

What Matters in Cross-Border E-Commerce? A Study of Customer Satisfaction Drivers

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ABSTRACT

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Purpose: This study aims to identify the variables influencing customer satisfaction in cross-border e-commerce. The variables considered include service quality, information availability, website performance, reliability, security, product variety, price value, delivery, customer service, and personalization.

Method: The study employs a quantitative approach, using primary data obtained through a questionnaire survey. Classical assumption tests and multiple linear regression analyses were conducted using SPSS software to evaluate the hypothesized model. A total of 342 validated responses were analyzed, focusing on respondents with experience in cross-border e-commerce transactions.

Result: The findings reveal that service quality, security, product variety, price value, and delivery have a significant and positive effect on customer satisfaction. Conversely, information availability, website performance, reliability, customer service, and personalization were found to have no significant impact.

Practical Implications for Economic Growth and Development: This research offers valuable insights for cross-border e-commerce businesses to enhance the key drivers of customer satisfaction. Improving these factors can increase customer retention and loyalty, leading to higher repeat purchases and trust in the platforms, thereby boosting sales and revenue. By attracting a larger international customer base and expanding market share, businesses can achieve a competitive advantage in the global marketplace. This contributes to the promotion of international trade and fosters economic integration.

Keywords: *customer satisfaction, cross-border e-commerce, online shopping, service quality, security, delivery*

INTRODUCTION

The COVID-19 pandemic has significantly transformed various aspects of life, including shifting traditional commerce to online shopping through e-commerce platforms. E-commerce encompasses diverse operations conducted via electronic platforms, such as the internet and other computer networks, including product and service sales, purchases, marketing, and distribution (Kedah, 2023). In Indonesia, the e-commerce sector experienced a 39% year-on-year growth, driven by the development of digital payment methods, according to a report by PPRO (2023). This growth is further supported by Indonesia's large, tech-savvy youth demographic, with individuals aged 15–29 comprising 24% of the population—nearly 67 million people (Badan Pusat Statistik, 2023). The Indonesian government has also promoted e-commerce growth through initiatives such as the National Online Shopping Day (*Harbolnas*), which encourages e-commerce adoption and boosts trade, particularly for local products (International Trade Administration, 2022).

E-commerce in Indonesia has since expanded into cross-border e-commerce (CBEC), enabling users to purchase goods from abroad and allowing online retailers to sell their products across multiple countries (Kawa & Światowiec-Szczepańska, 2021). A report by PPRO (2022) revealed that 25% of Indonesian e-commerce users engage in cross-border



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shopping, with 41% of transactions originating from China, 10% from the United States, and 10% from Singapore. Access to untapped markets enables online retailers to reach a broader customer base, enhancing business outcomes and profitability (Masyhuri, 2022).

To thrive in the dynamic global market, e-commerce companies must prioritize customer satisfaction. According to Kim and Hwang (2005), the product purchasing process generally involves five key stages. It begins with the recognition of a need, followed by exploring availability and options, evaluating possibilities, and comparing choices to find the best match. The fourth stage involves making the purchase, followed by delivery to the specified location. Finally, the overall shopping experience is evaluated to determine satisfaction and the likelihood of repeat purchases. An e-commerce platform's success hinges on its ability to maintain customer satisfaction across these five stages. Satisfied customers provide a competitive advantage, ensuring customer loyalty and retention, while companies that fail to meet customer expectations risk losing out to competitors offering similar products (Rosli & Nayan, 2020).

Several factors influence customer satisfaction with e-commerce platforms. A study by Sanyala and Hisamb (2019) in Oman found that satisfaction is significantly impacted by accessibility, ease of use, payment convenience, security, and pricing. Research by Wilis and Nurwulandari (2020) on the Traveloka platform showed that service quality, trust, price, and brand image positively affect customer satisfaction. Similarly, Jaiswal and Singh (2020) in India identified economic value, customization, security, post-purchase experience, and customer service as key determinants of satisfaction.

In Indonesia, studies such as that of Wilson and Christella (2019) have primarily focused on domestic e-commerce platforms, identifying reliability, time savings, product variety, and delivery performance as significant drivers of customer satisfaction. In contrast, this study investigates customer satisfaction in the context of cross-border e-commerce platforms, which facilitate international purchases. By exploring distinctive factors influencing customer satisfaction in cross-border transactions, this research offers a unique perspective, setting itself apart from previous studies through its choice of variables and sample selection.

METHOD

This study adopts a quantitative approach, collecting primary data through a survey. A total of 342 questionnaires were distributed to respondents who had made international purchases via cross-border e-commerce platforms in Indonesia, such as Shopee, Lazada, JD.ID, and Blibli. Of these, 342 responses met the criteria for analysis. The sample size was determined based on the guidelines by Hair et al. (2019), which suggest that for studies with unknown populations, the number of respondents should be at least ten times the number of indicators, with an ideal sample size between 150 and 400. The research employs non-probability sampling, specifically judgmental sampling, to ensure the inclusion of respondents with relevant experience in cross-border e-commerce transactions.

A 5-point Likert scale was used for the survey, ranging from 1 (strongly disagree) to 5 (strongly agree). A pretest was conducted with 66 respondents to validate the questionnaire's reliability, clarity, and comprehensibility. After confirming the validity and reliability of all items, the main survey data were meticulously reviewed for completeness and accuracy. The data were then analyzed using classical assumption tests and multiple linear regression with SPSS software to examine the correlations between variables. The factors explored in this study include service quality, information availability, website performance, reliability, security, product variety, price value, delivery, customer service, and personalization.

Table 1. Variable Measurement

Variables	Indicators	Statements	Sources
Service Quality	SQ1	This CBEC platform provides comprehensive and detailed information.	(Kaya et al., 2019)
	SQ2	Completing transactions on this CBEC platform is quick and straightforward.	(Kaya et al., 2019)
	SQ3	This CBEC platform is efficient and does not waste my time.	(Kaya et al., 2019)
Information Availability	IA1	The product information available online on this CBEC platform aligns with the information provided in stores.	(Vasic et al., 2019)
	IA2	The product information available online on this CBEC platform is accurate.	(Vasic et al., 2019)
	IA3	The product information available online on this CBEC platform is up-to-date.	(Vasic et al., 2019)
Website Performance	WP1	This CBEC platform operates consistently to support business processes.	(M. A. Khan et al., 2019)
	WP2	This CBEC platform functions and loads quickly.	(M. A. Khan et al., 2019)
	WP3	This CBEC platform remains stable and does not crash.	(M. A. Khan et al., 2019)
Reliability	R1	This CBEC platform fulfills its commitments within the promised timeframe.	(Rodríguez et al., 2020)
	R2	This CBEC platform handles customer complaints promptly.	(Rodríguez et al., 2020)
	R3	Issues are resolved effectively after the first complaint.	(Rodríguez et al., 2020)
Security	S1	I trust that this CBEC platform will not misuse my personal information.	(Nguyen, 2020)
	S2	I feel secure when making transactions on this CBEC platform.	(Nguyen, 2020)
	S3	I am confident that this CBEC platform protects my personal information.	(Nguyen, 2020)
Product Variety	ProV1	The product variety on this CBEC platform is clear and extensive.	(Mofokeng, 2021)
	ProV2	I can find most of the products I need on this CBEC platform.	(Mofokeng, 2021)
	ProV3	This CBEC platform offers a wide range of items in specific categories.	(Mofokeng, 2021)
Price Value	PriV1	The products purchased from this CBEC platform are reasonably priced.	(Rao et al., 2021)
	PriV2	Shopping online on this CBEC platform provides quality and benefits that justify the money spent.	(Rao et al., 2021)

	PriV3	At the offered prices, shopping online on this CBEC platform provides excellent value.	(Rao et al., 2021)
Delivery	D1	This CBEC platform offers various shipping options at reasonable prices.	(Rodríguez et al., 2020)
	D2	Products are delivered within the promised timeframe.	(Mofokeng, 2021)
	D3	I receive the exact items I ordered from this CBEC platform.	(Rodríguez et al., 2020)
Customer Service	CS1	The guidance on this CBEC platform's pages is well-designed and helps me easily find important information.	(Zhou et al., 2018)
	CS2	I receive immediate assistance from online customer service when needed.	(Zhou et al., 2018)
	CS3	The online customer service on this CBEC platform resolves my issues efficiently.	(Zhou et al., 2018)
Personalization	P1	This CBEC platform allows me to create and manage my own shopping cart.	(Sharma & Aggarwal, 2019)
	P2	This CBEC platform stores customer preferences and recommends products based on those preferences.	(Jaiswal & Singh, 2020)
	P3	This CBEC platform customizes the shopping experience according to customer preferences.	(Jaiswal & Singh, 2020)
Customer Satisfaction	CSat1	I am satisfied with this CBEC platform.	(Sharma & Aggarwal, 2019)
	CSat2	I would recommend this CBEC platform to my friends and family.	(Sharma & Aggarwal, 2019)
	CSat3	I enjoy online shopping on this CBEC platform.	(Sharma & Aggarwal, 2019)

Source: Compiled by the authors (2024)

Hypotheses Development

Service Quality and Customer Satisfaction

Service quality refers to a company's ability to deliver virtual services that meet customer needs (Vasic et al., 2019). Providing high-quality service is a key strategy for companies seeking to gain a competitive edge and attract customers to purchase products or services (Wandi et al., 2020). Superior service quality enhances customer experiences by meeting or exceeding customer expectations, which in turn boosts satisfaction. Maintaining high service quality creates a competitive advantage, as satisfied customers are more likely to make repeat purchases, provide positive word-of-mouth recommendations, and remain loyal to the brand. This dynamic fosters long-term customer satisfaction and contributes to business success (Sofyani et al., 2020; Suchánek & Králová, 2019).

H1: Service quality has a significant positive effect on customer satisfaction in cross-border e-commerce websites or apps

Information Availability and Customer Satisfaction

Information availability is crucial during the pre-purchase phase on online retail platforms, as it reflects the e-retailer's quality and significantly influences consumer loyalty when it is accurate, relevant, and comprehensive. When an e-retailer provides detailed product descriptions, transparent pricing, and accurate information, it fosters a sense of trust and transparency, thereby enhancing customer satisfaction (Al-Tit, 2020). Well-structured and readily accessible information reduces cognitive effort and decision-making time, resulting in a seamless shopping experience. Moreover, enhanced information availability contributes to post-purchase satisfaction by minimizing disputes and returns, as customers have clear expectations of the products they are purchasing. The e-retailer's ability to deliver timely and relevant information directly correlates with higher customer satisfaction and retention rates. To support effective decision-making, e-commerce websites must ensure the provision of timely, reliable, and high-quality updates (Mofokeng, 2021).

H2: Information availability has a significant positive effect on customer satisfaction in cross-border e-commerce websites or apps

Website Performance and Customer Satisfaction

A website is critical to the success of online businesses, as it creates the first impression for potential customers and serves as the primary point of contact during online purchases (Tandon et al., 2020). Effective website performance plays a pivotal role in e-commerce by driving traffic, retaining visitors, and boosting sales (Lan et al., 2021). Website performance significantly enhances customer satisfaction through various elements, including usability, navigation, and visual design. Enhanced usability ensures that users can interact with the website easily, reducing frustration and increasing engagement (Guo et al., 2023). By providing a seamless and efficient user experience, well-performing websites contribute to higher levels of customer satisfaction and loyalty.

H3: Website performance has a significant positive effect on customer satisfaction in cross-border e-commerce websites or apps

Reliability and Customer Satisfaction

Reliability refers to the ability to complete tasks correctly and consistently without failure (Raza et al., 2020). It also involves the capacity to deliver promised services accurately, consistently, promptly, and on schedule (Rodríguez et al., 2020). The reliability of cross-border e-commerce (CBEC) platforms enhances customer satisfaction by ensuring consistent and accurate service delivery across key touchpoints. This includes providing detailed and truthful product information, ensuring timely and error-free delivery despite logistical challenges, and maintaining secure transaction systems that protect customer data (Aljohani, 2024).

H4: Reliability has a significant positive effect on customer satisfaction in cross-border e-commerce websites or apps

Security and Customer Satisfaction

Security, defined as a website's ability to prevent unauthorized disclosure of user data during transactions, plays a key role in customer satisfaction (Vasic et al., 2019). Security enhances customer satisfaction by fostering trust and confidence in the platform or service. Customers who perceive their personal and financial data as secure are more likely to engage with and trust the service provider. Robust measures, such as secure payment gateways, data encryption, and two-factor authentication, reduce the risk of fraud and data breaches—primary concerns for customers in digital transactions. Prioritizing security not only mitigates risk but also enhances the user experience by offering peace of mind, ultimately boosting satisfaction and loyalty (Aljohani, 2024).

²
H5: Security has a significant positive effect on customer satisfaction in cross-border e-commerce websites or apps

Product Variety and Customer Satisfaction

The primary reason for offering a wide variety of products is that online stores have virtually unlimited space, allowing them to provide a diverse range of products that better meet customer needs. A broader product selection increases the likelihood of customers finding exactly what they are looking for, reducing the need to browse multiple platforms and enhancing convenience (Wilson & Christella, 2019). Customers value the ability to compare options within a single platform, which not only improves the shopping experience but also boosts satisfaction with the retailer's ability to comprehensively serve their needs (Sahai et al., 2020).

²
H6: Product variety has a significant positive effect on customer satisfaction in cross-border e-commerce websites or apps

Price Value and Customer Satisfaction

Price value serves as a comparative measure for consumers when selecting goods or services. The relationship between price value and customer satisfaction is rooted in how consumers perceive the fairness and worth of the price in relation to the quality and utility of the goods or services offered (Wilis & Nurwulandari, 2020). Customers who perceive a higher value for the price are more likely to develop loyalty and repeat purchase intentions. This relationship is particularly strong in competitive markets where consumers have multiple choices, highlighting the importance of aligning pricing strategies with customer expectations and perceptions of value (Zhao et al., 2021).

²
H7: Price value has a significant positive effect on customer satisfaction in cross-border e-commerce websites or apps

Delivery and Customer Satisfaction

E-retailers can enhance customer satisfaction by ensuring timely, accurate, and well-managed deliveries (Rita et al., 2019). Customers value fast, reliable delivery, as it builds trust and encourages repeat purchases (Wilson & Christella, 2019). Advancements in delivery options, such as the integration of tracking features and personalized delivery times, further improve the overall customer experience, which in turn increases their satisfaction with the platform (Vrhovac et al., 2024).

²
H8: Delivery has a significant positive effect on customer satisfaction in cross-border e-commerce websites or apps

Customer Service and Customer Satisfaction

Effective customer support during and after sales is crucial for the success of online platforms. Platforms should ensure user-friendly interfaces, detailed product information, smooth payment processes, and prompt issue resolution without time restrictions. Implementing 24/7 customer relationship management (CRM) systems across multiple channels, such as phone and email, can further improve the customer experience (Jaiswal & Singh, 2020; Sharma & Aggarwal, 2019). Prompt and reliable customer support reduces frustration and increases trust, leading to higher levels of customer satisfaction and loyalty.

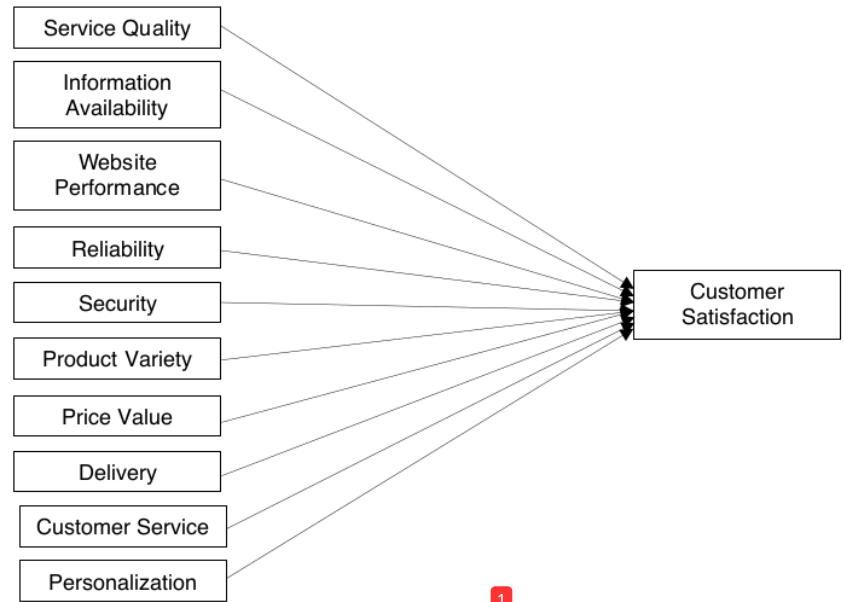
⁴
H9: Customer service has a significant positive effect on customer satisfaction in cross-border e-commerce websites or apps

Personalization and Customer Satisfaction

Personalization enables e-retailers to tailor products, services, and transactions to individual customers by utilizing their data and offering recommendations. This approach enhances customer satisfaction by better meeting individual needs and preferences. Personalized experiences are particularly effective in fostering loyalty, as customers feel valued and understood, encouraging repeat purchases and long-term relationships with the brand (I. Khan et al., 2020).

H10: Personalization has a significant positive impact on customer satisfaction in cross-border e-commerce websites or apps

Figure 1. Research Framework



1 Source: Developed by the authors (2024)

RESULT AND DISCUSSION

Demographic of Respondents

The majority of respondents were female (69%), indicating higher participation by women in surveys and online shopping activities. Most respondents were aged 17–25 years (88.30%), reflecting a strong preference for online shopping among tech-savvy younger generations. A significant portion of the respondents were students (79.82%) with monthly incomes below IDR1,500,000 (46.49%), reflecting the financial constraints typical of this demographic. Notably, 58.19% spent over six hours online daily, and 51.75% shopped online at least once a month, demonstrating a strong digital presence and consistent shopping habits. Shopee was the most commonly used cross-border e-commerce platform (49.70%), likely due to its popularity and reliable services.

Construct Validity Test

In assessing the validity of the questionnaire, construct validity is a key element. Factor loading analysis is commonly used to evaluate construct validity. According to Ghazali (2011) and Hair et al. (2009), a statement item is considered valid if it has a factor loading value above 0.6, indicating a strong relationship between the statement item and the measured variable. The following Table 2 presents the factor loading results for all statement indicators.

Table 2. Construct Validity Test

Indicators	Loading Factor
SQ1	0.780
SQ2	0.739
SQ3	0.748
IA1	0.771
IA2	0.859
IA3	0.785
WP1	0.749
WP2	0.772
VP3	0.741
R1	0.711
R2	0.846
R3	0.847
S1	0.853
S2	0.802
S3	0.876
ProV1	0.792
ProV2	0.785
ProV3	0.786
PriV1	0.721
PriV2	0.784
PriV3	0.803
D1	0.766
D2	0.813
D3	0.706
CS1	0.760
CS2	0.853
CS3	0.817
P1	0.686
P2	0.796
P3	0.814
CSat1	0.766
CSat2	0.809
CSat3	0.791

Source: Processed data (2024)

Based on the results of the construct validity test, it can be concluded that all the factor loading values of the statement indicators exceed 0.6. This confirms the validity of all the statement indicators and their ability to accurately represent each variable being tested

Criterion Validity Test

In the criterion validity test, a correlation is conducted between each item score in the questionnaire and the total score of the respondents' answers. According to Santoso (2011),

a statement is considered valid if it has a correlation greater than 0.3, with a significance value less than 0.05. Table 3 below summarizes the correlation and significance values for each statement indicator in the questionnaire.

Table 3. Criterion Validity Test

Indicators	Pearson Correlation	Sig (2-tailed)
SQ1	0.758	0.000
SQ2	0.740	0.000
SQ3	0.769	0.000
IA1	0.776	0.000
IA2	0.858	0.000
IA3	0.780	0.000
WP1	0.701	0.000
WP2	0.731	0.000
WP3	0.815	0.000
R1	0.689	0.000
R2	0.849	0.000
S3	0.861	0.000
S1	0.868	0.000
S2	0.788	0.000
S3	0.872	0.000
ProV1	0.781	0.000
ProV2	0.786	0.000
ProV3	0.795	0.000
PriV1	0.732	0.000
PriV2	0.784	0.000
PriV3	0.793	0.000
D1	0.750	0.000
D2	0.788	0.000
D3	0.747	0.000
CS1	0.745	0.000
CS2	0.857	0.000
CS3	0.826	0.000
P1	0.724	0.000
P2	0.769	0.000
P3	0.804	0.000
CSat1	0.756	0.000
CSat2	0.814	0.000
CSat3	0.797	0.000

Source: Processed data (2024)

Table 3 shows the correlation between each statement indicator and the variables used, with all correlation values exceeding 0.3. The significance values for all statement indicators are 0.000, indicating that they are all below the 0.05 threshold. Therefore, all statement indicators reflecting the variables in this study have been proven to be valid and can accurately represent those variables.

Reliability Test

A reliability test is considered acceptable if the Cronbach's Alpha value is greater than 0.6 (Hair et al., 2011). If the reliability test is met, it indicates that the questionnaire produces

consistent results when repeated measurements are taken. The results of the reliability test for the questionnaire items are presented in Table 4 below.

Table 4. Cronbach's Alpha

Variables	Cronbach's Alpha
SQ	0.623
IA	0.730
WP	0.601
R	0.724
S	0.795
ProV	0.693
PriV	0.657
D	0.635
CS	0.738
P	0.647
CSat	0.697

Source: Processed data (2024)

The Cronbach's Alpha values for each item and variable meet the reliability test, as all values are above 0.6, with the lowest being 0.601 and the highest being 0.795. This indicates good consistency and reinforces the reliability of the measurement instrument used.

Hypotheses Testing

The t-test is considered valid if the significance value is less than 5% (0.05) (Ghozali, 2011). When the t-test criteria are met, it indicates a partial influence between the independent variable (X) and the dependent variable (Y). Conversely, if the significance value exceeds 5% (0.05), it suggests no partial influence between the independent variable (X) and the dependent variable (Y). The results of the t-test are presented in Table 5 below.

Table 5. The t-test Result

Effect Direction	Std. Coefficients Beta	Sig.	Conclusion
SQ → CSat	0.199	0.000	Accepted
IA → CSat	-0.038	0.488	Rejected
WP → CSat	0.082	0.135	Rejected
R → CSat	-0.147	0.015	Rejected
S → CSat	0.172	0.001	Accepted
ProV → CSat	0.155	0.002	Accepted
PriV → CSat	0.236	0.000	Accepted
D → CSat	0.156	0.007	Accepted
CS → CSat	0.029	0.629	Rejected
P → CSat	0.075	0.135	Rejected

Source: Processed data (2024)

Standardized Coefficients Beta are used to determine the type and direction of the influence, while the significance value indicates whether there is a statistically significant relationship between the variables. According to Table 5, hypothesis testing conducted using SPSS revealed that not all variables had a significant direct effect on customer satisfaction. Out of the 10 variables tested, 5 were accepted with significance values less than 0.05, while the others were rejected. The results indicated that service quality and price value had the most

significant impact on customer satisfaction in CBEC platforms, with t-values having a significance of 0.000.

Discussion

The findings of this study reveal a positive and significant effect on customer satisfaction in CBEC websites or applications, supporting Hypothesis 1 (H1). This indicates that higher service quality leads to greater customer satisfaction. High service quality includes the platform's ability to deliver an effective and efficient shopping, payment, and product delivery experience. By improving service quality, customers are more satisfied due to the platform's ease of use and organized structure. Service quality contributes to overall customer satisfaction by meeting or exceeding customer expectations. These results align with research conducted in Serbia by Vasic et al. (2019) and in Turkey by Kaya et al. (2019), which demonstrated that better service quality in e-commerce has a significant and positive impact on customer satisfaction.

Hypothesis 2 (H2), which posits that information availability ⁵ has a positive and significant effect on customer satisfaction in CBEC websites or applications, is not supported. The findings indicate that higher information availability correlates with lower customer satisfaction. Excessive or irrelevant information can overwhelm customers, making it difficult for them to navigate or make informed decisions, leading to dissatisfaction. Therefore, information must be relevant and of high quality. Poorly organized or difficult-to-access information can create frustration and negatively impact satisfaction. Research by Bintari et al. (2022) and Mofokeng (2021) supports this view, highlighting that information availability did not significantly improve customer satisfaction on platforms like Tokopedia and other South African platforms. To enhance satisfaction, e-commerce platforms should focus on providing high-quality, accurate, and easily accessible information that is well-organized and clearly presented.

Hypothesis 3 (H3), which asserts that website performance has a positive and significant impact on customer satisfaction, is rejected. Although website performance does have some influence on customer satisfaction, its impact is neither strong nor significant in this study. This low impact may stem from the perception that websites are often viewed as basic communication tools that do not directly influence customer satisfaction. While website functionality is important, many customers prioritize service quality and overall experience, which extend beyond mere website performance. Consumers are more focused on outcomes such as product delivery and after-sales service, which align more with service quality than website functionality. This result is consistent with studies conducted in Turkey by Kaya et al. (2019) and in Indonesia by Wilson & Christella (2019), which reported that website performance had little impact on service quality and customer satisfaction.

Hypothesis 4, which proposes that reliability ⁵ has a positive and significant effect on customer satisfaction in CBEC websites, is also rejected. The findings indicate a significant decrease in customer satisfaction with increased reliability. This may be due to the complex nature of CBEC transactions, where high expectations for flawless service can lead to dissatisfaction when discrepancies occur. Furthermore, cultural and logistical challenges in cross-border operations may influence customer perceptions of reliability, potentially overshadowing the benefits of consistent service delivery. This aligns with research by Ali et al. (2021) in Iraq and Fida et al. (2020) in Oman, which showed that reliability did not positively affect satisfaction. To address this, CBEC providers must fulfill promises, resolve issues promptly, and deliver efficient, reliable services.

Hypothesis 5 (H5), which states that security has a positive and significant effect on customer satisfaction, is accepted. Strong security measures protect customer data and transactions, reducing concerns about fraud and unauthorized access, which enhances the user experience. When customers feel their personal and financial information is secure, they are more likely to engage in transactions and return to the platform, thus increasing satisfaction. Research supports this, demonstrating that security plays a crucial role in fostering trust and

improving customer satisfaction (Mofokeng, 2021; Vasic et al., 2019). For cross-border e-commerce, where trust is essential, maintaining robust security ensures confidentiality and builds long-term customer loyalty. Continuous improvement of technological infrastructure is vital to safeguard against cyber threats and enhance overall satisfaction.

Hypothesis 6 (H6), which suggests that product variety significantly and positively influences customer satisfaction in CBEC websites or applications, is accepted. By offering a wide range of products and alternatives for unavailable items, CBEC platforms can significantly improve the customer experience. Platforms should maintain a diverse product selection to ensure consistent availability. Product variety also plays a critical role in logistics services, contributing to customer satisfaction in e-commerce. This finding aligns with previous research by Wilson & Christella (2019) and Norawati et al. (2021) in Indonesia, as well as Mofokeng (2021) in South Africa, which concluded that product variety significantly enhances customer satisfaction.

Hypothesis 7 (H7) is accepted, as the study found that price value has the greatest impact on customer satisfaction in cross-border e-commerce. This suggests that higher price value leads to higher customer satisfaction. Competitive pricing is crucial for attracting and retaining customers, especially in online shopping, where consumers prioritize value over physical store visits. Lower prices and better perceived value lead to higher satisfaction, as consumers expect e-commerce platforms to offer competitive pricing compared to traditional retail. Offering lower prices creates a competitive advantage, encouraging repeat purchases and positive word-of-mouth. Therefore, CBEC platforms should adopt competitive pricing strategies to enhance customer satisfaction. This is supported by research in Indonesia, Oman, and other developing countries by Wilis & Nurwulandari (2020), Sanyala & Hisamb (2019), and Rao et al. (2021), which demonstrated that price positively influences customer satisfaction.

Hypothesis 8 (H8) is accepted, indicating that delivery has a positive and significant effect on customer satisfaction in CBEC websites or applications. Timely, accurate, and efficient delivery services are critical for ensuring a positive shopping experience, which directly impacts satisfaction, builds trust, and encourages repeat purchases. This finding supports studies by Wilis & Nurwulandari (2020) and Vasic et al. (2020), which showed that delivery influences and improves customer satisfaction in e-commerce platforms in Indonesia and Serbia, respectively. CBEC providers must ensure products are delivered in optimal condition and within the promised timeframe. Partnering with courier services can offer flexibility, allowing customers to choose preferred delivery options. Providing diverse shipping choices, timely delivery updates, and clear communication regarding delivery times can further enhance customer satisfaction.

Hypothesis 9 (H9) is rejected, suggesting that customer service may not significantly affect customer satisfaction levels. Digital platform advancements have shifted customer expectations towards seamless interactions, where efficiency and responsiveness are key, sometimes overshadowing traditional customer service metrics. This finding aligns with Rita et al. (2019), which found that customer service had no significant impact on satisfaction in Indonesian online retail. Similarly, Kostrzewska & Wrukowska (2019) reported that time constraints and cost-cutting measures in customer service limited interactions, leading to dissatisfaction. Poor service quality, unmet promises, slow responses, and unresolved issues can contribute to dissatisfaction in CBEC. To address this, responses should be available 24/7, and Customer Relationship Management (CRM) systems should enable access through multiple channels like phone and email.

Finally, Hypothesis 10 (H10), which posits that personalization has a positive and significant influence on customer satisfaction in CBEC websites or applications, is rejected. While better personalization may improve customer satisfaction, its impact was not strong enough in this study. Over-personalization can overwhelm customers with irrelevant or intrusive recommendations, leading to dissatisfaction. Poorly executed personalization strategies can result in inaccurate recommendations or overly aggressive marketing tactics, reducing their positive impact. This is consistent with studies by Jaiswal & Singh (2020) in India and

Tzavlopoulos et al. (2019) in Greece, which found that personalization had a relatively low impact on customer satisfaction. Therefore, CBEC providers must tailor their strategies to balance personalization with customer preferences, ensuring it enhances rather than detracts from the customer experience.

CONCLUSION

This study examines the impact of various factors on customer satisfaction in cross-border e-commerce, specifically focusing on service quality, information availability, website performance, reliability, security, product variety, price value, delivery, customer service, and personalization. The analysis revealed that only five variables—service quality, security, product variety, price value, and delivery—had a significant positive effect on customer satisfaction. In contrast, other key aspects of e-commerce, such as information availability, website performance, reliability, customer service, and personalization, did not notably influence satisfaction. To further improve the customer experience, it is essential to explore additional external and internal factors, particularly within the context of cross-border e-commerce in Indonesia.

Given these findings, it is critical for companies operating in the cross-border e-commerce sector to maintain high standards not only for the variables that strongly contribute to customer satisfaction but also for those with less direct impact. This includes ensuring that product information is easily accessible, websites function smoothly, services remain consistent, and customer support is readily available. Moreover, companies should prioritize the responsible handling of customer data, safeguarding privacy. Continuous efforts to monitor and enhance customer satisfaction are also crucial for sustaining a positive shopping experience. By prioritizing these factors, companies can increase the likelihood of repeat purchases, fostering greater customer loyalty and overall satisfaction.

This study has several limitations, including an imbalance in the representation of male and female participants and the exclusion of psychological factors. Future research should address these aspects to better understand their influence on customer satisfaction in cross-border e-commerce. Additionally, the study's findings are specific to Indonesia and not sector-focused, limiting their applicability to other markets or industries. Expanding future research to include different markets, industries, and additional variables could offer more comprehensive insights into customer satisfaction.

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