environments where customers cannot physically examine products before purchase (Rezaei, 2025).

Prior research identified that CX in digital environments goes beyond transactional satisfaction and includes cognitive appraisal, emotional involvement, trust creation, and behavioural responses across various digital touchpoints. (Pappas, 2016; Gursoy, 2026; Shahzad et al., 2024). Such a digital environment evolves the concept of holistic CX, intensely rooted in unfolding the aspects of satisfaction, loyalty, engagement, and advocacy of the customers that the e-retailers encounter while developing the future course of action (Pires et al., 2025; Sun et al.,2019; Ariff et al., 2014). Despite the convenience and information richness of online platforms, customers are sometimes uncertain about the dependability of services, the authenticity of products, the security of transactions, and the

performance of delivery. In this situation, perceived service quality (PSQ) acts as an important mechanism through which customers evaluate their overall experiences. (Lemon & Verhoef, 2016; Izogo & Jayawardhena, 2018). As the reliability, competence, and integrity of those services subsequently influence their trust perceptions and perceived risk during performing web transactions, it is challenging for businesses to provide quality services enabled with personalized features, virtual try-ons, real-time interaction, or online transaction tracking (Gupta & Mukherjee, 2022; Grewal et al., 2021). Thus, PSQ would become a key determinant of how customers construct their overall online shopping experience.

The fast growth of e-commerce has increased academic interest in the effect of e-service quality on customer satisfaction, behavioural intention, and experiential outcomes in online buying contexts (Mahadevan & Joshi, 2022; Liao et al., 2022). This research extends the traditional customer satisfaction view to a wider and multidimensional CX framework. This is particularly relevant in the context of online fashion shopping for garments, shoes, and accessories, where the absence of physical interaction, reliance on visual product representation, sizing uncertainty, and frequent reverse logistics play a significant role in consumers' experiential evaluations. (Kuppelwieser & Klaus, 2021). Therefore, the current study provides an integrated framework to investigate the effect of online shopping intention (OSI) and perceived service quality (PSQ) on total customer experience (CX) in fashion e-commerce. In addition, the literature considered service quality as an antecedent rather than a psychological perception influenced by the prior purchase intention (Tripathi *et al*., 2024; Mtotywa & Kekana, 2023; Türkdemir et al., 2023). The present study advocates adopting a complementary perspective, offering a new behavioural interpretation grounded in consumer psychology. Based on Expectation Confirmation Theory (ECT) and Cognitive Bias Theory (CBT), this study investigates the mediating role of PSQ by explaining that customers with a higher intention to shop online are likely to positively interpret the service-related cues, thus converting the purchase intention into experiential outcomes in digital fashion retail contexts. Based on the above discussion, the present study seeks to address the following research question: How does perceived service quality (PSQ) mediate the relationship between online shopping intention (OSI) and customer experience (CX) in the fashion e-commerce context?

The remaining part of the paper is organized as follows. Section 2 reviews the relevant literature and theoretical underpinnings of the investigation. Section 3 describes the conceptual framework and the development of hypotheses. Section 4 shows the quantitative results and findings. Finally, Sections 5 and 6 discuss the theoretical implications, managerial contributions, limitations, future research directions, and conclusion of the study.

2. Prior synthesis of the literature

The rapid adoption of digital technologies results in a revolution in global commercial transactions and accelerates the growth of e-commerce (UNCTAD, 2023). In response to the inherent features of accessibility, timeliness, convenience, and interactivity offered by digital platforms (Shankar *et al.,* 2022; Kannan, 2017), customers can effortlessly develop their cognitive thinking and significantly shape their online shopping intention, reflecting their willingness and preparedness to engage in online purchasing behaviour. As they are exposed to the external stimuli like optimum product variety, best quality, competitive pricing, personalised services, alternative payment gateways, easy delivery, or reverse logistics (return), if required (Oliver, 1997; Venkatesh *et al*., 2003) by navigating the interconnected digital touch points, it reflects their willingness and preparedness to engage in online purchasing behaviour. Thus, online shopping becomes highly *experiential*, focusing on the complex interplay of their affection, cognition, and behaviour in this digital setting (Schmitt, 1999; Lemon & Verhoef, 2016).

However, the customers are still reluctant to engage in digital shopping due to the inherent existence of anonymity, information asymmetry, or inability to verify the products physically (Pavlou, 2003). This necessitates considering major psychological constructs like risk, trust, perceived value, perceived enjoyment, etc., which play critical roles in elevating the CX as a strategic differentiator influencing consumer behaviour (Gefen *et al*., 2003; McKnight *et al*., 2002). Furthermore, the scholarly landscape is highly entrusted to emphasise the multi-dimensional perspective of CX in online settings, predominantly encompassing perceived value, emotional responses, and satisfaction, which ultimately drive behavioural outcomes like loyalty, engagement, advocacy, or impulsiveness in shopping (Verhoef *et al.*, 2009; Homburg *et al*., 2017). In this context, PSQ has emerged as a crucial determinant of the online shopping behaviour of customers. Extending the SERVQUAL framework (Parasuraman *et al.,* 1988), with website usability, responsiveness, personalization, and AI-enabled services (Zeithaml *et al.*, 2002), several recent studies have reported that superior e-service quality could enhance trust, reduce perceived risk (Chiu et al., 2014; Rita et al., 2019; Hanaysha *et al*., 2025; Pagnanelli *et al*., 2025; Ruanguttamanun & Peemanee, 2022), strengthen customer engagement and loyalty, and ultimately improve customer experience and satisfaction (Alalwan *et al*., 2025; Shahzad *et al*., 2024; Ashiq & Hussain 2024; Ahmad *et al*., 2025; Mamakou *et al*., 2024; Saha *et al*., 2023; Panesar *et al*.,

2026). In spite of developing the above advanced research landscape, a unified framework integrating the relationship of OSI, PSQ, and CX remains underexplored. In the existing literature, service quality is conceptualised as an antecedent to behavioural intention, satisfaction, engagement, and loyalty (Parasuraman *et al*., 1988; Zeithaml *et al*., 1996; Pavlou, 2003; Chiu *et al*., 2014). However, the recent studies are consistently highlighting that optimum use of AI-enabled sophisticated services with reduced human intervention in the digital shopping arena, not only to enhance the scope of efficiencies and personalisation but also to introduce new complexities of privacy concern, potential loss, and algorithmic bias (Davenport *et al*., 2020; Dwivedi *et al*., 2021), stimulating psychological frictions. This creates a conceptual paradox where improved service quality may not always translate into enhanced experiential outcomes due to the underlying psychological concerns. In response to the above gap, the study re-conceptualises PSQ by logically extending the theoretical foundation of Expectation-confirmation theory (ECT) and Cognitive bias theory (CBT), exploring PSQ not merely as an antecedent but as a mediating mechanism through which OSI translates into CX.

3. Conceptual Framework and Hypotheses Development

The proposed hypothetical model has extended the core structure of Cognitive Bias Theory (CBT) and Expectation Confirmation Theory (ECT) to explain the relationships among OSI, PSQ, and CX in the online fashion shopping context. ECT explains how pre-consumption expectations influence post-consumption evaluations (Oliver, 1980), while CBT suggests that prior intentions and beliefs shape value perceptions and experiential evaluations (Tversky, 1974). Empirical studies found that the customers who intend to shop online are more likely to feel excitement, enjoyment, and satisfaction during the process due to positive predispositions (Kautish *et al*., 2022; García-Salirrosas *et al*., 2022). Based on the above, it is proposed that

H1: Online shopping intention (OSI) significantly affects customer experience (CX).

CBT suggests that the behavioural intention of a prospective customer is a direct reflection of his cognitive predisposition and beliefs through which they interpret information (Tversky, 1974). As a result, the customers with higher online shopping intention tend to interpret service-related attributes more favourably (Bhati *et al*., 2022; Liao *et al*., 2022). Parallelly, following the ECT framework (Oliver, 1980), the consumers form pre-consumption expectations at this stage. Thus, the present study conceptualizes online shopping intention as a pre-consumption construct representing customers' expectations and motivational readiness. Therefore, it is proposed that

H2: *Online shopping intention (OSI)significantly affects perceived service quality (PSQ)*.

In the next phase of performance evaluation in ECT, perceived service quality is the core component determining whether expectations are confirmed or disconfirmed (Oliver, 1980; Bhattacherjee, 2001). It is also complemented by CBT, which suggests that consumers' prior intentions and beliefs influence their perception and evaluation processes through confirmation bias and selective perception. Prior studies empirically evidenced that as online platforms deliver reliable, responsive, and secure services, customers experience higher satisfaction, perceived value, and positive emotions (Mahadevan & Joshi, 2022; Saleem *et al*., 2022). Thus, it is further proposed that

H3: *Perceived service quality (PSQ) significantly affects customer experience (CX).*

Therefore, integrating ECT and CBT, it is found that in the digital shopping context, the purchase intention of the prospective customers acts as a state of the pre-purchase stage, reflecting their readiness to engage in online transactions. Such intention eventually leads them to experience actual interaction with the digital interface (Nguyen et al., 2022). It brings the customers to the digital platform where their internal state (intention) at the pre-purchase stage is filtered through their qualitative evaluation (both technical and functional qualities) of the service attributes at the interaction stage what ultimately shapes the holistic outcomes (experience). Therefore, online purchase intention may not directly result in a satisfying experience if the quality of services fails. If the service quality offered by the shopping sites is perceived as efficient and effective during the interaction stage, the initial intention of the customers will transform into positive experiences, confirming the mediating role of perceived quality of services (McLean & Wilson, 2016). Considering the above, it is hypothesized as

H4: *Perceived quality of service (PSQ) mediates the relationship between online shopping intention (OSI) and customer experience (CX).*

The proposed hypothetical framework based on the above is presented in Figure 1.

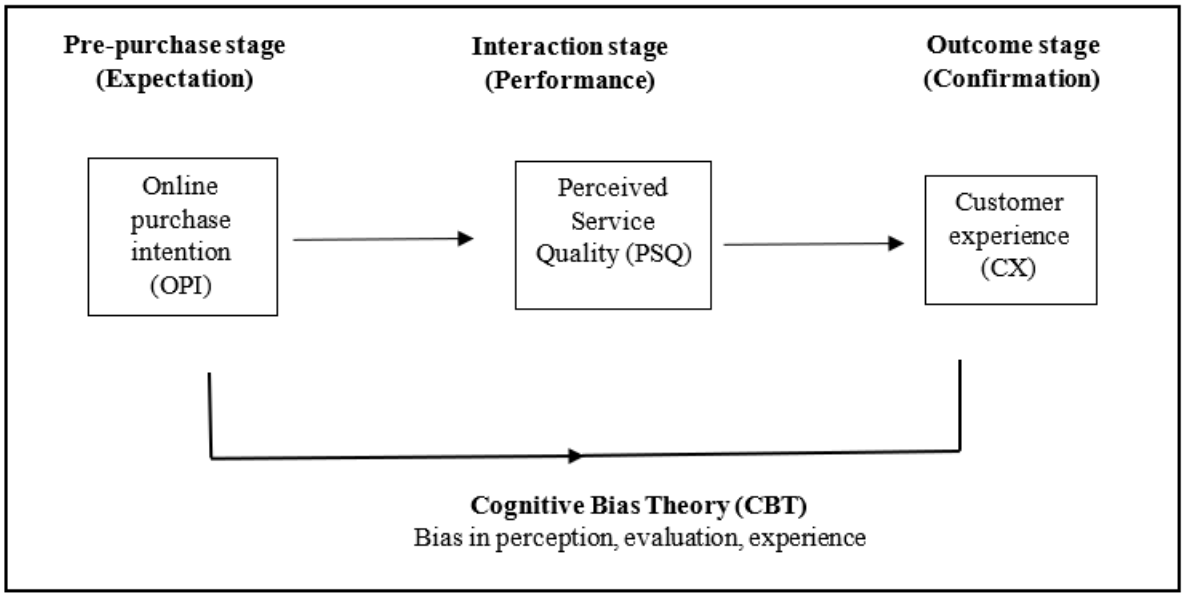

Figure 1. Proposed Conceptual research framework

4. Quantitative Data Analysis and Findings

The study used purposive sampling, where sample units consisted of 467 respondents residing in Kolkata and 24 Parganas, having an age group of 18-60 years, and engaged in online shopping at least once in the last 6 months. The data was collected using an online survey through a closed-ended questionnaire having a 5-point Likert scale (ranging from strongly disagree to strongly agree). The study incorporated six demographic characteristics as control measures, including age, gender, annual family income, employment status, education level and occupation. The quantitative analysis was conducted using responses collected from 467 online shoppers residing in Kolkata metropolitan city in India who had engaged in online shopping during the previous six months. As the data were collected through a self-administered questionnaire from a single source, common method bias (CMB) was assessed using Harman's single-factor test. The results indicated that no single factor accounted for the majority of the variance, suggesting that CMB was not a significant concern in the study (Podsakoff et al., 2003). Reliability and validity were assessed using Cronbach's alpha, Exploratory Factor Analysis (EFA), and Confirmatory Factor Analysis (CFA) (Nunnally, 1978). The structural relationships among the study constructs were analysed through SEM techniques (Hair et al., 2019).

Results of EFA confirmed satisfactory sample adequacy and dimensional structure for all constructs, with appropriate KMO, Bartlett's Test values, and Total variance explained were presented in Table 1(Field, 2024). Items with poor factor loadings were eliminated to improve construct validity and measurement reliability. OSI emerged as a single-factor construct, whereas PSQ and CX were identified as two-factor constructs. Items with poor factor loadings were removed to strengthen construct validity. The retained items, extracted factors, and measurement sources are presented in Table 2.

Table 1. KMO and Bartlett's Test of Sphericity

Scales		OSI	PSQ	CX
KMO Measure of Sampling Adequacy		.737	.905	.875
Bartlett's Test of Sphericity	Approx. Chi-Square	554.652	3475.790	2008.454
	DF	6	55	36
	Sig.	.000	.000	.000
Total Variance Explained		61.376%	71.559%	65.033%

Table 2. EFA Results for Measurement Constructs with Sources

Online Shopping Intention: Factor Matrix

Items (Variable name)	Factor
	1
I intend to purchase fashion items from online platforms in the near future. [OSI1]	.831
I am likely to utilize the services provided by fashion retail websites/app. [OS12]	.799
I prefer to buy fashion products in physical stores rather than online. [OSI4]	.772
I am willing to recommend online fashion shopping to my friends. [OSI5]	.728
I plan to purchase the latest fashion products through online apps/websites. [OSI3]	
Bhattacherjee, (2001); Jarvenpaa et al., (2000); Gefen et al., (2003); Ling et al., (2010); Chiu et al., (2005); Wen et al., (2011); Thamizhvanan & Xavier, (2013).	

Perceived Service Quality: Rotated Factor Matrix

Items (Variable name)	Factor	
	1	2
The websites/apps of online fashion stores I use have an attractive design and layout. [SQ_T1]	.873	
The online fashion stores I use accurately display whether an item is in stock and available in my size. [SQ_RL1]	.849	
The websites/apps load quickly, and pages respond without delay. [SQ_RS1]	.821	
The checkout process for fashion items is quick and efficient. [SQ_RS2]	.820	
The fashion items I receive match the descriptions and images on the websites/apps I use (e.g., colour, fabric, fit). [SQ_RL2]	.820	
The information provided (e.g., size guides, material descriptions, styling tips) by the fashion retail channels I use is clear, easy to read, and well-presented. [SQ_T3]	.809	
The product images (e.g., clothing on models, close-ups of fabric) are high quality and accurately represent the fashion items. [SQ_T2]	.784	
The online fashion retailers I am dealing with appear trustworthy and credible (e.g., positive reviews, clear policies). [SQ_A2]		.867
I feel confident that my personal and payment information is secure when shopping on online platforms. [SQ_A1]		.859
The online fashion retailers make me feel valued as a customer. [SQ_E2]		.798
The online fashion stores I use provide personalized recommendations for clothing and accessories that match my style. [SQ_E1]		.782
The website/app is easy to navigate and find the fashion items I'm looking for (e.g., clear categories, filters). [SQ_T4]		
SQ: Service Quality; T: Tangibility; RL: Reliability; RS: Responsiveness; A: Assurance; E: Empathy		
Zeithaml, (1991); Barnes & Vidgen, (2001); DeLone & McLean, (2003); Zemblytė, (2015); Hwang& Kim (2019); Parasuraman et al., (1988)		

Customer Experience: Rotated Factor Matrix

Items (Variable name)	Factor	
	1	2

I am happy with the service received from most fashion websites/apps. [CX_S4]	.776	
Fashion products I buy online are worth the money I spend. [CX_PV1]	.767	
I am satisfied with my overall experience of online fashion shopping. [CX_S1]	.756	
Online fashion deals offer good value compared to offline stores. [CX_PV2]	.745	
Shopping online for fashion products helps me save time and money. [CX_PV4]	.721	
My experience with fashion shopping websites has met my expectations. [CX_S2]	.712	
I enjoy browsing and buying the latest fashion trends online. [CX_ER1]		.905
I feel excited while shopping for fashion products through apps/websites. [CX_ER2]		.806
Buying fashion items online makes me feel stylish and updated. [CX_ER4]		.642
I often feel that online fashion items are overpriced. [CX_PV3]		
I often feel frustrated when shopping for fashion items online. [CX_ER3]		
I often regret shopping for fashion products online. [CX_S3]		
CX: Customer Experience; S: Satisfaction; PV: Perceived Value; ER: Emotional Response		
Verhoef et al. (2009); Lemon & Verhoef, (2016); Rose et al. (2012); Bhattacharya et al., (2019)		

4.1.Measurement model

Based on the EFA results, CFA was performed to validate the measurement model. The dimensions extracted under PSQ were termed Operational Efficiency and Interpersonal Excellence, while CX consisted of Cognitive Evaluation and Emotional Engagement. The constructs demonstrated acceptable reliability and convergent validity with satisfactory CR and AVE values (Hair et al., 2019) (Table 3). The model-fit indices, including CFI, RMSEA, SRMR, TLI, and GFI, also indicated good model fit for all constructs (Hu & Bentler, 1999) (Table 4).

Table 3. CFA Model Validity Measures for Three Scales

	Factor	Cronbach Alpha	CR	AVE	MSV	MaxR(H)	F1	F2
OSI	-	0.734	0.818	0.534	NA	0.867		
PSQ	F1	0.913	0.856	0.600	0.187	0.870	0.775	
	F2		0.931	0.659	0.187	0.932	0.432***	0.812
CX	F1	0.857	0.852	0.536	0.442	0.858	0.732	
	F2		0.842	0.642	0.442	0.856	0.665***	0.801

*** $p < 0.001$

CR: Composite Reliability; AVE: Average Variance Extracted; MSV: Maximum Shared Variance; MaxR(H) Maximum Reliability; PSQ (F1): Interpersonal Excellence; PSQ (F2): Operational Efficiency; CX(F1): Cognitive Evaluation; CX(F2): Emotional Engagement

The findings indicate satisfactory convergent and discriminant validity across all constructs, confirming the robustness of the measurement framework**.**

Table 4. CFA Model Fit Indices for Three Scales

Fit Index	OSI	PSQ	CX	Acceptable Threshold
CMIN/DF	2.643	3.058	2.992	< 5
CFI	0.997	0.976	0.981	≥ .90
SRMR	0.018	0.044	0.032	≤ .08
RMSEA	0.059	0.066	0.065	≤ 0.08
TLI	0.982	0.967	0.967	≥ .90
GFI	.997	.956	.975	≥ .90

4.2.Structural model

The structural equation model (SEM) was subsequently analysed to test the hypothesised relationships (Figure 2). The structural model showed acceptable fit indices (CMIN/DF = 3.676, CFI = 0.927, SRMR = 0.055, RMSEA = 0.076, TLI = 0.911, GFI = 0.910). The findings revealed that OSI significantly influences PSQ (β = 0.796, t = 8.920, p < .001), supporting H2, while PSQ significantly influences CX (β = 0.749, t = 5.091, p < .001), supporting H3. However, the direct relationship between OSI and CX was not significant (β = 0.223, t = 1.804, p = .071), resulting in rejection of H1. The insignificant direct relationship between OSI and CX implies that purchase intention alone is not sufficient to create favourable customer experiences without the support of positive service quality perceptions at the interaction stage. The structural model findings are summarized in Table 5.

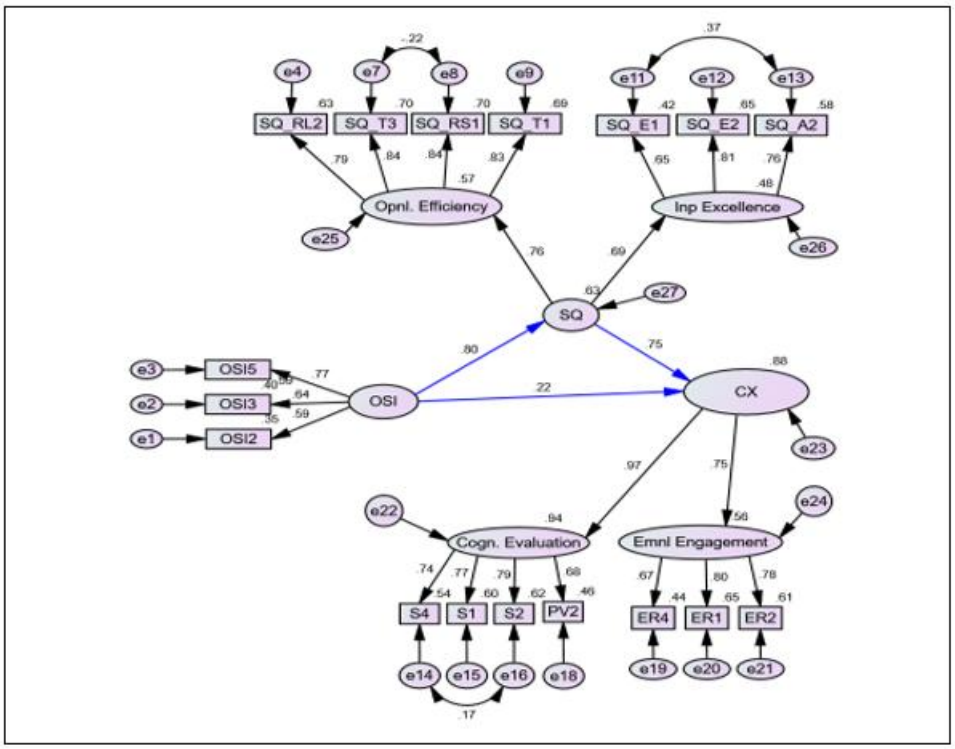

Figure 2. Structural model

Table 5. Structural Model Results

Hypothesis	Path	Std. Estimates (β)	t-value	p-value	Result
H1	OSI → CX	0.223	1.804	.071	Not Significant
H2	OSI → PSQ	0.796	8.920	***	Significant
H3	PSQ → CX	0.749	5.091	***	Significant

***** p < 0.001**

4.3.Mediation analysis

Bootstrapping analysis was conducted to examine the mediating role of PSQ (Hair et al., 2019). The standardised indirect effect of OSI on CX through PSQ was significant (β = 0.596, p = .001), whereas the standardised direct effect remained insignificant (β =0.223, p=.077). Since the standardised total effect was significant (β = 0.819, p = .001), PSQ was identified as a full mediator between OSI and CX (Table 6).

Table 6. Mediation Analysis for SQ as a mediator of OSI and CX relationship

Mediation Effect

Path	Direct Effect	p	Indirect Effect	p	Total Effect	p
OSI→SQ → CX	0.223	.077	0.596	.001	0.819	.001
Results: Full Mediation						

The full mediation effect implies that purchase intention is not the only factor that determines customer experience, but rather, service quality is the key factor influencing customer experience in digital fashion commerce. Only when customers perceive the service encountered positively, their willingness to participate in online buying turn into important experiential outcomes.

The quantitative results explain that online shopping intention does not stimulate a positive customer experience alone; perceived service quality is the key experiential process by which consumers translate their buying intention into cognitive and emotional experiential results. The research outcomes are visually presented through a theoretical model in Figure 3, which finally justifies and validates that experience is not directly intention-driven but is fundamentally constructed through the intervening mechanism of perceiving the quality of services.

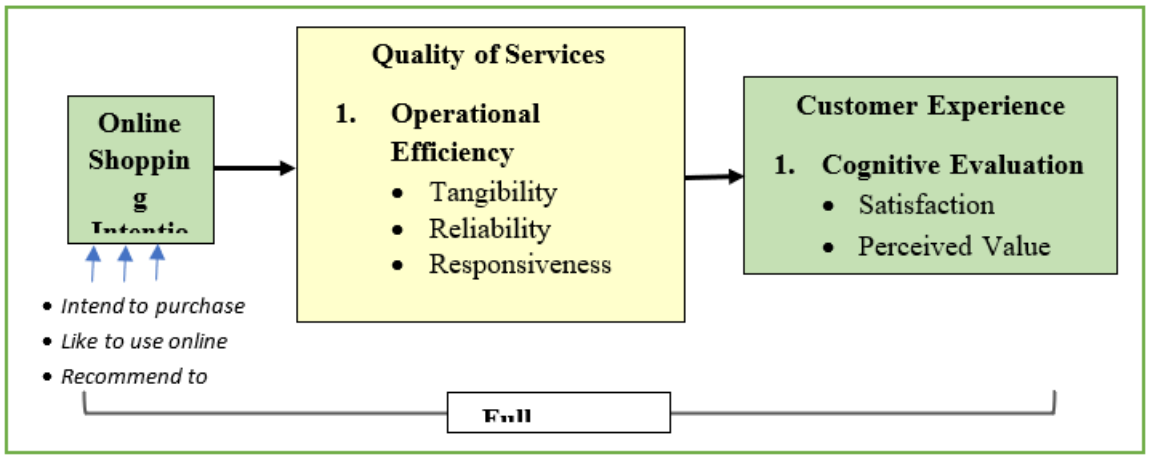

Figure 3. Theoretical framework on Online shopping intention, perceived service quality, and customer experience

5. Discussion

5.1.Theoretical contribution

The present study addresses an important theoretical gap in online shopping literature by examining how OSI, PSQ, and CX interact simultaneously in the context of online fashion shopping (Bhati *et al*., 2022; Saleem *et al*., 2022). By integrating ECT and CBT, the study demonstrates that PSQ is not exclusively a direct antecedent of satisfaction and behavioural outcomes, but is partially psychologically constructed through consumers' pre-existing intentions and expectations. By establishing PSQ as a mediating experiential mechanism between OSI and CX, the findings suggest that service quality operates dynamically as an interpretive bridge, translating online shopping intentions into emotional, evaluative, and experiential outcomes. This reconceptualization extends conventional service quality theory beyond purely functional website performance dimensions toward a more psychologically embedded and interaction-driven understanding of digital consumption experience (Liao *et al*., 2022; Türkdemir *et al*., 2023).

5.2.Managerial implications

The present study offers relevant implications to the managers. The results highlight that the managers should prioritise trust-building mechanisms such as authentic reviews, influencer endorsements, attractive promotions, and clear platform policies to build strong pre-consumption intention among prospective customers. Secondly, to enhance digital shopping, managers should strategically manage service quality and continuously improve it. Thus, both the operational function and the interpersonal excellence of service quality should be managed by fostering user-friendly website design, high-quality product visuals, transparent information, and proactive communication regarding delivery and returns (Singh *et al*., 2024). Thirdly, firms must carefully manage the expectation–performance gap by avoiding overpromising and ensuring consistency between promotional and actual service delivery. Fourthly, as perceived service quality directly enhances customer experience and acts as a mediator, investments in reliable

logistics, responsive customer support, and hassle-free return and refund systems are essential (Kappil & Santhi, 2025). Additionally, personalization strategies can further strengthen positive customer perceptions and engagement (Han & Han, 2023). Overall, managers should recognize that customer experience is co-created through expectations, cognitive biases as well as service performance and therefore adopt an integrated approach that simultaneously enhances intention, perception, and service delivery.

5.3. Limitations and Scope of future research

The present study is empirically conducted using a quantitative research design in an online fashion shopping context across some selected areas of West Bengal in India. Therefore, future studies could validate and generalise the findings across different geographical regions, cultural settings, and industry sectors. As the data was cross-sectional and collected from a single group of respondents, the study would be unable to account for dynamic changes in intention, perception, and experience over time and would introduce subjectivity and potential bias in interpreting the above constructs, thereby compromising the objectivity of the findings. Finally, the proposed research model includes the cause-and-effect relationship of three important components- OSI, PSQ, and CX. Since additional influential factors like trust, perceived risk, or emotional engagement, etc., have emerged in the qualitative analysis, it would be relevant to underscore the significant effect of those factors on overall CX by developing a more comprehensive model.

6. Conclusion

In these cutting-edge digital technologies, individuals are increasingly engaging in online fashion shopping, where expectations, perceptions, and experiences continuously change their behaviour. The present study is guided by two important theoretical frameworks, ECT and CBT, that incorporate OSI, PSQ, and CX as critical constructs in understanding consumer behaviour in online retailing. The results enrich the existing literature by justifying the significant role of perceived service quality as a key mechanism linking the initial intention and the holistic experience comprising of cognitive, emotional, and value-based aspects. Finally, the managers are enabled to optimise CX by strategically managing their expectations, assuring quality services, and leveraging psychological factors in the digital shopping environment. Overall, the research provides valuable insights for managers to enhance customer experience by strategically managing consumer expectations, improving service quality, and leveraging psychological factors in the digital shopping environment.

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