Mercados y Negocios
1665-7039 printed
2594-0163 on line
Year 26, n. 55, May-August (2025)

Impact of E-Service Quality of Mobile Application on Customer Perceived Value

Impacto de la calidad del servicio electrónico de la aplicación móvil en el valor percibido por el cliente

https://doi.org/10.32870/myn.vi55.7818

Rohit Kumar Sharma
Alliance University (India)
rohitPHD719@bus.alliance.edu.in
https://orcid.org/0009-0000-0986-4620

Sanjeev Padashetty
Alliance University (India)
sanjeev.padashetty@alliance.edu.in
https://orcid.org/0000-0001-6474-1383

Received: December 19, 2024
Accepted: April 4, 2025

ABSTRACT

The present study examines the effect of mobile app service quality on consumer perceived value (CPV) in online shopping in India, specifically in Bengaluru, and customer satisfaction (CS) on CPV. A quantitative research method was employed, in which data were collected from 222 randomly selected consumers using structured questionnaires and interviews. The analysis was conducted in R Studio, utilizing analyses that included discriminant validity, confirmatory factor analysis, and structural equation modeling (SEM). The findings indicate that mobile app service quality has a significant impact on CPV, with reliability and consumer service being the most critical dimensions. In contrast, content quality was the least essential of the dimensions. Additionally, CS had a significantly positive effect on CPV and partially mediated the relationship between content quality, navigation, visual design, contact, and CPV.

Keywords: Service quality; CPV; online shopping; consumer satisfaction; Bengaluru

JEL code: D19, D91

RESUMEN

El presente estudio examina el efecto de la calidad del servicio de la aplicación móvil en el Valor Percibido del Consumidor (CPV) en las compras en línea en la India, específicamente en Bengaluru, así como el efecto de la Satisfacción del Cliente (CS) en el CPV. Se empleó un método de investigación cuantitativo, en el que los investigadores recopilaron datos de 222 consumidores que fueron seleccionados aleatoriamente mediante cuestionarios estructurados y entrevistas. El análisis se completó en R Studio con análisis que incluyeron validez discriminante, análisis factorial confirmatorio y modelos de ecuaciones estructurales (SEM). Los hallazgos muestran que la calidad del servicio de la aplicación móvil tuvo un efecto significativo en el CPV, siendo la confiabilidad y el servicio al consumidor las dimensiones más significativas, mientras que la calidad del contenido fue la dimensión menos significativa. Además, la CS tuvo un efecto positivo significativo en el CPV y medió parcialmente la relación entre la calidad del contenido, la navegación y el diseño visual, el contacto y el CPV.

Palabras clave: Calidad del servicio; CPV; Compras en línea; satisfacción del consumidor; Bangalore

Código JEL: D19, D91

INTRODUCTION

Over the past few years, smartphones and mobile apps have transformed the way customers interact with companies (Stocchi et al., 2022). Mobile apps are crucial for offering services like shopping, banking, entertainment, and social media (Hossain et al., 2020). This change has highlighted the importance of e-service quality, the overall standard of services provided through electronic channels. With growing competition in the mobile app industry, knowing the factors that impact e-service quality is essential for businesses looking to improve CS and loyalty (Yunus et al., 2024).

Modern customers are more knowledgeable and discerning than they were in the past. Due to the abundant information, they have high expectations for mobile apps and seek seamless and personalized experiences (Susiang et al., 2023).

Studies show that customers are more willing to switch to other apps if their needs are unmet, underscoring the need to provide top-notch e-services that cater to their preferences. Efficiency, system reliability, fulfillment, privacy, and responsiveness determine how customers perceive and experience e-services (Guzman & Al-Hakimi, 2024).

There is a concept called Customer Perceived Value (CPV), which refers to how customers assess what they receive from a service compared to what they give up, like time, money, and effort (Anwar et al., 2021). This evaluation plays a crucial role in determining customer satisfaction and loyalty.

Many studies have found a positive correlation between the quality of e-services and customer perception of value (CPV) (Butt & Umair, 2023), suggesting that improved service quality leads to customers perceiving greater value in the service. For example, if a mobile app is efficient and easy to use, users are more likely to view it as valuable. Furthermore, having a reliable system that is always available builds trust and improves the overall user experience.

Although the connection between e-service quality and CPV is well-established in traditional e-commerce settings, further investigation is needed, specifically within mobile applications (Miao et al., 2022). The distinctive features of mobile platforms, such as small screen sizes, varying connectivity, and different user interactions, impact how users perceive the quality and value of a service.

Measuring e-service quality is challenging, despite its multifaceted nature and its crucial importance. Different aspects contribute to the overall quality of service, but their

significance can vary depending on the context and demographics of consumers. For instance, younger customers may value efficiency and responsiveness more than older users, who prioritize privacy and security features. Moreover, many businesses lack robust frameworks for efficiently evaluating e-service quality.

User experience (UX) design is crucial in influencing perceptions of the quality of electronic services (Susilawati et al., 2024). A well-crafted mobile app should make it easy for users to navigate, quickly find information, and have an intuitive interface that enhances user engagement. Conversely, a poorly designed user experience (UX) can result in frustration and dissatisfaction. Research indicates that apps with excellent user experience (UX) enhance perceived service quality and positively impact customer perception value (CPV) by creating enjoyable interactions that promote repeat usage.

The quality of the content is crucial in assessing the efficiency of a mobile app. Quality content must be relevant, precise, and engaging to effectively fulfill user requirements. Studies suggest that comprehensive and well-organized content enhances user interaction and loyalty, as users are more likely to revisit apps that offer valuable information and perspectives (Aqeel, 2021). Additionally, as search engine algorithms such as Google continue to evolve and focus on content significance, apps that offer top-notch content are more likely to draw in users and sustain their engagement. Substandard content quality can lead to increased bounce rates and user dissatisfaction, ultimately diminishing the perceived value of the app.

Effective navigation is also a crucial element of e-service quality on mobile apps. Users expect seamless interactions that enable them to locate information quickly and efficiently. An effectively designed navigation system reduces frustration and enhances the overall user experience. Studies indicate that instinctive navigation leads to greater user satisfaction, enabling users to do tasks with little effort (Yadav et al., 2024). Alternatively, complex or non-intuitive navigation may lead users to abandon the app and form negative opinions about its quality.

Hence, streamlining navigation routes is vital to ensure that users can readily reach the desired content. A mobile app's general layout substantially impacts how users perceive its quality. Attractiveness, consistency of layout, and ease of use are essential factors that help create a positive user experience. Good design enhances usability and fosters emotional connections with users, motivating them to engage more with the app.

Research has demonstrated that visually appealing apps are more likely to keep users engaged for extended periods and lead to repeat use (Chopdar & Balakrishnan, 2020). Additionally, design features should be adjusted to accommodate different screen sizes and devices,

ensuring a cohesive experience across various platforms. Ensuring that the design meets user expectations is crucial for enhancing CPV.

Customer service contact is vital to e-service quality in mobile apps, but is often neglected. People may face problems or need assistance when using an app, so having easily reachable and responsive customer support is crucial for keeping users satisfied (Huma et al., 2024). Studies show that addressing issues promptly through efficient customer support methods significantly boosts perceived value (Oloveze et al., 2022). When users feel supported and appreciated by a service team, their overall experience is enhanced, resulting in greater loyalty and positive recommendations.

The significance of mobile apps in influencing consumer behavior in different industries is crucial to grasping the connection between e-service quality and how customers perceive value. This study aims to fill the gaps in understanding this relationship within the mobile app context, thereby assisting businesses in enhancing user experiences and retaining customers in the long term. The results will be crucial in developing strategies to improve service provision in the rapidly evolving digital market.

Problem identification

In the fast-changing world of mobile apps, the quality of online services plays a significant role in CS and loyalty, making it crucial for businesses to understand how e-service quality impacts CPV. However, several complicating factors exist in this relationship. Firstly, many mobile apps show inconsistent levels of service quality in areas such as efficiency, responsiveness, and privacy, resulting in varied customer experiences.

As users become accustomed to high-quality digital interactions, their expectations increase; failing to meet them can lead to dissatisfaction and decreased perceived value. Furthermore, there is often a lack of clarity on which aspects of e-service quality impact CPV, making it difficult for businesses to prioritize improvements effectively. Poor user experience (UX) design worsens the situation, as difficulties in navigation and long loading times can reduce overall satisfaction. Additionally, concerns about data privacy can negatively impact users' perceptions of mobile apps, leading to a decline in perceived value if they believe their personal information is not adequately protected.

Quantifying e-service quality and its direct effect on CPV is challenging due to the subjective nature of customer experiences; many organizations lack strong metrics or frameworks for practical evaluation. These challenges can lead to serious consequences, such as higher customer turnover, reduced brand loyalty, and negative financial impacts as dissatisfied customers look for alternatives. Addressing these challenges is essential for businesses

wishing to enhance the quality of their mobile apps' e-services and improve CPV, ultimately encouraging long-term user engagement and satisfaction in a fiercely competitive market.

Significance of the study

The importance of this research lies in its ability to improve comprehension of the crucial link between e-service quality and CPV in mobile apps. With the expansion of mobile commerce, businesses need to acknowledge that high e-service quality is not only a competitive advantage but a requirement for retaining and satisfying customers. By examining the aspects of e-service quality that have the most significant impact on CPV, this study provides valuable insights that can help organizations optimize their mobile apps to effectively meet user expectations. Moreover, the results can help businesses identify key areas for enhancement, resulting in improved user experiences, greater customer loyalty, and increased revenue generation. Additionally, this research adds to the academic literature by addressing gaps in understanding how different aspects of e-service quality interact with customer perceptions in the mobile environment. This study is essential for professionals wanting to improve their service offerings and scholars looking to enhance the theoretical framework surrounding e-service quality and customer value in the digital era.

Objective

The study's objectives are as follows.

- To empirically examine the impact of M-application service quality on CS in online retail in Bengaluru.
- To empirically examine the influence of CS on CPV in online retail in Bengaluru.
- To assess the mediating role of CS in the relationship between m-application service quality dimensions and CPV.

The present paper is based on the current drift in depicting the e-service quality of mobile applications on CPV. On the other hand, scrutiny of contemporary research that has built upon similar work through varied analytical methods is presented in Section 2. Section 3 illustrates the methodology used in the present research. Further, the results of the current study are indicated in Section 4. Consequently, Section 5 represented the conceptual discussion on the perception of current research. Section 6 shows the limitations of the paper. The conclusion from the present paper is presented in Section 7 in an orderly fashion.

LITERATURE REVIEW

In today's age of IT advancement, there has been a significant increase in the use of e-commerce mobile applications for making purchases. This growth has led to a surge in research in this field, prompting further studies to address gaps in marketing strategies

through practical analysis. Over the past decade, the quality of mobile application services has been recognized as a key factor in differentiating service offerings and establishing a competitive advantage. The current study examines works related to the M-S-QUAL theory (Hassan, 2024) and the Theory of Planned Behavior (Sousa et al., 2022). Their theoretical contributions are analyzed to understand the impact of M-Service Quality effects on CPV.

M commerce applications

The combination of mobile telecommunications and the Internet has led to numerous exciting opportunities and has been a driving force behind the expansion of e-commerce. Integrating these technologies into our daily lives has changed how we work, socialize, learn, and purchase. The subsequent sections will introduce and explore various topics within the literature on m-commerce. M-commerce encompasses a wide range of applications and involves various value-added activities that ultimately benefit the consumer. The European Commission (1996) developed a framework to outline these activities, drawing from Porter and Millar's (1985) classic value chain analysis. This framework comprises six core processes and two main categories: infrastructure, services, content, and products.

Service Quality

Consumers judge an entity's excellence or superiority based on the quality of its service (Omar et al., 2021). Evaluating service quality over physical products is more challenging because services are intangible (Wirtz et al., 2021). Heterogeneity and inseparability further complicate the judgment process. Various methods exist in marketing literature to assess service quality, with SERVQUAL and SERVPERF being the most well-known. SERVQUAL, developed by Parasuraman et al. (1988), consists of five dimensions: tangibles, reliability, responsiveness, assurance, and empathy. (Cronin Jr & Taylor, 1992)

Introduced SERVPERF, focusing on performance rather than expectations to measure service quality. However, it is suggested that customer satisfaction has a more significant impact on purchase intention than service quality. Parasuraman and others (2005) proposed using two scales to measure e-service quality. The first scale, E-S-QUAL, comprises four dimensions: efficiency, fulfillment, system availability, and privacy. The second scale, E-S-QUAL, consists of three dimensions: responsiveness, compensation, and contact.

While m-commerce is often seen as an extension of e-commerce, it can also be seen as a distinct channel with advantages for consumers (Lucas et al., 2023). The characteristics of the mobile channel are significantly different from those of other channels, which calls for creating a separate service quality scale for m-commerce (Dastane et al., 2020). This scale is crucial because mobile technology introduces a new service delivery mode that businesses are unfamiliar with.

For instance, E-S-QUAL examines the services that firms provide and how technology affects service quality (Çelik, 2021). The rise of mobile technology has transformed our expectations of a commerce platform, highlighting the need for a suitable scale to measure M-commerce service quality (AlSondos & Salameh, 2020). Researchers in M-commerce often face the challenge of assessing mobile service quality.

CS

CS is determined by three main factors, including the overall perception of a company's service quality (Marcos & Coelho, 2022). In the context of mobile commerce, CS refers to a customer's assessment and emotional reaction to the overall product or service experience in a mobile commerce setting (Hsiao, 2022). CS can be interpreted as individual transactions or a cumulative evaluation (Thanasrichatthon, 2023). The transaction-specific approach suggests that CS is based on the customer's recent purchasing experiences (Hamilton-Ibama & Ogonu, 2022*)*.

CPV

CPV can be described based on various aspects, including quality, benefits, monetary value, and social psychology (Thanasrichatthon, 2023). From a financial viewpoint, value is created when customers pay less for goods using discounts and coupons (Duan et al., 2022). In terms of quality, value is determined by the disparity between the price paid for a product and its quality (Uzir et al., 2021).

The beneficiary perspective suggests that perceived value is the overall assessment by customers of the benefits gained versus the sacrifices made (Lin et al., 2020). Additionally, non-monetary costs like search, transaction, negotiation, and time spent during the purchase should also be considered (Sharma et al., 2020). From a social psychology standpoint, value is found in the significance of buying specific goods within the buyer's community (Ou et al., 2022). Perceived value is the evaluation of product benefits by consumers, considering both the initial sacrifices and the performance of value-added services provided by mobile applications (Wu & Andrizal, 2021).

Research Gap

Much literature examines the relationship between content quality and customer satisfaction (CS). Still, there is a lack of research on analyzing the various dimensions, such as e-service quality, consumer support contact, and navigation and design. Furthermore, the prevailing research focuses on conventional e-commerce platforms but does not distinguish service quality in mobile applications and e-service quality in general settings. Most research focuses

on the factors that impact CS and engagement, but does not examine the interaction between CPV and these factors.

THEORETICAL FRAMEWORK

This study conceptualizes the Mobile Application Service Quality framework in relation to the following theories.

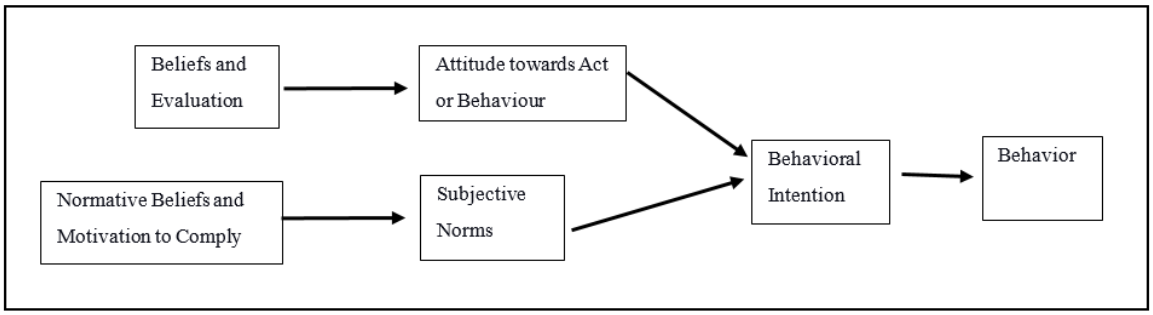
- Theory of Planned Behaviour
- M-S-QUAL: Mobile service quality measurement model.

Theory of Planned Behaviour and Reasoned Action

Icek Ajzen created a psychological theory that aims to explain human behavior in certain situations. The theory suggests that a person's intention to act is the leading indicator, with this intention being influenced by three main factors: attitude, subjective norms, and perceived behavioral control (Basoglu et al., 2009).

Figure 1

Theory of Planned Behavior and Reasoned Action



Source: Own elaboration (Basoglu et al., 2009).

This intention is influenced by factors such as attitude, which reflects a person's positive or negative evaluation of the behavior; subjective norms, which represent perceived social pressures and beliefs about how others view the behavior; and perceived behavioral control, which accounts for an individual's belief in their ability to perform the behavior based on internal and external factors.

While the Theory of Reasoned Action focuses solely on attitudes and subjective norms, the Theory of Planned Behaviour enhances this model by incorporating perceived behavioral control, making it more applicable to scenarios where external constraints may affect behavior. Both theories have been widely utilized in various fields, providing valuable insights into how intentions shape actions.

Hence, the Theory of Planned Behavior and the M-S-QUAL model enhance our understanding of consumer behavior and service quality in the context of mobile apps, such as those used for online shopping. TPB discusses the role of attitudes, subjective norms, and perceived behavioral control in forming the intention to use mobile apps to shop.

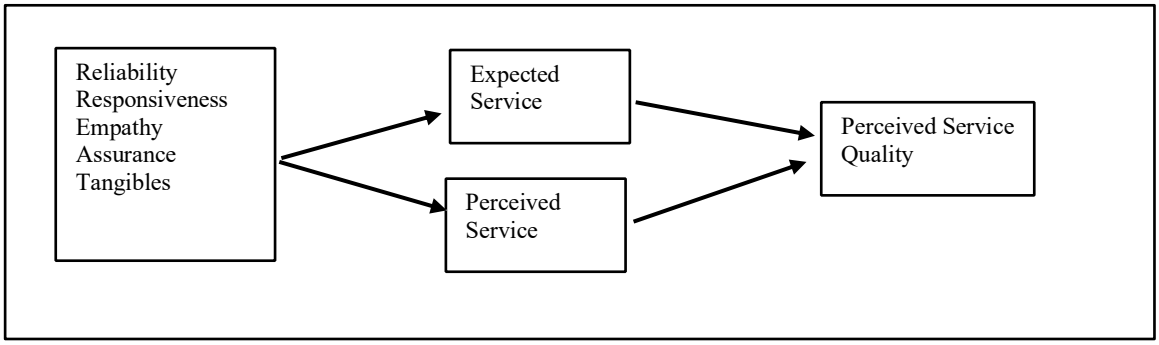
Positive attitudes toward app usability and efficiency of shopping, social pressure from peers and influencers encouraging the use of an app, and the confidence to use the app effectively are all elements of a person's behavioral intention and create perceived value. On the other hand, M-S-QUAL directly incorporates service quality dimensions, such as reliability, responsiveness, and ease of use, to evaluate mobile service quality. These dimensions are tied to customer satisfaction and perceived value by providing uninterrupted service or functionality, consistent access to accurate information, and timely customer service.

SERVQUAL and SERVPERF scale

Parasuraman, Zeithaml, and Berry proposed that service quality is determined by the gap between customer expectations and their experience of a service (Kandampully, 1998). Service quality was initially based on four key dimensions (content quality, ease of navigation and visual appeal, management and customer service, and system reliability and connectivity) and was assessed using 24 specific items.

Figure 2

SERVQUAL and SERVPERF scale



Source: Own elaboration.

According to (Parasuraman et al. (1988), the SERVQUAL model, illustrated in Figure 2, is a widely used framework for assessing service quality across five dimensions: tangibles, responsiveness, reliability, assurance, and empathy. This model was developed to measure the gap between customer expectations and perceptions of service delivery based on the expectancy–disconfirmation paradigm. SERVQUAL has garnered significant attention in both academic and practical circles due to its diagnostic value and adaptability across various industries, including healthcare, banking, and telecommunications. However, scholars have raised concerns about its conceptual framework and measurement methodology. For

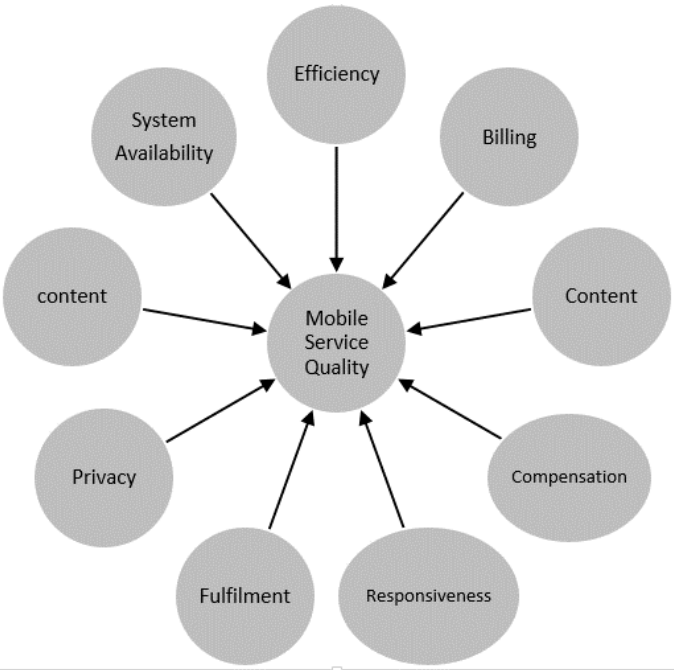
instance, (Cronin Jr & Taylor, 1992) they argued that using the service quality performance model (SERVPERF) instead of SERVQUAL yields more reliable, valid, and predictive results for measuring service quality. Similarly, other studies (AlSondos & Salameh, 2020; Osman et al., 2024) have supported SERVPERF as a superior tool for assessing service quality outcomes while acknowledging SERVQUAL's strength in providing diagnostic insights into service quality gaps.

M-S-QUAL

M-S-QUAL (Huang et al., 2015) is a reliable and valid framework for assessing service quality in mobile applications, as shown in Figure 3. It focuses on crucial dimensions that aid business firms in enhancing their competitive edge in the marketplace and guides strategic initiatives to improve the consumer experience in the mobile context.

Figure 3

M-S-QUAL model



Source: Huang et al. (2015).

The determinants in the model are described as

- "Efficiency: Whether the site responds quickly and is easy to use.
- System Availability: Whether the required technical functions are readily available, and the service promises are accurate.
- Content: Whether the information on the mobile site is appropriate and correct.
- FUL: The extent to which the site's promises about order delivery and item availability are fulfilled.

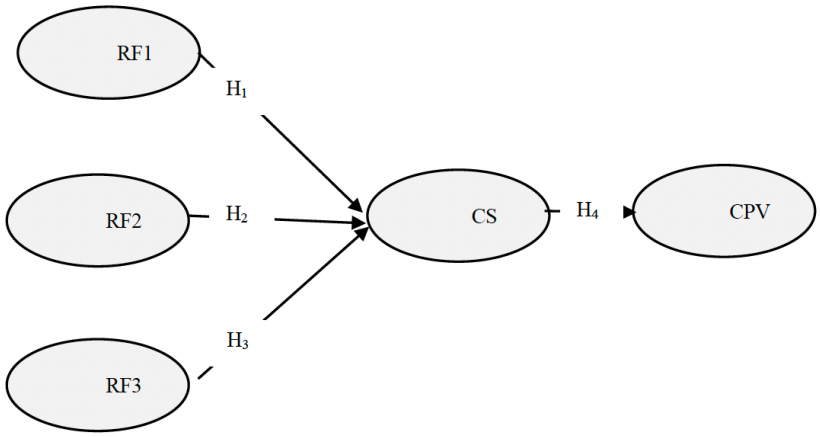
- PRV: The degree to which customers perceive the site safe and the extent to which their personal information is protected.
- Responsiveness: The effectiveness of the site's problem-handling process and return policy.
- Compensation: The degree to which the site compensates consumers for any problems.
- Contact: Telephone assistance and online representatives are available.
- Billing: Perceived value for money and the convenience of the billing process".

Conceptual Framework

The integration of key theories, including the Theory of Planned Behavior, Reasoned Action, and the M-S-QUAL theory, led to the proposed conceptual model presented in Figure 4 of the research study.

Figure 4

Conceptual framework



Source: Own elaboration.

The M-S-QUAL model defines RF1 as "whether the information on the mobile site is appropriate and correct." Reearchers have envisaged RF1 as one of the most critical factors influencing CPV regarding mobile applications.

$H_0$1: RF1 does not have a significant influence on CS

H_a1: RF1 has a significant influence on CS

The m-S-QUAL model defines RF2 as "M-App is well organized."

$H_0$2: RF2 does not have a significant influence on CS

H_a2: RF2 has a significant influence on CS

RF3 is the availability of telephone assistance and online representatives.

$H_0$3: RF3 does not have a significant influence on CS

H_a3: RF3 has a significant influence on CS

CS is defined as the cumulative impression of a firm's service performance. CPV is defined by constructs such as Quality, Emotional, and Comparative CPV.

Therefore, this study seeks to examine the direct effect of CS on CPV as well as the mediating role of CS in the association between m-application service quality and CPV and proffers the following hypothesis:

$H_0$4: CS does not have a significant influence on CPV
H_a4: CS has a significant influence on CPV
$H_0$5: CS does not mediate the relationship between RF1 and CPV
H_a5: CS mediates the relationship between RF1 and CPV
$H_0$6: CS does not mediate the relationship between RF2 and CPV
H_a6: CS mediates the relationship between RF2 and CPV
$H_0$7: CS does not mediate the relationship between RF3 and CPV
H_a7: CS mediates the relationship between RF3 and CPV

METHODOLOGY

Research Design

The research design is supposed to implement several processes, including tools and procedures, to obtain data for the research purpose. Well-designed research is mandatory to acquire reliable and valid outcomes. It employs the appropriate methodological approach for the present study by addressing the questions (Baur, 2019). The current study employs a quantitative research method. For the quantitative method, data are collected with a questionnaire based on variables and queries to implement the analysis (Mohajan, 2020).

Study Area

The study was conducted among retail consumers in Bangalore, India, who contributed wholeheartedly to the survey and interview. This supports the valid execution of the present study. The survey and interview are conducted with the aid of respondents. The people who contributed to the study are consumers of the retail sector. This will enhance the significance of the research and make gathering data more convenient and faster.

Sample size and population

In contemporary research, a suitable respondent contribution will be designated to obtain data regarding consumers' perceptions of India. The valuable data gathered for the quantitative technique depends on the selected sample size, which helps to prove the study's objectives (Lakens, 2022). The study incorporated 222 respondents for quantitative research, which included consumers in the respective fields involved in the current study.

Sampling Techniques

The technique used for sampling is a significant method for collecting data from the targeted population, rather than focusing on the entire available population (Stratton, 2021). The current study uses a random sampling method to choose the target respondents for the study. Correspondingly, the data to be gathered for the current research will select the willing samples and be able to offer precise responses to be measured. It is also used to find the perception of the dataset and categorize the patterns, which allows one to comprehend the significance of mobile applications in the retail sector (Sreekumar, 2023).

Data Collection

The data collection process is the primary phase in research, which affects the value of attaining outcomes by decreasing the feasible faults that might arise in the research process (Taherdoost, 2021). Our present study collects consumer data to assess the significance of mobile applications among e-commerce consumers. The study collected primary data using a structured, quantitative questionnaire. Secondary data was gathered from various academic journal articles.

Data Analysis

The quantitative methodology approach involves collecting, scrutinizing, and decoding quantitative data in research. The study levels are synergistic with the quantitative phase. This method yields results that include the incidence under study, thanks to the quantitative data. The present study employed a quantitative research approach, as it is more appropriate for depicting and enlightening various aspects (McLeod, 2023).

The R Studio software tool examines the quantitative data attained through a structured questionnaire. The gathered data are exported into an MS Excel sheet for a see-through study of variables.

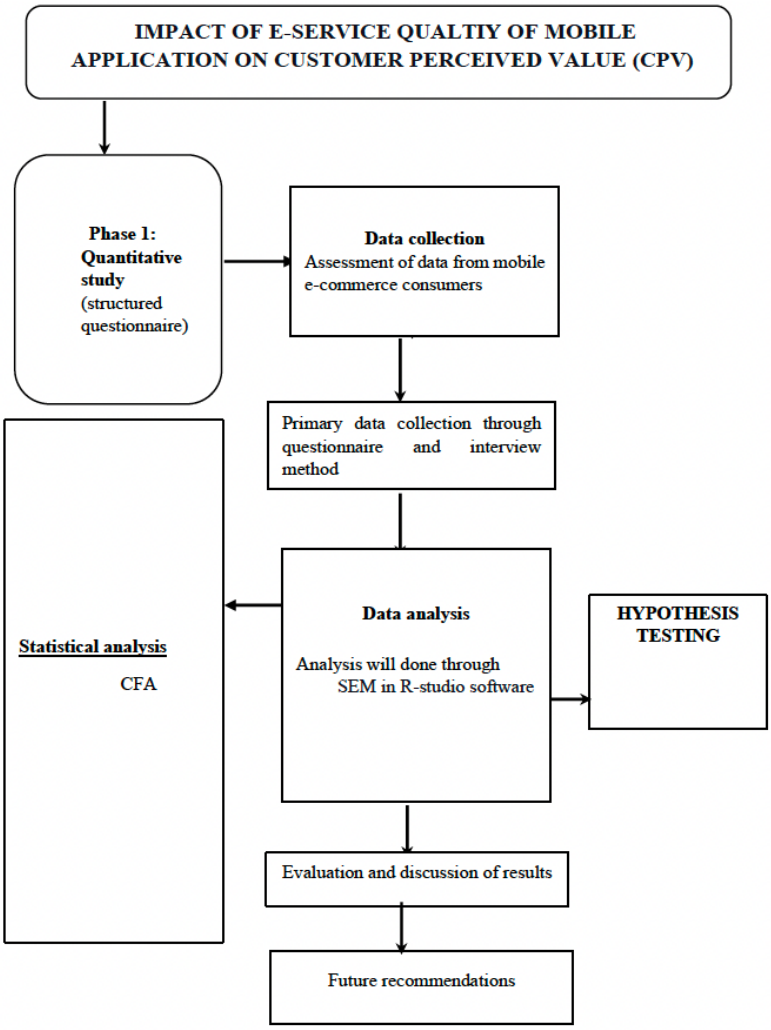
The quantitative research approach gathers data from respondents with closed-ended queries and infers the responses (Kandel, 2020). This is a naturalistic and multi-method approach, an interpretive technique for its research matter (Maxwell, 2021). An in-depth interview procedure is implemented to gather information from users of mobile e-commerce applications. This technique describes the respondents' opinions, experiences, emotions, and meanings.

The conceptual model for this study comprises three exogenous constructs, which are dimensions of m-application service quality - RF1, RF2, and RF3, and two endogenous constructs, CS and CPV. In addition, the mediating effect of CS in the relationship between the four m-application service quality dimensions and CPV was also studied. The study relied

on the well-established M-application service quality scale for measuring the exogenous RF1, RF2, and RF3 constructs. Six items of RF1, two for RF2, and three for RF3 were used as per the M-S-QUAL. Additionally, three CS and CPV items were acquired.

Figure 5

Research Design



Source: Own elaboration.

Figure 5 illustrates the process employed in the present study for quantitative data analysis using RStudio software, where study variables are identified and executed.

SEM analysis

Structural Equation Modeling (SEM) and Confirmatory Factor Analysis (CFA) are related statistical methods employed mainly in the social sciences to analyze intricate relationships between variables. SEM is a comprehensive framework that allows researchers to test theoretical models by analyzing both latent and observed variables, enabling them to

investigate causal relationships and dependencies within multivariate data. SEM encompasses several techniques, including path analysis, and provides a robust method for evaluating model fit using goodness-of-fit indices.

Conversely, CFA is a specialized type of SEM designed for hypothesis testing regarding the structure of factors underlying observed variables. The researchers in CFA pre-specify the number of factors and the relationships between them and the observed variables, which allows them to test if the data corresponds to the hypothesized model. This hypothesis-based character makes CFA especially useful for scale refinement and construct validation since it evaluates how well the measured variables capture the underlying latent constructs.

RESULTS

Demographic analysis

222 consumers are considered participants in the present research. The demographic particulars of the contributors are illustrated below*:*

Table 1
Demographic data

Demographic factor	Parameter	No. of respondents	Frequency (%)
Age	18 to 25 years	126	56.8
	26 to 35 years	42	18.9
	36 to 45 years	49	22
	Above 45 years	5	2.3
Gender	Male	154	69.4
	Female	68	30.6
Marital status	Single	146	65.8
	Married	76	34.2
Qualification	Under graduate	68	30.6
	Post graduate	151	68
	PhD/Doctorate	3	1.4
Occupation	Student	19	8.5
	Private	195	87.8
	Public	5	2.3
	Self	3	1.4

Source: Own elaboration.

Table 1 represents the demographic data of the consumers who have joined the review. The age of the respondents is analyzed, and it is concluded that most defendants (56.8%) are between 18 and 25 years old. Regarding gender, male respondents (69.4%) contributed more for research purposes. Based on educational qualifications, most respondents have completed post-graduation (68%). According to the survey, most respondents work in the private sector (87.8%), followed by students and those employed in the public sector. The outcome of the demographic data proves that the current study has congregated data from post-graduates and

those aged 18 to 25 years working in the private sector, which contributes substantially to the research purposes.

Sampling Adequacy

The Kaiser-Meyer-Olkin (KMO) test and the Bartlett test for sphericity were used to evaluate the dataset's suitability.

Table 2
KMO-Bartlett's Test

KMO		0.92
Bartlett's Test	Approx. χ^2	1845.208
	Df	2.785835
	S	136

Source: Own elaboration.

Table 2 illustrates the consequences of the KMO test for examining sampling adequacy and association amongst study variables, respectively. The outcome of KMOs should be more than 0.7 to prove adequate samples (Shrestha, 2021). The KMO result for the study is .92, proving the samples' adequacy. It implies an adequate correlation among the variables. The significant "S" value should be below 0.05 for Bartlett's test to demonstrate the association between the study's variables.

The current study's Bartlett test outcome is significant, explaining that the null hypothesis can be rejected. Moreover, the chi-square value is 1845.208, indicating that the correlation matrix diverges from the identity value.

Construct Reliability and Validity

The reliability of the constructs used in the study was assessed through Cronbach's α. The construct validity was investigated through confirmatory factor analysis (CFA), which evaluated the factor loading, average variance extracted (AVE), and composite reliability (CR).

Table 3 outlines the values of Cronbach's α, factor loading, CR, and AVE for all the constructs. All the questionnaire items exhibit factor loading well above the threshold level, thus exhibiting good convergent validity. The factor loadings of the RF1 construct, RF1.1, RF1.2, and RF1.3, are 0.736, 0.817, and 0.722, indicating the items are strong indicators. For the RF1 construct, the Cronbach's alpha is 0.797, indicating good internal consistency.

AVE is 0.57, confirming the convergent validity since it illustrates more than half of the variance. CR is 0.80, revealing good reliability. In the RF2 constructs, the factor loadings of items RF2.1 to RF2.4 are between 0.678 and 0.770, indicating strong indicators for the construct. Cronbach's alpha is 0.809, indicating internal consistency.

AVE is 0.51, confirming convergent validity since it accounts for half of the variance. CR is 0.80, revealing high reliability. In the RF3 constructs, the factor loadings of items RF3.1, RF3.2, and RF3.3 range from 0.661 to 0.729, indicating acceptable indicators for the construct.

Table 3
Reliability and validity

	Items	Loading of Factors	Cronbanch's Alpha	Average Variance	Composite Reliability
Content Quality (RF1)	RF1.1	0.736	0.797	0.57	0.80
	RF1.2	0.817			
	RF1.3	0.722			
Navigation and Visual Design (RF2)	RF2.1	0.728	0.809	0.51	0.80
	RF2.2	0.77			
	RF2.3	0.695			
	RF2.4	0.678			
Contact (RF3)	RF3.1	0.729	0.735	0.48	0.74
	RF3.2	0.661			
	RF3.3	0.692			
CS	CS1	0.875	0.847	0.66	0.85
	CS2	0.841			
	CS3	0.723			
CPV	CPV1	0.707	0.744	0.48	0.73
	CPV2	0.778			
	CPV3	0.589			

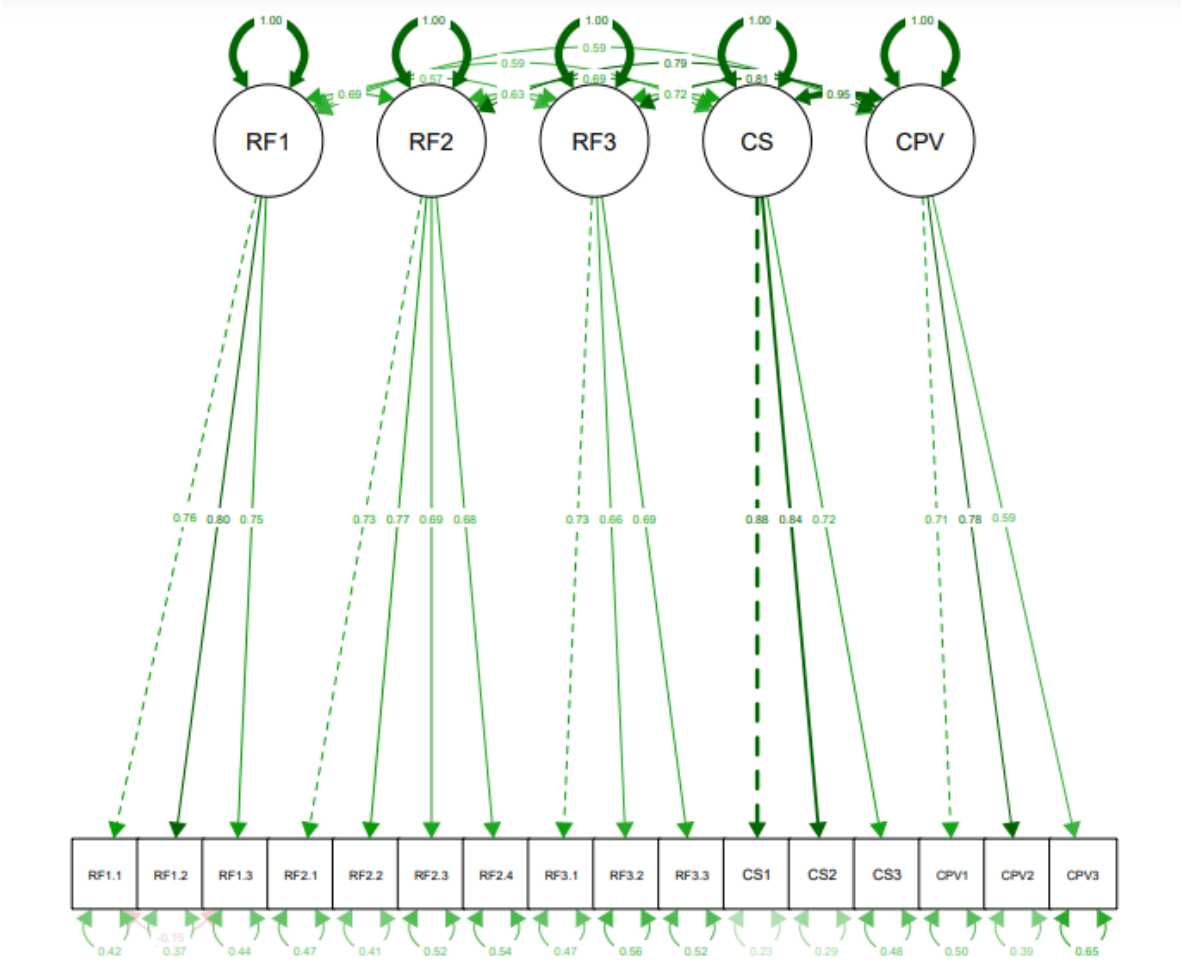
Source: Own elaboration.

Cronbach's alpha is 0.735, indicating internal consistency. AVE is 0.48, confirming the convergent validity. CR is 0.74, revealing acceptable reliability. In the CS constructs, the factor loadings of items CS1 and CS2 are above 0.849, which indicates strong indicators for the construct. Cronbach's alpha is 0.847, indicating internal consistency. AVE is 0.66, confirming the convergent validity since it illustrates a substantial variance. CR is 0.85, revealing excellent reliability. In the CPV constructs, the factor loadings of items CPV1 and CPV2 are above 0.707, indicating strong indicators for the construct, and CPV3 is less than 0.589, indicating a less significant contributor. Cronbach's alpha is 0.744, indicating internal consistency. AVE is 0.48, confirming the convergent validity. CR is 0.73, revealing adequate reliability. The findings support the robustness of the construct for further analysis.

Confirmatory factor analysis

In addition to examining factor loading, AVE, CR, and CFA were conducted to assess the model's fit. The measurement model for the study is depicted in Figure 6.

Figure 6
CFA – conceptual model



Source: Own elaboration.

The measurement model was examined by calculating seven fit indices, as indicated in Table 4. The model achieved a good fit on six indices and an acceptable fit on one index.

Table 4
CFA Fit Indices

Fit Indices	Recommended Value	Results	Results
X^2/df	<3.00	0.8092	Good
GFI	>0.90	0.920	Good
RMSEA	<0.08	0.056	Good
RMR	<0.08	0.034	Good
NFI	>0.90	0.910	Good
NNFI	>0.90	0.950	Good
CFI	>0.90	0.961	Good

Source: Own elaboration.

The key indices indicate that the CFA outcome suggests a good fit for the model. The ratio X^2/df is 0.8092, which is below the threshold value of 3.00, indicating potential alignment between the model and the observed data. GFI is 0.920, exceeding the threshold value of 0.90, proving that the model illustrates a substantial variance in the data.

RMSEA value is slightly above the value 0.056 and remains closer to the acceptable value in the context. RMR is 0.034, which is below the threshold of 0.08, indicating a good fit and suggesting small residuals between the predicted and observed covariances. NFI is reported to be 0.910, exceeding the acceptable value and proving that the model is a good fit compared to the baseline model. CFI is 0.961, significantly above the threshold value of 0.90, proving the model fits better than the null model (Table 4). Hence, the proposed model aligns with the observed data and aids in achieving the validity of the constructs in the research context.

Discriminant Validity

Discriminant validity was also tested, and the results indicated that all the constructs exhibit good discriminant validity. Table 5 provides the consequences of discriminant validity.

Table 5
Discriminant Validity

	RF1	RF2	RF3	CS	CPV
RF1	**0.759**				
RF2	0.694	**0.719**			
RF3	0.575	0.631	**0.695**		
CS	0.595	0.688	0.723	**0.816**	
CPV	0.604	0.788	0.807	0.949	**0.696**

Source: Own elaboration.

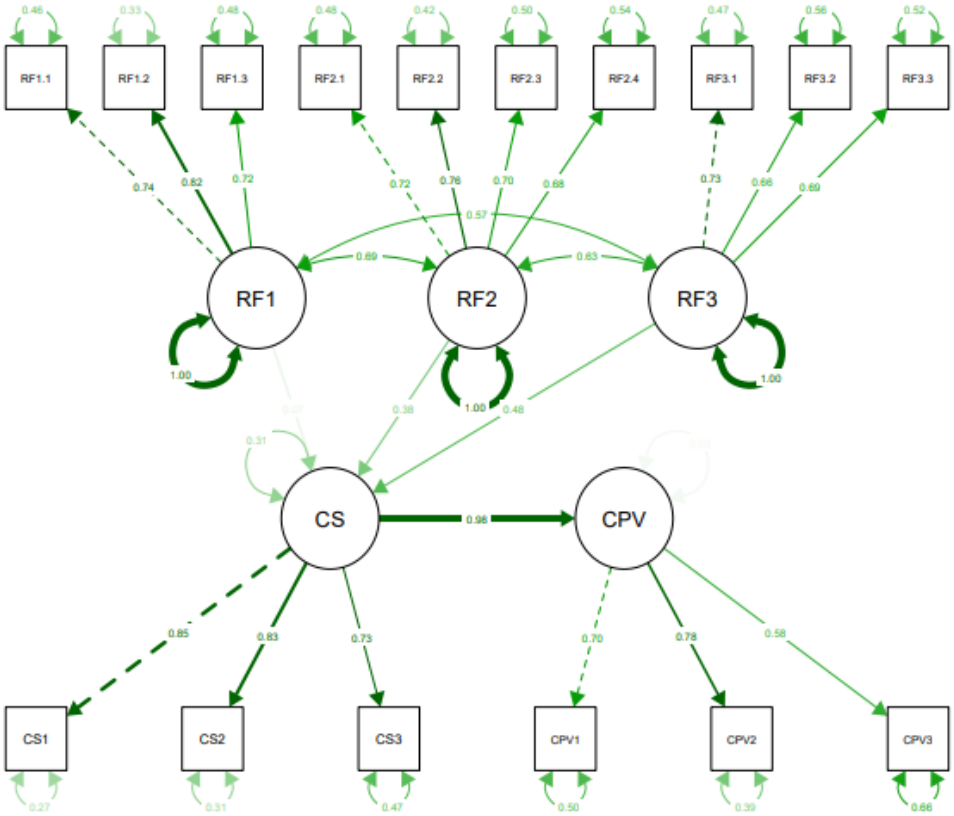
Table 5 illustrates the discriminant validity, which is established when the square root of AVE for each construct is greater than the correlation of other constructs. The table above represents AVE's square root as 0.759, 0.719, 0.695, 0.816, and 0.696 for RF1, RF2, RF3, CS, and CPV, respectively. These values are compared with the correlation value among the constructs. The correlation between RF1 and RF2 is 0.694, lower than AVE's square root. Subsequently, the correlation between RF2 and RF3 is 0.631, less than the square root of AVE for RF3.

Meanwhile, the correlation between CS and RF3 is 0.723, less than AVE's square root. The correlation of CPV and CS is 0.949 and is greater than the square root of AVE, indicating the overlapping of the constructs. Most constructs reveal adequate discriminant validity, proving a more significant correlation between CS and CPV. It describes a closer association among these constructs.

SEM

It is a potential statistical technique to analyze the complex association between latent and observed variables. It aids in illustrating the hypothesized relationship, thereby exhibiting the model's interpretation.

Figure 7
SEM



Source: Own elaboration.

Table 6
Hypothesis Testing Results – Direct Relationship

Proposed Hypothesis			Path Coefficient	P-Values (<0.05)	Support
Ha1	RF1 CS	Content Quality (RF1) have significant influence on Customer Satisfaction (CS)	.07	.00	Yes
Ha2	RF2 CS	Navigation and Visual Design (RF2) have significant influence on Customer Satisfaction (CS)	.38	.00	Yes
Ha4	RF3 □ CS	Contact (RF3) have significant influence on Customer Satisfaction (CS)	.48	.00	Yes
Ha5	CS □ CPV	Customer Satisfaction (CS) have significant influence on Customer Perceived Value (CPV)	.98	.00	Yes

Source: Own elaboration.

The study employs SEM utilizing R Studio to test the hypothesis. Figure 7 depicts the structural equation model, while Table 6 indicates the results of testing the direct relationship between RF1, RF2, and RF3 with CS and CS with CPV.

Table 7 illustrates the hypothesis testing for direct relationships. The path coefficient for the RF1 and CS relationship is 0.07, and a value of 0.00 indicates that the value is less than the threshold value of 0.05, proving that the null hypothesis is rejected. This suggests that RF1 impacts the CS of the model. It recommends other factors that might play a crucial role in predicting CS. The path coefficient for RF2 and CS is 0.38, with a p-value of 0.00, proving that RF2 substantially impacts CS. It reveals that a high level of RF2 leads to greater satisfaction.

Table 7
Hypothesis Testing Results – Simple mediation

Total Effect			Direct Effect			Indirect Effect (Bootstrap)				
Estimate	**SE**	**t-value**	**Estimate**	**SE**	**t-value**	**Estimate**	**SE**	**LLCI**	**ULCI**	**Outcome**
CS mediates the relationship between RF1 and CPV										
0.441	0.076	5.767	0.082	0.051	1.597	0.359	0.057	0.255	0.473	Partial Mediation
CS mediates the relationship between RF2 and CPV										
0.524	0.069	7.655	0.181	0.038	4.758	0.344	0.057	0.239	0.460	Partial Mediation
CS mediates the relationship between RF3 and CPV										
0.562	0.072	7.851	0.203	0.048	4.222	0.359	0.053	0.256	0.463	Partial Mediation

Source: Own elaboration.

Furthermore, the path coefficient between RF3 and CS is 0.48, and the p-value is 0.00, indicating statistical significance. Additionally, the path coefficient between CS and CPV is 0.98, and the p-value is 0.00, indicating statistical significance. The significant outcome demonstrates that CS has a positive impact on CPV and exhibits a positive association. The high level of CS resulted in greater CPV.

The total effect of RF1 and CPV is 0.441, with a SE of 0.076. Moreover, the t-value of 5.767 indicates that the relationship is statistically significant. The RF1 has a positive impact on CPV. In addition, the direct effect is 0.082, an insignificant value demonstrating the minimal effect of RF1 on CPV, where CS acts as a mediating factor. On the contrary, the indirect effect is 0.359, with a confidence interval (CI) ranging from 0.255 to 0.473, revealing that CS partially mediates the association between RF1 and CPV (Table 7).

Secondly, the total effect of RF2 on CPV is 0.524, indicating a strong and substantial association. The direct effect of RF2 on CPV is 0.181, and it is recommended that RF2 directly contributes to CPV along with the indirect effects through CS. The indirect effect is 0.344, with a confidence interval (CI) ranging from 0.239 to 0.460, indicating that CS partially mediates the association between RF2 and CPV.

Furthermore, the total effect of RF3 on CPV is 0.562, which indicates a strong and substantial association. The direct effect of RF3 on CPV is 0.203, and it is recommended that RF3 directly contributes to CPV along with the indirect effects through CS. The indirect effect is 0.359, with a confidence interval (CI) ranging from 0.256 to 0.463, indicating that CS partially mediates the association between RF3 and CPV.

DISCUSSION

The research study examines the impact of RF1 on customer satisfaction (CS) in online retail in Bengaluru. It also examines the impact of RF2 and RF3 on customer satisfaction (CS) in the online retail sector. The mediating role of CS in the association between m-application dimensions of service quality, such as RF1, RF2, RF3, and CPV.

All the questionnaire items exhibit factor loading well above the threshold level, thus exhibiting good convergent validity. The Discriminant validity was also tested, and the results indicated that all the constructs exhibit good discriminant validity. SEM indicates a direct relationship between RF1, RF2, and RF3, and between CS and CPV.

The outcome concludes that the CS partially mediates the association between RF1, RF2, and RF3 with CPV. Existing research (Revathi & Kavitha, 2025) suggests that high-quality content enhances user engagement and trust. It resulted in the CS having a digital service experience. It aligns with the present research, which emphasizes that RF1 substantially impacts the CS while they perceive content in the m-commerce as informative and relevant. Additionally, conventional research (Farhat et al., 2025) highlights that compelling content is correlated with CS and user experiences. Navigation and visual design are critical factors impacting CS, reducing frustration and improving the user experience. Conventional research (Halim et al., 2025) suggests that a structured interface fosters positive interactions and motivates repeat visits.

Another dimension of RF3 contact is the effectiveness and availability of consumer support. The existing research (Wattoo et al., 2025) enlightens on the effectual communication channels that impact loyalty and satisfaction in e-commerce. These findings align with the present study, indicating that the RF3 contact has a significant impact on CS. Also, it has been proven that CS acts as a mediating factor in RF1, RF2, RF3, and CPV. When consumers have easy access to and timely support, CS has increased (Alhassan et al., 2025). This aligns with the findings of existing research, which highlight the high e-service quality, resulting in a higher perceived value (Hanaysha et al., 2025). It fosters loyalty and motivates the purchase intention.

Limitations

Although this research brings essential insights into the effect of mobile application service quality on CPV, some limitations should be considered. The research limits its scope, preventing a comparative analysis by segments of different mobile e-commerce app users, such as differences in age, income, or technological skills, which could provide finer-grained perspectives on user attitudes. Moreover, the contribution of regulatory frameworks is not accounted for because of the uncertain macroeconomic context and cross-country policy variations, which can affect user expectations and experiences.

Additionally, the analysis does not distinguish between urban and rural mobile e-commerce app users, potentially overlooking differences in access to technology, internet connectivity, and shopping patterns that may impact perceptions of service quality. Notwithstanding these limitations, the results highlight the importance of mobile applications in achieving successful online shopping outcomes. Addressing such limitations in subsequent research may help generate a broader picture of consumer behavior and perceptions of service quality across various settings.

CONCLUSION

The research underscores the critical connection between the quality of e-services and the value customers perceive when using mobile applications. It highlights the significance of content quality, ease of navigation, design, and customer support communication. The study's results suggest that companies should prioritize providing high-quality and relevant content, as well as investing in user-friendly navigation systems, to enhance the overall user experience. Additionally, it is crucial to create visually appealing designs and offer strong customer support to retain users and cultivate loyalty.

The research outcome indicates that the quality of mobile app service has a positive influence on CPV. Among the various dimensions of service quality, reliability, and consumer service significantly impact the customer satisfaction (CS). Thirdly, the quality of content impacts the CS. Moreover, CS has a positive influence on planned buying behavior. Businesses must also address privacy issues to establish trust with users.

By embracing a culture of constant improvement through regular feedback and performance evaluations, organizations can adjust to evolving user expectations and technological developments. Ultimately, focusing on these aspects will enable companies to provide enjoyable user experiences that foster engagement and drive success in the competitive mobile app industry.

REFERENCES

Alhassan, S., Basit, F., Ibrahhim, S., & Awini, G. (2025). Does E-Service Quality Heighten Customer Satisfaction and Loyalty? In *Digital Transformation in the Customer Experience* (pp. 53-71): Apple Academic Press.

AlSondos, I., & Salameh, A. (2020). The effect of system quality and service quality toward using m-commerce service, based on consumer perspective. *Management Science Letters*, 10(11), 2589-2596.

Anwar, A., Thongpapanl, N., & Ashraf, A. (2021). Strategic imperatives of mobile commerce in developing countries: the influence of consumer innovativeness, ubiquity, perceived value, risk, and cost on usage. *Journal of Strategic Marketing,* 29(8), 722-742. https://doi.org/10.1080/0965254X.2020.1786847

Aqeel, S. (2021). A Usability Evaluation of M-commerce Apps. *University of Sindh Journal of Information and Communication Technology*, 5(4), 184–207.

Basoglu, N., Daim, T., & Sofuoglu, E. (2009). A decision methodology for customising software products. *International Journal of Industrial and Systems Engineering*, 4(5), 554-576. https://doi.org/10.1504/IJISE.2009.024158

Baur, N. (2019). Linearity vs. circularity? On some common misconceptions on the differences in the research process in qualitative and quantitative research. *Frontiers in Education,* 4. https://doi.org/10.3389/feduc.2019.00053

Butt, S., & Umair, T. (2023). Nexus Among Online Banking Services, Perceived Value and Consumer's Post-Adoption Behaviour. *Journal of Asian Development Studies*, 12(4), 1016-1032. https://doi.org/10.62345/jads.2023.12.4.81

Çelik, K. (2021). The effect of e-service quality and after-sales e-service quality on e-satisfaction. *Business & Management Studies: An International Journal*, 9(3), 1137–1155. https://doi.org/10.15295/bmij.v9i3.1898

Chopdar, P., & Balakrishnan, J. (2020). Consumers' response towards mobile commerce applications: SOR approach. *International Journal of Information Management*, 53, 102106. https://doi.org/10.1016/j.ijinfomgt.2020.102106

Cronin Jr, J., & Taylor, S. (1992). Measuring service quality: a reexamination and extension. *Journal of Marketing*, 56(3), 55–68. https://doi.org/10.1177/002224299205600304

Dastane, O., Goi, C., & Rabbanee, F. (2020). A synthesis of constructs for modelling consumers' perception of value from mobile-commerce (M-VAL). *Journal of Retailing and Consumer Services*, 55, 102074.

https://doi.org/10.1016/j.jretconser.2020.102074

Duan, Y., Liu, T., & Mao, Z. (2022). How online reviews and coupons affect sales and pricing: An empirical study based on e-commerce platform. *Journal of Retailing and Consumer Services*, 65, 102846. https://doi.org/10.1016/j.jretconser.2021.102846

Farhat, R., Yang, Q., Ahmed, M., & Hasan, G. (2025). E-Commerce for a Sustainable Future: Integrating Trust, Product Quality Perception, and Online-Shopping Satisfaction. *Sustainability*, 17(4), 1431. https://doi.org/10.3390/su17041431

Guzman, V., & Al-Hakimi, M. (2024). *Adapting E–Commerce Success Factors to Service-Oriented E–Business: A Comparative Analysis*. Master's Thesis in Industrial Management and Innovation. Uppsala University.

Halim, E., Gui, A., Valencia, G., & Kurniawati, Y. E. (2025). The Impact of Website Design, E-Service Quality, Satisfaction, Trust to Intention to Purchase Skin Care Products in the E-Marketplace. *19th International Conference on Ubiquitous Information Management and Communication (IMCOM).*

Hamilton-Ibama, E., & Ogonu, C. G. (2022). Customer perceived value and customer satisfaction of hotels in Port Harcourt, Nigeria. *South Asian Journal of Marketing & Management Research (SAJMMR)*, 12(1-2), 75-93.

Hanaysha, J., Shriedeh, F., & Gulseven, O. (2025). Impact of website quality, product assortment, customer reviews, and perceived service quality on online loyalty: the role of perceived value as a mediator. *Cogent Business & Management,* 12(1), 2433706. https://doi.org/10.1080/23311975.2024.2433706

Hassan, H. E. (2024). The role of mobile shopping service quality in enhancing customers M-satisfaction, M-loyalty, and E-word of mouth. *Future Business Journal*, 10(1), 109. https://doi.org/10.1186/s43093-024-00396-4

Hossain, S., Xi, Z., Nurunnabi, M., & Hussain, K. (2020). Ubiquitous role of social networking in driving M-Commerce: evaluating the use of mobile phones for online shopping and payment in the context of trust. *Sage Open*, 10(3), 2158244020939536. https://doi.org/10.1177/21582440209395

Hsiao, M. (2022). Post-purchase behaviour from customer perceived value of mobile payment services. *Journal of Modelling in Management*, 17(4), 1524–1543. https://doi.org/10.1108/JM2-11-2020-0293

Huang, E., Lin, S., & Fan, Y. (2015). MS-QUAL: Mobile service quality measurement. *Electronic Commerce Research and Applications,* 14(2), 126–142. https://doi.org/10.1016/j.elerap.2015.01.003

Huma, S., Ahmed, W., Ikram, M., & Najmi, A. (2024). Influence of mobile application

service quality and convenience on young customer retention. *Spanish Journal of Marketing-ESIC*. https://doi.org/10.1108/SJME-11-2023-0310

Kandampully, J. (1998). Service quality to service loyalty: A relationship which goes beyond customer services. *Total Quality Management*, 9(6), 431-443. https://doi.org/10.1080/0954412988370

Kandel, B. (2020). Qualitative versus quantitative research. *Journal of Product Innovation Management*, 32(5), 658.

Lakens, D. (2022). Sample size justification. *Collabra: psychology*, 8(1), 33267. https://doi.org/10.1525/collabra.33267

Lin, K., Wang, Y., & Huang, T. (2020). Exploring the antecedents of mobile payment service usage: Perspectives based on cost–benefit theory, perceived value, and social influences. *Online information review*, 44(1), 299-318. https://doi.org/10.1108/OIR-05-2018-0175

Lucas, G., Lunardi, G., & Dolci, D. (2023). From e-commerce to m-commerce: An analysis of the user's experience with different access platforms. *Electronic Commerce Research and Applications*, 58, 101240.

Marcos, A. & Coelho, A. (2022). Service quality, customer satisfaction and customer value: holistic determinants of loyalty and word-of-mouth in services. *The TQM Journal*, 34(5), 957–978. https://doi.org/10.1108/TQM-10-2020-0236

Maxwell, J. (2021). Why are qualitative necessary for generalization? *Qualitative Psychology*, 8(1), 111. https://doi.org/10.1037/qup0000173

Mcleod, S. (2023). Qualitative vs. Quantitative Research Methods and Data Analysis. simplypsychology. org Available: https://www. simplypsychology. org/qualitative-quantitative. html [Accessed Feb. 12th, 2023].

Miao, M., Jalees, T., Zaman, S., Khan, S., Hanif, N., & Javed, M. (2022). The influence of e-customer satisfaction, e-trust and perceived value on consumer's repurchase intention in B2C e-commerce segment. *Asia Pacific Journal of Marketing and Logistics*, 34(10), 2184–2206. https://doi.org/10.1108/APJML-03-2021-0221

Mohajan, H. (2020). Quantitative research: A successful investigation in natural and social sciences. *Journal of Economic Development, Environment and People*, 9(4), 50–79.

Oloveze, A., Okonkwo, R., Nwachukwu, C., Ogbonna, C., & Chukwuoyims, K. (2022). User behaviour on continuance intention to use M-commerce in African context: mediating effect of perceived value. *LBS Journal of Management & Research,* 20(1/2), 21-33. https://doi.org/10.1108/LBSJMR-05-2022-0018

Omar, S., Mohsen, K., Tsimonis, G., Oozeerally, A., & Hsu, J. (2021). M-commerce: The nexus between mobile shopping service quality and loyalty. *Journal of Retailing and Consumer Services*, 60, 102468. https://doi.org/10.1016/j.jretconser.2021.102468

Osman, I., Omar, E., Ratnasari, R., Furqon, C., & Sultan, M. (2024). Perceived service quality and risks towards satisfaction of online halal food delivery system: from the Malaysian perspectives. *Journal of Islamic Marketing*, 15(9), 2198-2228. https://doi.org/10.1108/JIMA-06-2023-0176

Ou, C., Chen, K., Tseng, W., & Lin, Y. (2022). A study on the influence of conformity behaviors, perceived risks, and customer engagement on group buying intention: A case study of community e-commerce platforms. *Sustainability*, 14(4), 1941. https://doi.org/10.3390/su14041941

Parasuraman, A., Zeithaml, V. & Berry, L. (1988). Servqual: A multiple-item scale for measuring consumer perc. *Journal of Retailing*, 64(1), 12.

Parasuraman, A., Zeithaml, V., & Malhotra, A. (2005). ES-QUAL: A multiple-item scale for assessing electronic service quality. *Journal of Service Research*, 7(3), 213-233. https://doi.org/10.1177/1094670504271156

Revathi, M., & Kavitha, P. (2025). The impact of perceived e-service quality, service value, usefulness and trust on customer perceptions on e-service satisfaction towards e-traveling service. *International Journal of Management (IJM)*, 16(2).

Sharma, A., Joshi, R., & Wali, O. (2020). Human Capital: A Key Driver of Consumer Decision-making in Online Promotion (An Application of Grounded Theory in Exploratory Research). *Asia-Pacific Journal of Management Research and Innovation*, 16(2), 132–145. https://doi.org/10.1177/2319510X209312

Shrestha, N. (2021). Factor analysis as a tool for survey analysis. *American Journal of Applied Mathematics and Statistics*, 9(1), 4–11.

Sousa, S., Correia, E., Viseu, C., & Larguinho, M. (2022). Analysing the influence of companies' green communication in college students' green purchase behaviour: An application of the extended theory of planned behaviour model. *Administrative Sciences*, 12(3), 80. ; https://doi.org/10.3390/admsci12030080

Sreekumar, D. (2023). *What is Quantitative Research? Definition Methods Types and Examples| Researcher*. Life. Researcher. life.

Stocchi, L., Pourazad, N., Michaelidou, N., Tanusondjaja, A., & Harrigan, P. (2022). Marketing research on Mobile apps: past, present and future. *Journal of the Academy of Marketing Science*, 1-31. https://doi.org/10.1007/s11747-021-00815-w

Stratton, S. (2021). Population research: convenience sampling strategies. *Prehospital and*

disaster Medicine, 36(4), 373–374. https://doi.org/10.1017/S1049023X21000649

Susiang, M., Suryaningrum, D., Masliardi, A., Setiawan, E., & Abdillah, F. (2023). Enhancing customer experience through effective marketing strategies: The context of online shopping. SEIKO: *Journal of Management & Business*, 6(2), 437-447. https://doi.org/10.37531/sejaman.v6i2.5235

Susilawati, A., Wahyudi, F., Putra, W., Supriyanto, W., & Limpo, L. (2024). The Impact of Digital User Experience on Brand Perception and Consumer Loyalty in the E-Commerce Industry in Indonesia. *The Eastasouth Journal of Information System and Computer Science*, 1(03), 109-122. https://doi.org/10.58812/esiscs.v1i03.244

Taherdoost, H. (2021). Data collection methods and tools for research; a step-by-step guide to choose data collection technique for academic and business research projects. *International Journal of Academic Research in Management (IJARM*), 10(1), 10-38.

Thanasrichatthon, K. (2023). *Influences of Customer Satisfaction, Perceived Value and Brand Personality on Customer's Purchase Intention of Luxury Cars*. Bangkok University

Uzir, M., Al Halbusi, H., Thurasamy, R., Hock, R., Aljaberi, M., Hasan, N., & Hamid, M. (2021). The effects of service quality, perceived value and trust in home delivery service personnel on customer satisfaction: Evidence from a developing country. *Journal of Retailing and Consumer Services*, 63, 102721. https://doi.org/10.1016/j.jretconser.2021.102721

Wattoo, M., Du, J., Shahzad, F., & Kousar, S. (2025). Shaping E-commerce Experiences: Unraveling the Impact of Service Quality on Youth Customer Behavior in a Developing Nation. *SAGE Open*, 15(1), 21582440241311786. https://doi.org/10.1177/21582440241311

Wirtz, J., Fritze, M., Jaakkola, E., Gelbrich, K., & Hartley, N. (2021). Service products and productization. *Journal of Business Research*, 137, 411-421. https://doi.org/10.1016/j.jbusres.2021.08.033

Wu, B., & Andrizal, K. (2021). Perceived value and willingness to consume in online mobile games. *Social Behavior and Personality: an International Journal*, 49(5), 1-10. https://doi.org/10.2224/sbp.10193

Yadav, S., Kumar, A., & Sinha, A. (2024). Modeling the Critical Success Factors for Continuous Usage Intention of Foodservice Mobile Apps *Journal of Foodservice Business Research*, 1–22. https://doi.org/10.1080/15378020.2024.2421051

Yunus, N., Mohd, M., Salleh, N., & Ibrahim, N. (2024). The Impact of E-Service Quality on E-Loyalty: In the case of Online Shopping Mobile Applications in Malaysia. *International Journal of Academic Research in Business and Social Science*, 14(8).