Journal of Management, Economic, and Financial

The Effect of E-Service Quality and Ease of Use on Customer Satisfaction of Digital Customer Service Machine Users at PT Bank Central Asia, Tbk KCP A. Rivai

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Abstract This study was conducted with the aim of determining the influence of *e-service quality* and ease of use on customer satisfaction of digital customer service machine users at PT Bank Central Asia, Tbk KCP A. Rivai. Using a quantitative method, the population in this study consisted of all customers who use digital customer service machines at PT Bank Central Asia, Tbk KCP A Rivai, totaling 4,703. The sample used in this study was 151 respondents, selected using the Slovin formula. The results of multiple linear regression analysis show that *e-service quality* and ease of use have a positive and significant effect on customer satisfaction. *E-Service Quality* at PT Bank Central Asia, Tbk is expected to maintain digital *cs* services from the current contact side because it can provide satisfaction to Bank BCA customers. However, the BCA indicator for providing several options to contact the call center (Halo BCA) (telephone, WhatsApp, email) shows a value below average. Ease of use is expected to allow users to check the digital *cs* machine before starting the service. In addition, regular maintenance is necessary to avoid damage when the digital *cs* machine is used.

Keywords: E-service Quality, Ease of Use, Customer satisfaction

Introduction

Customer satisfaction itself is a fundamental element for the sustainability of a company, including banking institutions (Pakurár et al., 2019). Customer satisfaction is the feeling of pleasure or disappointment experienced by customers after comparing the actual performance of a product or service with their expectations (Kotler & Keller, 2018). This satisfaction not only affects customer loyalty but also encourages recommendations to new potential customers, making customer satisfaction a strategic priority for the banking industry.

Bank Central Asia (BCA) is one of the largest private banking institutions in Indonesia with a long history in the banking world. BCA was founded on February 21, 1957, by Soedono Salim, better known as Liem Sioe Liong, with the initial name NV Bank Central Asia. At the beginning of its establishment, BCA was located in Asemka, Jakarta. Before becoming a banking institution, this company was a textile factory called NV Perseroan Dagang dan Industrie Semarang Knitting Factory, established on August 10, 1955. A significant change occurred on October 12, 1956, when the company changed to NV Bank Asia and subsequently changed its name to NV Bank Centraal Asia on February 21, 1957, which is now commemorated as BCA's anniversary (www.bca.co.id, 2025).

Along with the development of time, PT Bank Central Asia (BCA) has undergone various transformations, including changes in ownership and the development of banking services. In 1974, the company's name was simplified to PT Bank Central Asia. Currently, BCA is under the ownership of the Djarum Group, one of the conglomerates in Indonesia. From the past until now, BCA has continued to innovate to adapt its services to increasingly complex customer needs. This continuous transformation makes BCA one of the leading banks in Indonesia in providing comprehensive banking services.

The implementation of technology by BCA plays a significant role in providing convenience in banking transactions. This is evidenced by a consistent increase in the number of customers accounts every year (www.bca.co.id, 2025). By adopting a technology-based approach, BCA has succeeded in maintaining customer trust and retaining its position as the largest transactional bank in Indonesia. One of these success indicators can be seen in the data on the growth of the number of accounts and ATM cards available, as listed in the following table:

Table 1. Number of Accounts and Number of ATM Cards at BCA from Year 2020-2024

Year	Number of Accounts	Number of ATM Cards
2020	24.49 million	22.53 million
2021	28.50 million	24.58 million
2022	34.68 million	30.55 million
2023	38.26 million	33.82 million
2024	41.32 million	36.40 million

Source: (www.bca.co.id, 2025)

The CS Digital machine at PT Bank Central Asia (BCA) enables customers to perform various card-related transactions without directly interacting with customer service officers. These transactions include printing new ATM cards (for the first time), replacing lost or damaged cards, migrating to chip cards, changing card types, resetting forgotten PINs, and printing digital cards in physical form. Additionally, the machine supports registration for *e-Banking* services such as BCA mobile, Klik BCA Individual, and SMS BCA. Designed with an attractive, *user-friendly* interface, adequate transaction speed, and a high-speed internet network, the CS Digital machine facilitates easier customer access to banking needs, especially non-cash services.

In response to the digitalization era, BCA has innovated by developing more efficient branch models featuring technology and digital machines for customers' independent use. This approach improves operational efficiency while aligning with customers' expectations for ease and speed, supporting both customer growth and loyalty to BCA as a leading Indonesian bank. The CS Digital machine, launched in April 2019, is now deployed in nearly 1,200 locations nationwide, offering practical 24/7 access to avoid long queues and limited branch service hours.

Unlike traditional ATMs focused mainly on cash transactions and using VSAT or telephone line networks, the CS Digital machine operates on modern internet networks, enabling more complex and responsive services. Consequently, evaluation of *e-service quality* is essential to ensure optimal user experience. *E-service quality* refers broadly to a digital platform's ability to effectively and efficiently provide transactional and support services, incorporating factors such as efficiency, 285ulfilment, system availability, privacy, responsiveness, and communication (Chase, 2007). While digital technology enhances service quality and customer experience, it also poses challenges regarding system reliability and data security. To guarantee high *e-service quality*, BCA incorporates the assessment of digital machines within its broader Banking Service Quality (BSQ) framework.

Banking Service Quality (BSQ) refers to the level of service excellence provided by a bank to its customers, covering various aspects such as reliability, responsiveness, and empathy (Parasuraman, Zeithaml, & Berry, 1988). The BSQ assessment at PT Bank Central Asia, Tbk is influenced by the quality of services, including digital services. One of the key aspects of BCA's digital services is the Digital CS Machine, which is one of the most widely used automated machines by customers. Therefore, the quality of digital services (*e-service quality*) of the Digital CS Machine is an important factor in the evaluation of BSQ. In recent years, the value of BSQ has fluctuated, which is characterized by increase, stagnation, and decrease. This inconsistent change is a concern for BCA's management because it can have an impact on customer satisfaction and loyalty.

Nguyen et al. (2023) conducted a study in Vietnam on the service quality of banking kiosks, finding that kiosk service quality has a significant positive correlation with perceived value and customer satisfaction, with convenience being the most critical dimension in predicting perceived service quality. However, this research primarily focused on technology readiness as a moderating variable and did not explore customer satisfaction in the context of banking digitalization in Indonesia (researchgate.net). Meanwhile, Yusuf & Bala (2021) examined the impact of e-banking service quality—such as reliability and security—on end-user satisfaction in Nigeria, but their study was limited to Internet banking services and did not consider hybrid physical-digital services like BCA's CS Digital machines (arxiv.org). This research fills the gap by focusing on evaluating the *e-service quality* of BCA's CS Digital machines, which combine self-service interactive terminal (SIT) features with internet connectivity, and by examining factors such as convenience, system reliability, privacy/security, and perceived value in relation to customer satisfaction and loyalty in the Indonesian banking context.

The purpose of this study is to comprehensively identify *e-service quality* elements that significantly influence customer satisfaction and loyalty when using BCA's CS Digital machines. The benefits include providing practical recommendations for banks to optimize the design and management of digital kiosks to be more responsive to customer expectations, as well as offering academic contributions by developing an integrated *e-service quality* model for hybrid banking services in Indonesia and other emerging markets.

Methods

The study used a quantitative research method. The population consisted of all customers who used Digital customer service machines at PT Bank Central Asia, Tbk KCP A Rivai. Based on BCA's internal data, in 2024, the number of customers at this branch was 4,703. Using the Slovin formula, the sample size was determined to be 151 customers who transacted using the Digital CS machine at PT Bank Central Asia, Tbk KCP A Rivai. This sampling aimed to facilitate data processing and improve the accuracy of test results. The sample was selected randomly from customers during working days, Monday to Friday, between 08.00 and 15.00 WIB, ensuring equal opportunity for all customers to be chosen regardless of population strata.

Data were collected using a structured questionnaire designed to measure variables such as *e-service quality*, customer satisfaction, and customer loyalty. The questionnaire employed a Likert scale ranging from strongly disagree (1) to strongly agree (5) to quantify respondents' perceptions. Additionally, observations and informal interviews with some customers complemented the quantitative data with contextual insights. For data analysis, descriptive statistics summarized demographic profiles and response distributions. Inferential statistical tests, including validity and reliability tests, correlation analysis, and multiple linear regression, were conducted using SPSS software to examine relationships and effects between variables. This approach ensured the research findings were statistically valid and reliable, providing comprehensive insights into the impact of *e-service quality* on customer satisfaction and loyalty.

Results and Discussion

1) The e-service quality variable (X1) has a beta value of 0.483 with a significant value of 0.000 which is smaller than 0.05. This shows that the e-service quality

(X1) variable has a positive and significant influence on the satisfaction of users of digital customer service machines at PT Bank Central Asia, Tbk KCP A. Rivai. This proves that the first hypothesis on the e-service quality (X1) variable has a positive and significant effect is acceptable.

2) The ease of use (X2) variable has a beta value of 0.341 with a significant value of 0.000 which is less than 0.05. This shows that the ease of use (X2) variable has a positive and significant influence on the satisfaction of users of digital customer service machines at PT Bank Central Asia, Tbk KCP A. Rivai. This proves that the second hypothesis on the ease of use (X2) variable has a positive and significant effect is acceptable.

The Effect of E-Service Quality on Customer Satisfaction Using Digital Customer Service Machines at PT Bank Central Asia, Tbk KCP A. Rivai

Research results of Ighomereho & Afolabi (2023); Ginting (2022); Yuan, Jusoh, Yusuf, & Ghani (2020); Singh (2019); Hammoud, Bizri, & Baba (2018); Nyoni, Chiguvi, & Nhlane (2017) showed the results that e-service quality has a positive and significant effect on consumer satisfaction. The results of research from Ferdani, Wahab, Shihab, & Widiyanti (2020) also show the same results, namely that service quality has a positive and significant influence on consumer satisfaction. Meanwhile, different results are shown in research from Candra & Juliani (2018) showing that e-service quality has a not significant effect on customer satisfaction.

Respondents' responses to the call center service indicator (Halo BCA) can always be contacted showing the lowest value. This shows that at certain hours, especially during the night hours, BCA's halo call center service is not very quick to contact when compared to during operational hours (morning-evening).

Respondents' responses to CS Digital machine indicators are always available at the branch to be used for card replacement transactions, card printing, etc. showing the highest score. Based on direct interviews with several respondents, the availability of this digital CS machine is already available in almost all BCA bank branches, especially at the A. Rivai branch, where the service using this digital CS machine is very efficient without the need to wait in line. The customer also said that good service was also provided by the officer if he had difficulties in using or operating the tool. Customers receive well about the new services offered by PT Bank Central Asia, Tbk in providing good service for all its customers.

The Effect of Ease of Use on Customer Satisfaction Using Digital Customer Service Machines at PT Bank Central Asia, Tbk KCP A. Rivai

Research results (Freeman, 2022); (Tu, 2022); (Mandasari, 2022); (Wilson, 2021); (Ramadhanti, 2021); (Muflihhadi & Rubiyanti, 2021); (Putri, 2021); (Zainuddin & Sandana, 2021); (Oct. 2021); (Oktarini, 2021); (Amorosoa, 2020); (Ohk, 2020) shows that ease of use has a positive and significant effect on customer satisfaction. The results of the study from (Purnamasari, 2022) show that ease of use has a negative and significant effect on customer satisfaction. Different results are shown in the study from (Ramadhanti, 2021) showing that ease of use has a positive and insignificant effect on customer satisfaction.

Respondents' responses to Bank BCA's digital customer service engine indicators have never shown the lowest value. This shows that some of the respondents met by the author in the field said that he had felt an error when the digital cs machine was used. But the response from employees to handle customer complaints and quickly to make repairs so that they can be used again in good condition and ready to use.

Respondents' responses to service process indicators using Bank BCA's digital customer service engine were faster to show the highest score. This shows that with the launch of this digital cs machine service, there are many positive responses given by customers regarding the services provided by PT Bank Central Asia, Tbk, especially in the process speed, where customers no longer need to queue up to the customer service department and can use this digital cs machine to be able to meet customer needs and complaints.

Conclusion

Based on the research findings, it can be concluded that e-service quality and ease of use both have a positive and significant effect on customer satisfaction among users of digital customer service machines at PT Bank Central Asia, Tbk KCP A. Rivai. This result answers the research objective, which was to examine the influence of e-service quality and ease of use on customer satisfaction, confirming that well-designed digital services and user-friendly interfaces are key drivers of customer satisfaction. For future contributions, this research can serve as a foundation for developing more advanced digital service models that prioritize personalization, system reliability, and data security. Further studies can explore additional factors such as trust, perceived value, and customer experience to build a comprehensive framework for improving digital service quality and fostering customer loyalty in the banking industry.

References

Amorosoa, D. L. (2020). Exploring The Personal Innovativeness Construct: The Roles of Ease of Use, Satisfaction and Attitudes. Asia Pacific Journal of Information Systems, Vol. 25, 662–685.

Candra, S., & Juliani, M. (2018). Impact of E-Service Quality and Customer Value on Customer Satisfaction in Local Brand. Binus Business Review, Vol. 9 (2)(E-ISSN: 2476-9053).

Chase, R. B., Aquilano, N. J., & Jacobs, R. F. (2007). Operations Management For Competitive Advantage (11th ed.). Mc. GrowHill/Irwin.

Davis, F. . (1989). Perceived Usefulness, Perceived ease of use, and Acceptance of

Information System Technology. MIS Quarterly, Vol. 13, 319–339.

Freeman, L. A. (2022). The Power and Benefits of Concept Mapping: Measuring Use, Usefulness, Ease of Use and Satisfaction. International Journal of Science Education, Vol. 26.

Ginting, M. A. V. (2022). Effect of E-Service Quality on E-Satisfaction in using Mobile Banking Through User Experience at Bank Sumut. International Conference on Social and Political Development, Vol. 4.

Hammoud, J., Bizri, R. M., & Baba, I. El. (2018). The Impact of E-Banking Service Quality on Customer Satisfaction: Evidence From the Lebanese Banking Sector. Sage Open - Research Paper International Journal.

Ighomereho, O. S., & Afolabi, T. S. (2023). Impact of E-service Quality on Customer Satisfaction: A Study of Internet Banking for General and Maritime Services in Nigeria. Journal of Financial Services Marketing, Vol. 28, 488–501.

Kotler, P., & Keller, K. L. (2018). Manajemen Pemasaran (12th ed.). PT Indeks.

Mandasari, I. A. C. S. (2022). Pengaruh Perceived Usefulness, Perceived Ease of Use dan Kualitas Layanan Terhadap Kepuasan Untuk Membangun Loyalitas. E-Jurnal Ekonomi Dan Bisnis Universitas Udayana, Vol. 6 (1), 3637–3664.

Muflihhadi, I., & Rubiyanti, R. N. (2021). Pengaruh Perceived Usefulness, Perceived Ease of Use dan Trust Terhadap Kepuasan Konsumen (Studi Pada Gojek Bandung). EProceedings of Management, Vol. 3 (2).

Nyoni, S., Chiguvi, D., & Nhlane, P. (2017). The Impact of Electronic Service Quality on Customer Satisfaction in the Votswana Commercial Banking Sector. International Journal of Economics, Commerce and Management.

Ohk, K. (2020). The Influence of Perceived Usefulness, Perceived Ease of Use, Interactivity, and Ease of Navigation on Satisfaction in Mobile Application. Advanced Science and Technology Letters, Vol. 2 (4), 88–92.

Oktarini, M. A. S. (2021). Pengaruh Perceived Ease of Use dan Perceived Enjoyment Terhadap Customer Satisfaction dan Repurchase Intention. Jurnal Inovasi Bisnis Dan Manajemen Indonesia, Vol. 1 (2).

Pakurár, M., Haddad, H., Nagy, J., Popp, J., & Oláh, J. (2019). The service quality dimensions that affect customer satisfaction in the Jordanian banking sector. *Sustainability*, *11*(4), 1113.

Purnamasari, R. D. A. (2022). Pengaruh Perceived Ease of Use, Perceived Usefulness, Perceived Risk dan Brand Image Terhadap Kepasan Konsumen Menggunakan Metode Pembayaran Shopee Paylater. Jurnal Manajemen.

Putri, E. M. (2021). Pengaruh Kualitas Produk, Perceived Ease of Use dan Perceived Risk Terhadap Kepuasan Pelanggan E-Wallet OVO (Studi Kasus di PT. Global Vision Impex). Jurnal Ekonomi Indonesia.

Ramadhana, D. P. (2019). Pengaruh E-Service Quality dan E-Trust Terhadap E-Loyalty Dengan E-Satisfaction Sebagai Variabel Intervening (Studi Pada Pengguna E-Commerce Shopee). Jurnal Universitas Negeri Yogyakarta.

Ramadhanti, V. S. (2021). Pengaruh Perceived Usefulness dan Perceived Ease of Use Terhadap Kepuasan Pengguna E-Health. Jurnal Ekonomi Dan Bisnis.

Singh, S. (2019). Measuring E-Service Quality and Customer Satisfaction With Internet Banking in India. Theoretical Economics Letters, Vol. 9(ISSN Online: 2162-2086), 308–326.

Tu, C.-C. (2022). Perceived Ease of Use, Trust, and Satisfaction as Determinants of Loyalty in e-Auction Marketplace. Journal of Computers, Vol. 7 (3).

Wilson, N. (2021). The Role of Perceived Usefulness and Perceived Ease of Use Toward Satisfaction and Trust Which Influence Computer Consumers' Loyalty in China. International Journal of Business, Vol. 2 (3), 262–294.

Yuan, L. S., Jusoh, M. S., Yusuf, D. H. M., & Ghani, M. R. A. (2020). The Relationship between Product Quality, E-Service Quality and Brand Image on Customer Satisfaction: Preliminary Investigation in Perlis. International Journal of Business and Management, Vol. 4 (5)(e-ISSN: 2590-3721), 43–54.

Zainuddin, & Sandana, P. (2021). Analisis Pengaruh Perceived Usefulness dan Perceived Ease of Use Terhadap Tingkat Kepuasan Nasabah Dalam Menggunakan ATM (Studi Kasus Pada Nasabah Bank Muamalat Cabang Palopo). Jurnal Ekonomi Muamalah, Vol. 4 (1).