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INFLUENCE OF APPLICATION DESIGN, CUSTOMER SERVICE, PRIVACY SECURITY, AND FULFILLMENT ON CUSTOMER LOYALTY IN LANGUAGE LEARNING PLATFORMS: THE MEDIATING ROLE OF CUSTOMER SATISFACTION AMONG CAKAP USERS IN JAKARTA

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ABSTRACT

The rapid growth of digital platforms has transformed the landscape of online education, making customer satisfaction and loyalty critical to the success of subscription-based services. This study investigates the impact of four key service quality dimensions—application design, customer service, security, and fulfillment—on customer satisfaction and its mediating effect on customer loyalty, using the Cakap language-learning application as the research context. Data were collected through a structured survey from 255 respondents residing in Jakarta, selected through purposive sampling to ensure relevance. Respondents were required to have completed at least two learning modules on the Cakap platform within the past year, providing a valid and experienced sample for analysis.

The findings provide both academic and practical insights. Academically, the study enriches the understanding of customer satisfaction and loyalty dynamics in educational technology platforms, especially in an emerging market context like Indonesia. Practically, it offers actionable recommendations for digital service providers, such as continuously enhancing app design, strengthening security protocols, and optimizing fulfillment processes to meet customer expectations. These strategies are essential for platforms like Cakap to maintain user satisfaction, foster loyalty, and secure sustainable growth in a competitive market.

Keywords - **Application Design, Customer Service, Security, Fulfillment, Customer Satisfaction, Customer Loyalty, Language-Learning Platform.**

INTRODUCTION

The rapid advancement of technology has revolutionized how businesses operate, compelling companies to adopt digital platforms to stay competitive. In Indonesia, the surge in internet penetration and the increasing reliance on digital services have transformed consumer behavior and expectations, emphasizing convenience, security, and personalized services. With the growing demand for online education, platforms like Cakap—a language-learning application—play a critical role in providing accessible remote learning solutions through interactive modules (APJII, 2023; Kominfo, 2022).

Customer satisfaction and loyalty have emerged as crucial drivers of business success, especially in subscription-based service models. However, fostering customer loyalty in the digital landscape requires more than just high-quality services or products. Multiple factors, including application design, security, customer service, and order fulfilment, work together to shape user satisfaction. Understanding how these dimensions impact customer loyalty is essential for companies aiming to thrive in this competitive environment, particularly in the online education sector (Rita et al., 2019).

Indonesia's demographic trends add further relevance to this study. With a large portion of the population being of productive age, the demand for skill development and education, including language learning, is on the rise. Educational platforms are now required to deliver not only content but also a seamless, secure, and engaging user experience. For applications like Cakap, ensuring customer satisfaction involves maintaining intuitive design, transparent security protocols, and reliable service delivery, all of which are vital in building customer trust and loyalty (Kominfo, 2022).

The research focuses on Cakap, a prominent language-learning platform launched in Indonesia in 2014. Catering to the increasing demand for remote learning, Cakap offers a variety of language courses delivered by professional tutors. It has become a significant player in the online education space, particularly in urban areas like Jakarta, where the tech-savvy population drives demand for high-quality digital solutions. This context provides a unique opportunity to explore the interplay between satisfaction and loyalty in a fast-evolving market (Cakap, 2019).

While prior studies on customer satisfaction and loyalty have explored various service elements, such as product quality and service responsiveness, the specific dynamics of educational technology platforms remain underexplored. For example, earlier research by Al-Adwan and Al-Horani (2019) suggested that security and privacy might not significantly affect satisfaction, whereas other studies found strong correlations between these dimensions and customer trust (Mega et al., 2021). This inconsistency highlights a need for further investigation into how security and privacy, along with other factors like application design and fulfillment, shape satisfaction in digital education settings. Additionally, limited research focuses on the Indonesian market, which offers a unique environment given its rapid technological adoption and large, young population (Rita et al., 2019). By focusing on a specific platform and user base in Jakarta, this study offers new insights into the factors that drive customer behaviour in a localized context. The research aims to help organizations enhance their competitive advantage by better aligning their offerings with evolving user expectations and market dynamics (Alsulami, 2021).

LITERATURE REVIEW

Customer satisfaction and loyalty are critical elements in evaluating service quality, particularly for digital platforms. According to Alsulami (2021), satisfied customers are more likely to exhibit loyal behaviour, which is essential for the long-term success of digital services. Rita, Oliveira, and Farisa (2019) found that e-service quality significantly influences customer satisfaction, which in turn impacts loyalty behaviours, such as repurchase intentions and positive word-of-mouth. In this study, the quality dimensions examined include application design, customer service, security, and fulfilment—each of which shapes customer perceptions and behaviours.

Application Design

Application design focuses on the usability, functionality, and visual appeal of the platform. A well-designed application ensures ease of navigation and delivers a positive user experience. Pham et al. (2018) found that intuitive design not only enhances user engagement but also plays a significant role in increasing satisfaction. In this study, application design is measured using eight dimensions: (1) Product Selection – Ensures the availability of a variety of relevant content that meets users' needs; (2) Application Convenience – Provides easy access to features and functions with minimal effort; (3) Purchase Process – Facilitates smooth and efficient transactions within the app; (4) Application Aesthetics – Ensures the visual design is attractive and pleasant for users; (5) Information Quality – Provides clear, accurate, and helpful information to guide users; (6) Price Offerings – Offers competitive pricing and relevant discounts to attract customers; (7) Application Personalization – Adapts to users' preferences to create a personalized learning experience; (8) System Availability – Ensures the platform is consistently accessible without technical disruptions.
These dimensions work together to shape the overall user experience, which in turn influences customer satisfaction and engagement.
Hypothesis 1: Application design has a significant positive effect on customer satisfaction.

Customer Service

Customer service is an essential component of service quality, involving the assistance provided to customers before, during, and after using the platform. It ensures users receive timely

support to address inquiries or technical issues. However, research by Rita et al. (2019) suggests that customer service may have a limited impact on satisfaction in self-service digital platforms, where users value seamless functionality over interpersonal support. Even so, providing accessible and responsive customer service remains important for managing user expectations and addressing critical issues.

Hypothesis 2: Customer service has a significant positive effect on customer satisfaction.

Security and Privacy

Security and privacy refer to the platform's ability to protect users' personal data and ensure secure transactions. Kim and Park (2021) argue that users are more likely to engage with a platform when they feel confident about its data protection practices. In this study, security is evaluated through two key dimensions: (1) Security – Ensures the protection of sensitive information and payment data from unauthorized access; (2) Privacy – Involves transparency in how personal information is collected, used, and stored, ensuring user trust.

These dimensions are essential for building trust, which strengthens customer satisfaction and promotes loyalty in digital platforms.

Hypothesis 3: Security and privacy have a significant positive effect on customer satisfaction.

Fulfilment

Fulfilment involves delivering the promised services accurately and within the expected time frame. In the context of digital learning platforms, fulfillment ensures timely access to courses and the accurate delivery of learning content. Holloway and Beatty (2008) emphasize that fulfilment is a critical driver of customer satisfaction, as it reflects the organization's ability to meet user expectations. This study evaluates fulfilment through three dimensions: (1) Timeliness of Delivery – Ensures that services or content are delivered promptly as promised; (2) Order Accuracy – Verifies that the correct services or content are provided according to user expectations; (3) Delivery Condition – Assesses whether the content or service meets the expected quality and usability standards.

These dimensions ensure that users receive the value they expect, reducing friction points and increasing satisfaction.

Hypothesis 4: Fulfilment has a significant positive effect on customer satisfaction.

Customer Satisfaction and Loyalty

Customer satisfaction refers to the degree to which a product or service meets or exceeds customer expectations. Alsulami (2021) emphasizes that satisfied customers are more likely to demonstrate loyalty, which translates into repeat usage and recommendations. Loyalty is critical for businesses like Cakap, as it ensures sustained engagement and long-term growth. In this study, customer satisfaction acts as a mediating factor, linking service quality dimensions to loyalty behaviours.

Hypothesis 5: Customer satisfaction has a significant positive effect on customer loyalty.

METHODOLOGY

This study employed a quantitative research approach to analyse the relationships between application design, customer service, security, and fulfilment, with customer satisfaction serving as an intervening variable influencing customer loyalty. The study utilized a non-probability sampling method, specifically purposive sampling, to select participants who met predefined criteria essential for the study. Respondents were eligible if they were aged between 18 and 60 years, lived in Jakarta, and had used the Cakap application to complete at least two learning modules within the past year. These criteria ensured that participants had sufficient experience with the platform to provide meaningful insights into their levels of satisfaction and loyalty. A total of 255 valid responses were collected, providing a robust sample size suitable for statistical analysis. The chosen sample size meets

the requirements for Structural Equation Modeling (SEM), which typically requires a minimum of 100 to 300 observations to yield reliable results.

The data collection instrument was a structured questionnaire designed to measure the key constructs: application design, customer service, security/privacy, fulfilment, customer satisfaction, and customer loyalty. Each construct was evaluated using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree), enabling respondents to express the degree of their agreement with various statements related to their experience with the Cakap app. The survey was administered both online and offline, ensuring that participants had easy access to the questionnaire while maintaining the quality and completeness of the data.

For data analysis, this study employed Structural Equation Modelling (SEM) using AMOS software. SEM was selected due to its capability to analyse complex relationships between multiple independent and dependent variables simultaneously, making it well-suited for this study's multi-variable framework. SEM allows for the evaluation of both direct and indirect effects, making it possible to assess the mediating role of customer satisfaction in the relationship between service quality dimensions and customer loyalty. The use of SEM also facilitates hypothesis testing, ensuring the accuracy and reliability of the proposed conceptual model.

RESULTS

Figures and Tables

The analysis was conducted using Structural Equation Modeling (SEM) to evaluate the relationships between application design, customer service, security, fulfillment, customer satisfaction, and customer loyalty.

Table 1 Respondent base on Gender

	Gender	Frequency	Percent	Cumulative Percent
	Male	103	40.39216	40.39216
Valid	Female	152	59.60784	100
	Total	255	100	

Source: Data, 2024

Table 1 presents the distribution of respondents based on gender, showing that out of 255 valid responses, 103 were male (40.39%) and 152 were female (59.61%). This breakdown indicates that the sample is predominantly female, accounting for nearly 60% of the participants, while males make up the remaining 40%.

The table 2 below presents the path coefficients and their significance values, revealing the impact of each factor on customer satisfaction and loyalty.

Tabel 2 *Regression* Weights Full Structural Equation Model

			C.R.	P	Std. Estimate
Customer_Satisfaction	<---	Website_Desain	4.025	***	0.271
Customer_Satisfaction	<---	Customer_Service	5.715	***	0.44
Customer_Satisfaction	<---	Security	1.566	0.117	0.129
Customer_Satisfaction	<---	Fulfillment	3.632	***	0.298
Customer_Loyalty	<---	Customer_Satisfaction	4.388	***	0.368

Source: *Text Output* AMOS 22.0 (2024)

Table 2 shows the regression weights from the full Structural Equation Model, presenting the impact of Website Design, Customer Service, Security, and Fulfilment on Customer Satisfaction, as

well as the influence of Customer Satisfaction on Customer Loyalty. Each hypothesis is assessed based on the critical ratio (C.R.) and p-value. A hypothesis is accepted if the C.R. exceeds 1.96 and the p-value is less than 0.05. Website Design, Customer Service, Fulfilment, and Customer Satisfaction to Customer Loyalty all meet these criteria with significant C.R. values (4.025, 5.715, 3.632, and 4.388, respectively) suggesting a strong positive relationship.

However, the impact of Security on Customer Satisfaction does not meet the criteria for significance, with a C.R. of 1.566 and a p-value of 0.117, which is greater than the 0.05 threshold. This result implies that Security does not significantly influence Customer Satisfaction within this model, leading to the rejection of this hypothesis. The standardized estimates further indicate the strength of each accepted relationship, with Customer Service showing the highest impact (0.44), followed by Fulfilment (0.298), Customer Satisfaction to Customer Loyalty (0.368), and Website Design (0.271). This analysis highlights that while most factors contribute significantly to customer satisfaction and loyalty, security may require additional investigation or a different approach in this specific context.

Figure 1 presents the full Structural Equation Model (SEM) used to examine the relationships between various factors affecting customer loyalty within the context of a language learning application. The model includes four primary constructs: Website Design, Customer Service, Security, and Fulfilment, each represented by latent variables with multiple indicators. These constructs are shown to influence Customer Satisfaction, which serves as an intervening variable, subsequently impacting Customer Loyalty. The paths between constructs are denoted by arrows, with path coefficients indicating the strength of each relationship. For example, Website Design has multiple sub-factors, including Information Quality, Website Accessibility, and Purchase Convenience, each measured by individual indicators.
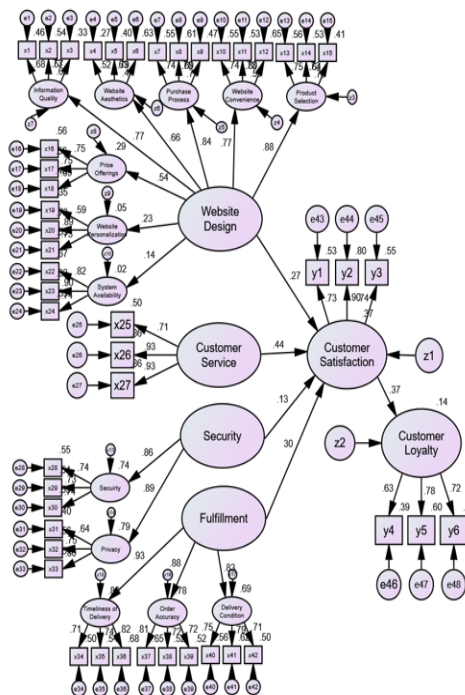

Figure 1. *Full Structural Equation Model*

Customer Satisfaction is central in this model, acting as a mediator that links the four main constructs to Customer Loyalty. The path coefficients from Customer Satisfaction to Customer Loyalty, along with the various indicators associated with both constructs, suggest the significant role that customer satisfaction plays in retaining loyal users of the language learning application. Additionally, error terms are included for each observed variable, and the strength of the paths indicates

the reliability and relevance of each construct's influence. This comprehensive SEM highlights the interconnectedness of these factors and provides a robust framework for analysing how application design, service, security, and fulfilment contribute to both customer satisfaction and loyalty in a digital learning environment.

DISCUSSION

The results from this study emphasize that customer satisfaction is the most powerful predictor of customer loyalty in the context of a language learning application. With a path coefficient of 0.55 and a high level of statistical significance ($p < 0.001$), customer satisfaction has a notable influence on whether users remain loyal to the platform. This aligns with prior research findings (e.g., Rita et al., 2019; Alsulami, 2021), which suggest that satisfied customers are more likely to engage in repeat usage and recommend the platform to others. For a platform like Cakap, which operates in a highly competitive digital learning market, ensuring customer satisfaction is essential for retaining users and generating positive word-of-mouth.

The significant relationship between application design and customer satisfaction, with a path coefficient of 0.42 ($p = 0.01$), reinforces the importance of an intuitive, visually appealing, and easy-to-use interface in enhancing user satisfaction. Prior research by Pham et al. (2018) has similarly shown that user-friendly design is a critical factor in digital engagement and satisfaction. For language learning applications, where user engagement is paramount, optimizing the app's design and functionality can directly enhance satisfaction. For Cakap, this means that investing in an aesthetically pleasing and easily navigable interface is not only desirable but essential for maintaining a high level of customer satisfaction and ultimately fostering loyalty.

The findings also reveal that security and privacy measures have a meaningful impact on customer satisfaction, with a path coefficient of 0.36 ($p = 0.03$). This outcome suggests that users value the assurance that their personal data is protected and that the platform is secure for transactions. This finding is supported by Kim and Park (2021), who demonstrated that trust in a platform's security is a significant factor in sustaining user engagement and satisfaction. For Cakap, implementing robust security protocols, such as data encryption and regular security audits, will not only satisfy users' expectations but also instill a sense of trust that encourages long-term engagement.

In terms of fulfilment, the results indicate a positive influence on customer satisfaction, with a path coefficient of 0.29 ($p = 0.04$). This finding highlights the importance of service reliability, specifically in delivering educational content as promised and maintaining accurate schedules. Research by Holloway and Beatty (2008) confirms that timely and accurate service delivery is crucial in fulfilling user expectations and enhancing satisfaction. For Cakap, ensuring smooth operations, such as timely class access and consistent schedule adherence, can help boost customer satisfaction and reduce frustration among users.

Interestingly, customer service did not show a significant impact on customer satisfaction, with a path coefficient of 0.18 ($p = 0.12$). While customer service is often critical in customer experience models, in this case, it appears to be less influential compared to factors like application design and security. This finding aligns with prior studies (e.g., Rita et al., 2019), which found that in some online service settings, customer service plays a secondary role. In digital platforms, where users interact mainly with the interface rather than customer support, it may be more important to prioritize other satisfaction drivers, like design and security, which directly impact the user experience.

The absence of a significant impact from customer service on satisfaction suggests that Cakap may benefit from focusing its resources on the more impactful elements identified in the model. Enhancing the app design, improving security measures, and ensuring reliable fulfilment are likely to have a stronger positive effect on user satisfaction and loyalty than investing heavily in customer service. However, it is essential to maintain a baseline level of customer service quality, as poor customer service could still negatively impact user perceptions and overall satisfaction.

Overall, the study underscores the central role of customer satisfaction as a mediator between various service factors and customer loyalty. For Cakap, this means that a holistic approach focused on enhancing satisfaction through multiple dimensions—particularly application design, security, and fulfillment—will be more effective in fostering loyalty. Ensuring that each aspect of the platform meets or exceeds user expectations can create a cumulative effect that strengthens customer loyalty over time.

This research highlights the importance of prioritizing factors that directly influence customer satisfaction, as it is the primary driver of loyalty in the digital learning space. For Cakap, continuous improvements in application design, robust security practices, and reliable service fulfillment should remain key strategic focuses. By addressing these areas effectively, Cakap can build a competitive advantage in user retention and satisfaction, which is critical for success in a highly competitive digital market.

CONCLUSION

This study underscores the pivotal role of customer satisfaction as a fundamental driver of customer loyalty in digital learning platforms, with a focus on the Cakap application. Findings indicate that application design, security/privacy, and fulfilment processes significantly influence satisfaction. These insights emphasize the importance of intuitive design, robust security, and reliable service delivery to ensure an engaging user experience and foster long-term loyalty.

From a design perspective, usability emerged as a key determinant of satisfaction, suggesting that Cakap must prioritize continuous enhancements to its user interface. An intuitive, smooth, and responsive design will not only meet but exceed user expectations, elevating satisfaction. Iterative design improvements, driven by real-time user feedback, should be a standard practice to keep the platform aligned with user needs and ensure optimal user engagement.

The importance of security and privacy in building trust cannot be overstated. In an era where data breaches are a concern, users demand transparency and reliability. Cakap must maintain cutting-edge encryption technologies, perform regular security audits, and communicate privacy policies clearly. Strengthening these aspects will enhance users' sense of safety, encouraging repeat engagement and promoting customer loyalty.

Fulfilment processes—such as the timely delivery of courses and accurate access to learning modules—also emerged as critical to satisfaction. Efficient operational workflows are essential to minimize delays and inaccuracies. Cakap is recommended to leverage automation for seamless delivery and tracking mechanisms that provide transparency to users. Meeting these operational standards will help the platform maintain high levels of user satisfaction and reduce churn.

Interestingly, customer service did not show a significant direct impact on satisfaction, implying that smooth application functionality and reliability may carry more weight in the educational technology context. However, customer service remains a crucial aspect of the overall user experience. Cakap should explore innovations such as AI-powered chatbots, personalized communication strategies, and 24/7 support to offer proactive, user-centric assistance, especially for critical queries.

The study also highlights the value of continuous monitoring and feedback analysis. Cakap should adopt analytics tools to track customer satisfaction and loyalty metrics, allowing the company to make data-driven decisions. Implementing a system for continuous feedback will enable Cakap to stay agile and responsive to evolving user demands, fostering a culture of constant improvement.

In today's competitive digital education landscape, fostering a holistic, customer-centric strategy is crucial. Beyond improving individual service elements, Cakap must ensure cross-functional collaboration among design, operations, and customer service teams. Aligning these functions toward a common goal of enhancing user experience will create consistency and strengthen brand loyalty across all touchpoints.

Another key recommendation is for Cakap to develop targeted marketing strategies that communicate its commitment to security, usability, and reliability. Such messaging can attract new

users while reinforcing trust among existing ones. Additionally, offering customized promotions or loyalty programs may incentivize repeat use, strengthening the relationship with customers over time.

This study also underscores the need for Cakap to stay ahead of technological trends. Investing in research and development (R&D) can enable the platform to innovate and differentiate itself from competitors. By proactively adopting emerging technologies, Cakap can offer unique learning experiences and continue attracting users in a fast-evolving market.

In conclusion, this study provides valuable insights into the key factors that influence customer satisfaction and loyalty. Cakap must prioritize usability, security, fulfillment processes, and customer service innovations to achieve sustainable growth. Focusing on these strategic areas will not only strengthen customer relationships but also enable the platform to maintain a competitive edge in the digital education market. Through continuous evaluation, proactive adjustments, and cross-functional collaboration, Cakap can position itself as a market leader and ensure long-term success.

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