

MANAGING LOGISTIC SERVICE QUALITY IN AN E-COMMERCE ENVIRONMENT: THE PERSPECTIVE OF GENDER DIFFERENCES IN QUALITY ASSESSMENT

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Purpose: The purpose of this study is to examine the role of gender in service quality perceptions, an example of e-logistic service quality. The paper attempts to study the various dimensions of e-service quality affecting online shopping satisfaction and to examine whether gender differences exist in the perceptions of e-service quality dimensions in online shopping.

Design/methodology/approach: The research was conducted on a group of 127 young consumers in October 2025. The research group consisted of women (52.75%) and men (47.25%), aged from 19 to 23. The survey was used to determine satisfaction levels concerning logistic service quality in an e-commerce environment. The study was based on a five-point Likert scale. The following determinants of logistic service quality have been taken into consideration: delivery conditions (cost and time of ordered product delivery, possibility and conditions of product return), e-commerce website design, reliability and online transaction security. In order to get a better look at which factors are related to each other, a data analysis was carried out, which determined the correlation between the level of satisfaction with selected factors and the division of groups with respect to gender. The analysis of the correlation of individual factors affecting the satisfaction level was carried out at the 0.05 level of significance.

Findings: Similar to the findings in past research, this study confirms the differences between genders in the assessment of different dimensions of e-logistic service quality. Men and women have different preferences related to delivery conditions (time and cost of delivery, return of goods), e-commerce website features and its reliability, as well as transaction security.

Research limitations/implications: The findings of this study are beneficial from the practitioners' perspective, because they indicate considerable differences in quality assessment between male and female customers. Such conclusions may affect the managers handling the e-commerce companies to match their offer individually, depending on the customer's gender. Understanding the most influential elements for customers' decision-making is not only beneficial for the future development of e-logistics but also for increasing customer satisfaction in e-commerce and the successful improvement of quality management in e-commerce companies.

Originality/value: Some research has investigated the effects of gender differences between service quality and satisfaction relationships; however, the study on gender roles remains infrequent. Therefore, the exploration of this research problem is necessary in order to provide

a suitable, comprehensive and measurable framework for assessing logistic service quality in e-commerce and to indicate the gender differences in e-logistics service quality assessment. Furthermore, improving the understanding of gender differences is a beneficial marketing strategy which aims to improve e-commerce companies. Several studies have noted that gender is a valid variable sufficiently strongly connected with service quality perception. For marketing purposes, gender differences may be noteworthy to be considered as a separate dimension, which plays an important role in quality perception and customer satisfaction. For that reason, this study attempts to extend the previous studies by examining the gender differences effect in quality assessment and customers' requirements fulfilment on the example of logistic service quality in e-commerce.

Keywords: e-commerce, consumer satisfaction, quality management, logistic service quality, gender differences.

Category of the paper: research paper.

1. Introduction

Quality is a vital and intricate component of e-business strategy, particularly when it comes to customer experiences. The primary factor in fulfilling e-commerce customers' needs is the combination of prompt delivery and exceptional service. The internet significantly impacts consumers' ordering processes, requirements, expectations, and shopping behaviours, while also creating new opportunities within the e-commerce landscape. As online retail continues to expand rapidly, the quality of service provided by e-retailers has become a crucial determinant of success for e-commerce businesses.

The exponential growth of e-commerce and e-logistics has fundamentally transformed consumer purchasing behaviours and expectations. As online shopping platforms become increasingly competitive, understanding the nuanced factors that influence customer satisfaction and loyalty becomes paramount. Service quality has emerged as a critical determinant of competitive advantage in e-commerce environments, yet empirical evidence suggests that consumer expectations and perceptions of service quality are not uniform across demographic segments (Lee, Lin, 2005).

Service quality in e-commerce can be defined as the consumers' overall evaluation and perception of the excellence and e-service quality offerings in the virtual marketplace (Santos, 2003). Customer satisfaction in e-commerce, as in traditional services, depends on the gap between customers' expectations and the actual e-service experience (Zeithaml, 2003). Researchers suggest that logistics service quality (LSQ) can influence customer satisfaction, indicating that the quality of logistics services can have a positive and significant impact on fulfilling customers' requirements in e-commerce transactions (Saura, Ruiz-Molina, 2011). Most of the studies on e-retail service quality have concentrated on developing measures for the evaluation of websites, but measuring e-service quality should go beyond the website interface. The customer's online experience encompasses everything from information search,

product evaluation, decision-making, transaction security, delivery, return conditions, and customer service. Measures for evaluating just websites may not be sufficient for measuring service quality across various stages of the online retail service delivery (Rafiq et al., 2012).

Studies related to the issue of customer satisfaction and quality assessment are sensible due to the dynamic nature of the business environment and customer preferences. Service quality is generally considered a significant explanatory factor for customers' satisfaction in online shopping (González et al., 2007; Meng, Elliott, 2009; Chotisarn, Phuthong, 2025). It is necessary to explore the problem of e-service quality evaluation in the context of different customers' characteristics. Demographic variables, such as age, gender, education and socioeconomic status, are known as customer characteristics. These characteristics are significant determinants of consumer behaviours, requirements and preferences (Juwaheer, 2011; Mokhlis, 2012; Aslam et al., 2024). Therefore, this study seeks to exploit gender differences to determine the level of satisfaction in response to service quality, for example, e-logistic service quality. Males and females can be different in traits, attitudes, and activities that are able to influence consumer behaviour because each gender observes the environment, evaluates and retrieves information, and makes decisions in different ways (Karatepe, 2011). The current literature dealing with the interaction of gender with service quality and satisfaction is, however, still lacking (Mokhlis, 2012; Rajaratnam, 2020).

Some research has investigated the effects of gender differences between service quality and satisfaction relationships; however, the study on gender roles remains infrequent. For example, Im and Ha (2011) called for further studies on gender differences in quality perception and customer satisfaction fulfilment because their analysis pointed out significant gender differences in several aspects of service quality.

Therefore, the exploration of this research problem is necessary in order to provide a suitable, comprehensive and measurable framework for assessing logistic service quality in e-commerce and to indicate the gender differences in e-logistics service quality assessment.

Furthermore, improving the understanding of gender differences is a beneficial marketing strategy which aims to improve e-commerce companies. Several studies have noted that gender is a valid variable sufficiently strongly connected with service quality perception (Juwaheer, 2011; Mokhlis, 2012; Nieves-Pavón et al., 2025). For marketing purposes, gender differences may be noteworthy to be considered as a separate dimension, which plays an important role in quality perception and customer satisfaction. For that reason, this study attempts to extend the previous studies by examining the gender differences effect in quality assessment and customers' requirements fulfilment on the example of e-logistic service quality. Understanding the most influential elements for customers' decision-making is not only beneficial for the future development of e-logistics but also for increasing customer satisfaction in e-commerce and successful improvement of quality management in e-commerce companies.

The purpose of this study is to examine the role of gender in service quality perceptions, an example of e-logistic service quality. The paper attempts to study the various dimensions of e-service quality affecting online shopping satisfaction, and to examine whether gender differences exist in the perceptions of e-service quality dimensions in online shopping.

This study applies the following research methods: analysis of scientific literature, online survey, and statistical analysis of data (correlation analysis).

The study is structured as follows. After this introduction, the theoretical foundations and hypotheses that support the study have been described. The next section details the methodological procedures, followed by an analysis of data, and defines the dimensions of the proposed framework and its indicators. The results of the research have been presented and discussed. Finally, a conclusion and suggestions for the continuation of the research have been presented.

2. Literature review and hypotheses development

An e-commerce platform serves as a fundamental base for multi-channel transactions, where multiple third parties provide product or service information, and the platform operator processes transactions. Due to its role in supplying product and service details, an e-commerce platform operating company can also be regarded as a service provider. Consequently, an e-platform exhibits various characteristics as a service provider and can be assessed based on its service quality (Choi, Mai, 2018). Logistic service quality is measured by comparing customers' expectations with their perceptions of service quality. Before placing an order, customers already have expectations of what the service provider should deliver. Therefore, the perceived quality of logistic services by the client is the difference between their expectations and their perception of actual performance (Wolfenbarger, Gilly, 2003).

Understanding how consumers perceive and evaluate online consumer service is critical for providing superior service quality (Marimon et al., 2010). Traditional service quality assessment is based on the well-known SERVQUAL model, which proposes five dimensions of service quality: responsiveness, assurance, tangibles, empathy, and reliability (Pasuraman, Berry, 1988). However, this service quality assessment model focuses on traditional buyer-seller interactions rather than on the interaction between customers and websites, which is a distinguishing feature of e-commerce service quality. As a result, researchers expanded this model to other dimensions specific to the online environment, such as information quality (Kim et al., 2012), transaction security, transaction cost savings, convenience, reliability, accessibility, ease of use, responsiveness, usefulness, or interaction possibilities (Anderson, Swaminathan, 2011).

The website serves as the primary communication channel between customers and retailers in e-commerce. As a result, online shopping websites create and fulfil customer expectations, transfer value, and communicate. As a result, a good e-commerce site design can attract more customers with a positive first impression and make the purchase process easier to access for any part, from searching, ordering, paying, tracking, receiving, and after-sales (Kalia et al., 2017; Lee et al., 2025).

Although research on service quality has been popular for many years, it has only recently begun to be conducted in the e-commerce environment. In fact, there is a wide range of opinions about the most important factors influencing online consumer behaviour and satisfaction. The dominant factors influencing consumer perceptions of online purchasing are website characteristics, privacy, security, and the quality of logistical services, which is one of the most important elements in meeting the needs of customers in e-commerce (Querin, Göbl, 2017).

Many studies have been conducted to investigate the impact of gender differences on perceptions of e-service quality, with the goal of better understanding gender-based differences in attitude, perception, belief, and behaviour toward online purchasing. Gender, as a fundamental demographic characteristic, significantly influences how consumers assess and evaluate service quality in online environments. Research has consistently demonstrated that men and women differ in their shopping preferences, risk perception, trust development, and response to website design elements. These differences are rooted in distinct information processing patterns, varying expectations shaped by social roles and cultural norms, and divergent preferences regarding service attributes (Hsu, 2012; Moss et al., 2006).

Previous research on gender effects on customer perceptions of service quality yielded conflicting results. According to Stafford (1996), service quality may be more important to women than men. In contrast, another study discovered that male customers were more likely to rate service quality higher for given services than their female counterparts (Snipes et al., 2006). Other research has shown that male clients have a more positive perception of service quality than female clients (Spathis et al., 2006). Furthermore, there are several other examples of studies that show that female customers tend to rate service quality lower when compared to both genders (Lin et al., 2001; Tan, Kek, 2004; Juwaheer, 2011).

Previous studies have shown that men and women have different psychological predispositions related to online purchases, with males being found to have more positive attitudes toward online shopping (Wolin, Korgaonkar, 2003). Men and women have different perceptions of security issues in e-commerce environments, resulting in different purchasing behaviour (Garbarino, Strahilevitz, 2004).

Studies have revealed that gender plays an important role in e-commerce platforms (Pascual-Miguel et al., 2015; Ulbrich et al., 2011; Trabelsi-Zoghalmi et al., 2020). For example, men are more focused on value gained through purchases, whereas women focus on trustworthiness and ability to socially interact (Slyke et al., 2010).

Gender influences online purchasing behaviour, and female purchasing behaviour is related to their attitude toward online service providers. However, in the case of males, this was found to be the opposite (Sebastiannelli et al., 2008). However, Cyr and Bonanni (2005) found no significant difference between men and women in terms of transaction security, trust, and e-loyalty.

In their study, Kolsaker and Payne (2002) discovered that trust is the factor on which most people express concern when making online purchases, and there was no significant difference between men and women. Gender-based differences were discovered in online purchases in terms of emotions, trust, and convenience (Rodgers, Harris, 2003; Kim et al., 2011). It is possible to argue that women place more emphasis on quality because they consider and evaluate in detail every single aspect of the services they acquire, whereas male customers evaluate the overall aspects (Karatepe, 2011; Teo et al., 2025). As a result, female customers are more likely to have higher expectations for service quality than male customers (Juwaheer, 2011; Liana et al., 2023). Other research found that women and men have different associations with the functional and relational dimensions of service quality in terms of satisfaction and loyalty. Male customers had higher functional service quality, whereas female customers had higher relational service quality (Sánchez-Hernández et al., 2010; Kanwal et al., 2022; Mayori, Handrito, 2024).

However, the study found that male respondents rated perceived service quality higher than female respondents. Five SERVQUAL dimensions explained 48.1 per cent of the variance in male customer satisfaction and 53.8% of the difference in female customer satisfaction (Mokhlis, 2012). Furthermore, the results of Karatepe's (2011) study demonstrated the importance of gender in the relationship between service quality and customer satisfaction.

As a result, the relationship between service quality and satisfaction appears to differ between male and female customers. Given all of the findings, the available literature suggests that men and women have different attitudes and perceptions about online shopping. Based on a review of the collected literature, the following hypotheses were developed for this study:

Hypothesis 1 (H1): *Gender affects the assessment of e-logistic service quality in online shopping, which in turn impacts customer satisfaction related to website design and reliability.*

Hypothesis 2 (H2): *Gender plays a role in the evaluation of e-logistic service quality in online shopping and influences customer satisfaction concerning delivery conditions, including delivery time, cost, and the return process.*

Hypothesis 3 (H3): *Gender influences the assessment of e-logistic service quality in online shopping, thereby affecting customer satisfaction related to transaction security.*

This paper examines the most widely acknowledged evaluation criteria for assessing logistic service quality within the e-commerce context and proposes a comprehensive framework for evaluating the quality of any e-commerce service, taking into account gender

differences in quality assessment. The following determinants of e-logistic service quality have been considered: delivery conditions (including the cost and time of product delivery, as well as the conditions and procedures for product returns), the design and reliability of e-commerce websites, and the security of online transactions. Understanding gender-based differences in e-logistics service quality assessment holds substantial theoretical and practical importance. From a theoretical perspective, it advances knowledge about how demographic characteristics shape consumer perception and decision-making in digital environments. Practically, it enables e-commerce organisations to tailor their service delivery, website design, and quality management strategies to address the distinct preferences and priorities of male and female consumer segments, thereby enhancing overall customer satisfaction and competitive positioning.

3. Materials and methods

The research was conducted on a group of 127 young consumers in October 2025. The data was collected in the form of a survey carried out on the e-learning website. Each participant of the study was asked to answer the survey questions. The research group consisted of women (52.75%) and men (47.25%), aged from 19 to 23. The survey was used to determine satisfaction levels concerning time invested in waiting for delivery, to assess the quality of services related to the delivery process, and to identify factors that affect the lack of satisfaction with purchases. The study was based on a five-point Likert scale (from 1- not important to 5- very important). The following determinants of e-logistic service quality have been taken into consideration: delivery conditions (cost and time of ordered product delivery, possibility and conditions of product return), e-commerce website design, reliability and online transaction security. Because the collected data came from 127 participants of the study, it was checked whether the respondents had any undesirable convergence between answers and questions. For that purpose, Cohen's kappa coefficient was used, which was determined for all 5 pairs of observations occurring in the scope of a given respondent. The average value was 0.147, and the average value for all respondents did not exceed 0.062. This indicates a low convergence of these answers. The reliability was assessed using Cronbach's Alpha (α). For all research variables, the obtained values exceeded 0.8. Cronbach's alpha demonstrated strong internal consistency; therefore, the measurements are reliable, and the assessment tool is suitable for research purposes.

Based on a previous literature study, five e-logistic service quality attributes influencing customers' satisfaction in online shopping were selected and then subjected to examination (Table 1). The distribution of attributes related to delivery conditions (cost and time of delivery, return of goods), e-commerce website design and reliability, and transaction security was

divided on the basis of gender, because previous literature studies indicate significant differences in the shopping satisfaction of both men and women.

Table 1.
The arithmetic mean of the customer satisfaction level

Arithmetic mean		Delivery cost	Delivery time	Easy return of products	E-commerce website design and reliability	Security of online transactions
	women	4.72	4.51	4.57	4.81	4.68
	men	3.96	4.83	4.21	3.92	4.36

Source: own study.

In order to get a better look at which factors are related to each other, a data analysis was carried out, which determined the correlation between the level of satisfaction with selected factors and the division of groups with respect to gender. The analysis of the correlation of individual factors affecting the satisfaction level was carried out at the 0.05 level of significance. The results of the correlation matrix are presented in Tables 2 and 3.

Table 2.
Correlation matrix for men

Variables	Correlations (men) Marked correlation coefficients are significant at $p < 0.05$						
	Mean	Standards deviation	Delivery cost	Security of online transactions	Website design and reliability	Delivery time	Easy return of products
Delivery cost	3.846	0.821	1.000	0.732	0.217	0.641	0.187
Security of online transactions	3.357	1.517	0.732	1.000	0.683	0.921	0.773
Website design and reliability	4.132	0.751	0.217	0.683	1.000	0.372	0.324
Delivery time	4.783	0.396	0.641	0.921	0.372	1.000	0.000
Easy return of products	4.526	0.693	0.187	0.773	0.324	0.000	1.000

Source: own study.

Table 3.
Correlation matrix for women

Variables	Correlations (women) Marked correlation coefficients are significant at $p < 0.05$						
	Mean	Standards deviation	Delivery cost	Security of online transactions	Website design and reliability	Delivery time	Easy return of products
Delivery cost	4.251	0.832	1.000	0.000	0.046	-0.152	-0.457
Security of online transactions	4.000	0.917	0.000	1.000	0.531	0.693	0.428
Website design and reliability	4.273	0.983	0.046	0.531	1.000	0.457	-0.248

Cont. table 3.

Delivery time	4.217	0.649	-0.136	0.693	0.457	1.000	-0.049
Easy return of products	3.891	0.857	-0.459	0.428	-0.237	-0.049	1.000

Source: own study.

The findings of the correlation analysis will be discussed in the following section of this paper. The study highlights key differences in how female and male customers evaluate different quality dimensions. This insight can significantly enhance quality management practices in e-commerce companies, thereby improving overall customer satisfaction with the online shopping experience.

4. Results and discussion

The delivery conditions in online shopping have a direct impact on customer satisfaction within the e-commerce market (see Table 1). The selected delivery features have been appropriately chosen, reflecting average satisfaction ratings ranging from 3.92 to 4.83 on a five-point scale. Analysing delivery features reveals that men and women have differing expectations and preferences. For both genders, the most critical aspects related to delivery conditions are the delivery time and the ease of returning rejected products. This information is vital for online shop managers, as it highlights the necessity of ensuring convenient delivery times and facilitating the immediate return of goods.

The cost of delivery, a crucial aspect of shopping satisfaction, has not been definitively established. The study reveals that women place greater importance on this factor, scoring it at 4.72 points and 3.96 in the case of male customers. In contrast, men prioritise delivery time more significantly, with a score of 4.83 points, compared to a lower score of 4.51 for female customers. Thus, viewing delivery through the lens of cost is merely one element in the broader context of customer satisfaction.

Another vital contributor to customer satisfaction in online shopping is the design and reliability of e-commerce websites. This aspect holds greater significance for women, who rate it at 4.81 points, compared to men, who rate it at 3.92 points. These results indicate notable differences between the preferences of men and women regarding the design, aesthetics, functionality, and reliability of e-commerce sites. Similar discrepancies are observed in the realm of transaction and payment security, where women exhibit a greater concern for the safety of online transactions, rating this factor at 4.68 points, while men rate it at 4.36. Easy return of product is also more important for women (4.57) compared to male customers (4.21).

The correlation analysis provided insights into various phenomena. For male customers (as shown in Table 2), the security of online transactions shows a strong correlation with delivery time (0.921) and ease of product return (0.773). The visible correlation also exists between the security of online transactions and delivery cost (0.732). Also, the security of online transactions is visibly correlated with website design and reliability (0.683). In addition, in the case of male customers, the delivery time and cost are also notably correlated (0.641). A significantly smaller correlation was observed between website design and delivery time (0.372), easy product return (0.324) and delivery cost (2.17). Moreover, among male customers exists a weak correlation between easy product return and delivery cost (0.187). As individual consumers, men are particularly concerned about transaction security due to the inherent risks associated with online purchases. Consequently, e-commerce companies should prioritise solutions that enhance payment security and facilitate product returns to minimise transaction risk. Men seek a seamless and quick purchasing experience with a low level of uncertainty.

In the case of female customers (refer to Table 3), the security of online transactions is notably correlated with delivery time (0.693). There also exists a visible correlation between website design and the reliability and security of online transactions (0.531). Moreover, in the case of female customers, the correlation between website design and reliability and product delivery time is 0.457. In addition, in the case of women, there also exists a notable correlation between the security of online transactions and the easy return of the product (0.428). There is also a little correlation between website design and reliability and product delivery cost (0.046). This trend aligns with the modern consumer's preference for quick and efficient transactions, reflecting a limited availability of time. These aspects of online customer satisfaction should be carefully considered in collaborations with courier services and online payment providers. Additionally, the return of goods demonstrates a negative correlation with delivery costs and time, as well as the design and reliability of e-commerce websites. This suggests that women exhibit a practical approach; the ease of returning items is a crucial factor contributing to their satisfaction (as indicated in Table 1), implying that they place less importance on the time and costs associated with item collection. This insight is valuable for e-commerce entrepreneurs, as it indicates that facilitating easy returns can grant greater flexibility in delivery times and costs without compromising customer satisfaction.

Service quality has emerged as a critical determinant of competitive advantage in e-commerce environments. Yet, empirical evidence suggests that consumer expectations and perceptions of service quality are not uniform across demographic segments.

Gender, as a fundamental demographic characteristic, significantly influences how consumers assess and evaluate service quality in online environments. This study has demonstrated that men and women differ in their shopping preferences, risk perception, trust development, and response to website design elements. These differences are rooted in distinct information processing patterns, varying expectations shaped by social roles and cultural norms, and divergent preferences regarding service attributes.

The significant role of gender in the relationship between service quality dimensions and customer satisfaction has been discussed and empirically proven. Similar to the findings in past research, this study confirms the differences between genders in the assessment of different dimensions of e-logistic service quality. Men and women have different preferences related to delivery conditions (time and cost of delivery, return of goods), e-commerce website features and its reliability, as well as transaction security. Thus, all research hypotheses were supported at the significance level of 0.05. Furthermore, the findings of this study are beneficial from the practitioners' perspective as well, because they indicate considerable differences in quality assessment between male and female customers. Such conclusions may affect the managers handling the e-commerce companies to match their offer individually, depending on the customer's gender.

Gender influences service quality assessment through a variety of interconnected mechanisms, including differences in information processing, divergent expectations shaped by social roles, varying risk perception, and a distinct trust-building process in relations with customers. Gender differences exist in the evaluation of website design. Women place a higher value on thorough information, unambiguous instructions, and professional presentation, while men place a higher value on functional efficiency and quick access to important information.

Also, e-commerce website reliability dimensions receive differential emphasis, with female consumers assigning substantially greater weight to reliability in service quality assessment and exhibiting higher sensitivity to reliability failures. This pattern reflects females' higher perceived risk in e-commerce and their more comprehensive trust-assessment processes.

When it comes to security, trust, and risk assessment, gender disparities in service quality perception are especially noticeable. The study has shown that women are more concerned about privacy and security risks in online transactions than men. Women's stronger emphasis on security dimensions has implications for how they assess logistics service quality, as they may place greater weight on assurances regarding package security, confidential handling of personal information, and transparent data protection policies. Women tend to have stronger negative reactions to privacy concerns and security breaches, implying that logistics service providers targeting female customers should prioritise demonstrating security competence and data protection measures. Communication about security measures may be essential in addressing female customers' concerns, given the moderating effect of gender on the relationship between security perceptions and consumer behaviour.

While the significance of timeliness is widely acknowledged within the context of e-commerce logistics, this study reveals that gender serves as a moderating variable influencing the weighting attributed to delivery speed.

Men generally prioritise fast delivery as a key indicator of service quality, perceiving speed as a fundamental measure of operational efficiency and excellence. This study suggests that logistics service providers may enhance female customer satisfaction by focusing on reliable and consistent delivery within reasonable timeframes, rather than solely pursuing high speed at

a greater cost. Order accuracy and the assurance that products arrive undamaged are vital dimensions of logistics service quality. The findings indicate that women place particular importance on these dimensions, perceiving errors in order fulfilment as lapses in attention to detail and care. This perspective aligns with the broader trend of women valuing reliability and meticulous execution in service delivery. Women tend to experience greater dissatisfaction when they receive incorrect items or encounter product damage. In contrast, men, while also preferring accurate orders and undamaged products, exhibit a slightly higher tolerance for occasional mistakes, provided the logistics provider demonstrates responsiveness in addressing these issues.

The extent to which perceived service performance meets or exceeds customer expectations reveals distinct gender-related antecedents and formation processes within logistics service contexts. For female customers, satisfaction is shaped by a combination of both functional performance aspects, such as accurate order fulfilment and timely delivery, as well as relational elements, such as the ease of product returns. In contrast, male customers' assessment of e-logistics service quality relies more heavily on functional performance metrics and the achievement of specific service outcomes. While relational dimensions are not altogether irrelevant for male customers, their absence is less likely to lead to dissatisfaction if functional performance aligns with expectations. This differentiation indicates that distinct satisfaction optimisation strategies are necessary for male and female customer segments.

Understanding these gender-based differences in e-logistics service quality assessments is of considerable theoretical and practical significance. Theoretically, it enhances the comprehension of how demographic characteristics influence consumer perceptions and decision-making in digital environments. Practically, it empowers e-commerce companies to customise their service delivery, website design, and quality management strategies to cater to the unique preferences and priorities of male and female consumers, thereby improving overall customer satisfaction and strengthening competitive positioning.

5. Conclusion

Gender differences in consumer behaviour and service quality perception stem from a complex interplay of sociological, psychological, and cultural factors. In this paper, the perceptual differences in e-logistic service quality dimensions across genders have been studied, and significant differences between male and female customers have been found. The study successfully verified the positive relationship between service quality and satisfaction, as well as the role of gender as a factor which determines quality perception. Analysis of the collected data answered the study's hypotheses, contributing to the knowledge about the dependency between gender, customer satisfaction, and the considered dimensions of

e-logistic service quality, such as delivery conditions (delivery cost and time, return of goods), e-commerce website design and reliability, and online transaction security.

This study confirms that gender significantly affects how male and female customers perceive, evaluate, and respond to logistics service quality in e-commerce environments. While both genders appreciate effective logistics service quality, consistent empirical evidence indicates that women emphasise relational dimensions, whereas men prioritise functional aspects. These gender differences are evident across various service quality dimensions, including expectations regarding delivery conditions, transaction security, e-commerce website design, customer service responsiveness, and considerations of trust and data protection.

By understanding these gender-specific patterns, logistics service providers and e-commerce retailers can implement more effective and targeted quality management strategies. Recognising that different customer segments prioritise distinct service quality dimensions enables organisations to make more strategic resource allocation decisions, design service improvements that deliver maximum satisfaction for specific customer segments, and develop communication strategies that resonate with their target audiences.

Differences in responses between male and female customers should send a clear message to e-commerce company managers that they are dealing with two distinct customer segments and that these differences need to be taken into account if they want to enhance customers' perceptions of e-logistic service quality. This study helps to understand the perceptual differences across genders related to quality requirements and experiences during online purchases. The paper attempts to identify factors that distinguish gender identity and are important from the point of view of supply chain management in e-commerce. It becomes very obvious that this subject is a huge field for further scientific research related to, among other things, a different attitude to the product, ecology, or responsibility and management.

The findings of this study are beneficial from the practitioners' perspective because they indicate considerable differences in quality assessment between male and female customers. Such conclusions may affect the managers handling the e-commerce companies to match their offer individually, depending on the customer's gender. Understanding the most influential elements for customers' decision-making is not only beneficial for the future development of e-logistics but also for increasing customer satisfaction in e-commerce and successfully improving quality management in e-commerce companies.

Understanding gender-specific preferences in the assessment of logistics service quality is essential for developing targeted strategies that enhance customer experiences. This study highlights the managerial implications that logistics service providers must pursue excellence not through a one-size-fits-all model of service quality but by strategically customising their approaches based on an evidence-based understanding of what different customer segments prioritise. E-commerce companies should simultaneously uphold minimum acceptable standards across all service quality dimensions while strategically emphasising those areas that yield the greatest satisfaction improvements for specific gender-segmented customer groups.

Female customers tend to be more sensitive to communication quality and exhibit greater concerns regarding security and privacy. Given the heightened security and privacy concerns identified among female e-commerce customers, logistics providers should craft explicit communications that underscore their security measures, data protection protocols, and confidentiality practices. This might include featuring certification displays, security badges, transparency in privacy policies, and proof of compliance with data protection regulations in communications aimed at female customers.

While male customers also value security, they may respond sufficiently to more succinct security messaging, provided there are positive indicators of reputation and past performance. Customising security communication to address gender-specific concerns presents an opportunity to mitigate privacy anxiety without unnecessary redundancy for segments that have lower baseline security concerns.

To achieve practical improvements, organisations should adopt gender-informed strategies that recognise and accommodate these differences. This study suggests that uniform approaches to service quality enhancement are suboptimal. Organisations that aim for superior competitiveness are increasingly acknowledging that excellence in service quality requires a nuanced understanding of the diverse preferences across different customer segments, with gender serving as a significant basis for such segmentation.

This work is exploratory and aims to draw attention to fixed delivery attributes. The relatively small size of the research sample does not allow generalisation of results. Future research should be based on a larger sample and, in addition, increase the number of features describing the level of satisfaction and apply multi-indicator latent variables. In addition, even though gender is an important aspect to be considered during the stage of marketing strategy development, it is not the only characteristic on which the marketing efforts should be based. Due to this reason, the inclusion of only one demographic factor, that is, gender, is considered a limitation of the study. Other demographic variables, such as age, culture, education level, and income, must also be considered in future studies and when developing marketing strategies.

The direction for future research would be to examine the effect of all electronic service quality dimensions across the other demographic variables. Additionally, this study does not cover all the e-service quality dimensions in detail because of the scarcity of time and resources, so there is scope for future research on the same aspect, taking other dimensions which have not been discussed in the study. E-commerce environments continue to evolve rapidly, with emerging technologies including artificial intelligence, augmented reality, and sophisticated personalisation algorithms transforming service delivery. Whether traditional gender differences persist in these novel contexts remains an open question. Future research should also examine how gender differences in service quality assessment evolve as technology and consumer expectations change.

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