International Journal of Business, Law, and Education
E-ISSN : 2747-1349
Publisher: IJBLE Scientific Publications Community Inc.
Volume 5, Number 2, 2024
https://ijble.com/index.php/journal/index

E-Banking Technology: A Comprehensive Study on Customer Satisfaction and Bank Services

Cynthia Sari Dewi[1], Zulkifli[2]
[1,2] Department of Management & Jaya Launch Pad, Universitas Pembangunan Jaya Indonesia
[1] cynthia.saridewi@upj.ac.id, [2] zul.kifli@upj.ac.id

ABSTRACT
This paper explores the dynamic landscape of e-banking technology, emphasizing advancements in hardware, software, and networks to deliver innovative solutions. It highlights moderate e-banking adoption among surveyed individuals, underscoring the crucial role of customer satisfaction in banking services. Despite this, critical gaps are identified, motivating the study to provide a detailed analysis of responses concerning cloud services, bank system security, service quality, and e-learning initiatives. With meticulous data collection from 125 respondents, primarily students from Tangerang actively using e-banking, the research investigates the frequency and patterns of e-banking usage. Through comprehensive descriptive analysis, the study offers insights into customer satisfaction in the e-banking domain and sets the stage for future causal research. Its ultimate goal is to enhance comprehension of the factors influencing customer satisfaction in e-banking.

Keywords: E-Banking Technology; Bank Services; Customer Satisfaction

INTRODUCTION

The rapid advancement of information technology has revolutionized banking practices, enabling customers to seamlessly access their accounts via the internet or mobile devices. This modernization of technology has not only simplified but also diversified banking activities, resulting in an ideal integration between banks and the internet to cater to the diverse needs of customers. E-banking, at the forefront of this technological evolution, seamlessly integrates hardware, software, and network technology to provide innovative solutions. It leverages a plethora of tools, including electronic wallets, electronic money, electronic checks, as well as a wide array of cards such as debit cards, credit cards, ATMs, and Point of Sale (POS) systems (Hidayat, 2021). This integration ensures a smooth and efficient banking experience for customers, irrespective of their location or time constraints. Furthermore, the convenience offered by e-banking extends beyond traditional banking hours, providing customers with unparalleled accessibility and flexibility. The advent of e-banking has significantly transformed the landscape of banking, paving the way for a more interconnected and digitized future. As technology continues to evolve, the possibilities for enhancing e-banking services are virtually limitless, promising even greater convenience and security for customers worldwide.

Despite the widespread availability of e-banking, traditional banking transactions continue to dominate in numerous countries, indicating a lingering preference for conventional methods The development of e-banking systems on a global scale entails considerable financial investments, underscoring the commitment of financial institutions to embrace digital transformation (Susanti et al., 2022). However, despite these investments, there is a prevailing concern among banking institutions regarding reports suggesting that prospective users are not fully capitalizing on the accessibility afforded by e-banking platforms. This discrepancy raises questions about the effectiveness of current marketing strategies employed by

banks in promoting e-banking services. In light of these challenges, it becomes imperative for banks to delve deeper into the factors influencing public engagement with e-banking, integrating these insights into their marketing endeavors (Wahyuningsih & Janah, 2018). Moreover, recognizing the nuanced drivers behind the successful adoption of information technology from the users' standpoint is paramount for fostering widespread acceptance of e-banking solutions. As banks strive to bridge the gap between technological innovation and consumer behavior, comprehensive understanding of these factors will be instrumental in shaping the future landscape of digital banking.

In the realm of banking technology, the emergence of e-banking services has brought about a multitude of opportunities, but it has also introduced challenges, such as the ever-looming threat of cybercrime. With the increasing reliance on digital platforms for banking transactions, the risk of security breaches and cyber-attacks has become a pressing concern for both financial institutions and their customers (Istiqomah, 2019). Cybercrime poses a significant threat to the integrity of banking systems, potentially compromising sensitive financial data and eroding trust in e-banking services. As such, mitigating the risks associated with cybercrime has become an essential aspect of the development and advancement of banking technology (Hendri, 2020). On the other hand, the importance of customer satisfaction remains paramount in driving the evolution of banking technology. Customer satisfaction serves as a guiding principle for central banks and financial institutions as they navigate the complexities of the digital landscape (Saputri, 2018). By understanding and meeting customer expectations, banks can foster loyalty and profitability, ultimately shaping the success of digital banking initiatives. As e-banking continues to evolve and innovate, prioritizing customer satisfaction becomes increasingly crucial in maintaining a competitive edge in the dynamic banking industry. By offering secure, efficient, and user-friendly e-banking solutions, banks can attract and retain customers, driving innovation and meeting the evolving needs of customers in today's ever-changing banking landscape.

This study statistically analyzes the descriptive relationship between cloud services, bank system security, user e-learning, service quality and customer satisfaction levels using e-banking services. In an era marked by escalating competition in the banking sector, financial institutions are strategically directing their efforts towards both attracting and retaining their traditional customer base, particularly in light of the rapidly evolving market dynamics. Customers, when discerning the winners in the market, meticulously evaluate banking services across various parameters, including technological advancements, operational speed, and the technical proficiency exhibited by the service providers. As banks endeavor to stand out in the competitive landscape, they recognize the pivotal role played by these factors in shaping customer perceptions and preferences towards e-banking services. Therefore, understanding and effectively addressing the intricate interplay between cloud services, bank system security, user education, service quality, and customer satisfaction is imperative for banks seeking to thrive in the dynamic and fiercely competitive e-banking market.

Cloud Services

One of the most promising computing paradigms in the industry is cloud computing, which enables users to access computer services without having to possess computing infrastructures (Buyya et al., 2009). As a result, the industry is

seeing an increase in the quantity of commercial Cloud services offered by a growing number of suppliers. Evaluation of Cloud services would be important and helpful for both service clients (e.g., cost-benefit analysis) and providers (e.g., direction of improvement), since diverse and competitive Cloud services may be supplied with varied terminology, definitions, and aims (Prodan & Ostermann, 2009). Cloud databases are an innovative solution that aims to furnish customers with secure and transparent access to a plethora of platforms and heterogeneous databases. This cutting-edge technology not only enhances accessibility but also ensures the integrity and confidentiality of data stored within the cloud environment. In evaluating cloud services, several key variables come into play, among which are resource virtualization, user-friendliness, and cost flexibility, as highlighted by (Li et al., 2021). This variable play a pivotal role in determining the effectiveness and efficiency of cloud database solutions in meeting the diverse needs and preferences of users. As the demand for cloud-based solutions continues to surge, understanding and optimizing these variables are imperative for delivering seamless and satisfactory cloud computing experiences to customers.

Banking System Security

Banking security is a crucial component of financial security, or it can be defined as the degree of financial stability of the nation's banking institutions, allowing for the efficient operation of the banking system and defense against both internal and external destabilizing factors, regardless of the circumstances surrounding it (Ponomarenko et al., 2018). Currently, online banking systems employ models that are built on many security layers. These layers are made up of various parallel solutions and procedures that are intended to secure user data and the banking application by appropriately granting authorization, authentication, and identification (Mridha et al., 2017). Organizations, particularly banks, that utilize dedicated Internet connections are inherently exposed to heightened security risks compared to those employing dial-up modems, as they are susceptible to unauthorized access from external sources on the Internet. Despite advancements in electronic banking systems, users remain vulnerable to security breaches, particularly concerning unauthorized access to their banking accounts. As such, integrating non-repudiability measures becomes imperative, ensuring that both the sender and receiver's identities can be verified by a trusted third party possessing the requisite identity certificates. Non-repudiability serves as a crucial safeguard against fraudulent activities, providing a robust mechanism to validate the authenticity of transactions and hold parties accountable for their actions. By implementing stringent security protocols and leveraging trusted third-party verification mechanisms, organizations can bolster the integrity and reliability of their electronic banking systems, instilling greater confidence and trust among users. The adoption of non-repudiability measures underscores a proactive approach towards mitigating security risks and safeguarding the confidentiality and integrity of sensitive financial information (Fatima, 2011)

E-learning of Users

The progression of information technology represents a pivotal milestone in enabling individuals to engage in cooperative learning activities seamlessly, empowering them to partake effectively and efficiently irrespective of geographical barriers or temporal constraints. Nonetheless, it is crucial to acknowledge that technology, in isolation, cannot entirely facilitate the transmission of knowledge, as human intervention remains indispensable in both the creation and dissemination of

knowledge. E-learning, as a multifaceted domain, encompasses an extensive array of learning methodologies, spans across diverse sectors, and caters to a wide spectrum of participants, thereby serving as a versatile platform for individuals to acquire new skills, knowledge, and competencies, ultimately enhancing their overall performance and proficiency (Li et al., 2021). On the other hand, within the banking sector, there's a parallel shift towards embracing technological advancements to enhance educational practices. Just as in higher education, banks are increasingly adopting e-learning concepts aimed at improving effectiveness and flexibility compared to traditional training methods (Husain & Budiyantara, 2020). Specifically, within banking institutions, the implementation of e-learning initiatives aims to address challenges related to training delivery, especially regarding compliance, product knowledge, and customer service skills. However, similar to the education sector, banks may encounter obstacles such as limited infrastructure, including access to computer systems and training facilities, as well as the need for robust academic service systems tailored to the banking domain (Rivalina, 2017). Additionally, the successful implementation of e-learning in banks requires a strong commitment from bank management, preparedness from trainers, and comprehensive socialization efforts to ensure buy-in and adoption from all stakeholders within the organization.

Service Quality

Service quality encompasses the spectrum between what customers expect and how they perceive the service provided. When the performance surpasses the expected level, the perceived quality exceeds satisfaction, leading to the emergence of customer satisfaction. Numerous studies provide substantial evidence of the direct link between customer satisfaction and service quality. The quality of services offered by the system plays a pivotal role in ensuring the successful implementation and gratification of customers with e-banking services (Li et al., 2021). Higher speed and superior delivery quality contribute to elevating the server's overall quality. Moreover, such enhancements are poised to have a favorable influence on customer satisfaction levels, fostering stronger relationships and loyalty among users. Therefore, prioritizing service quality is paramount for banks aiming to excel in the competitive e-banking landscape and foster long-term customer satisfaction.

Quality banking management plays a pivotal role in achieving organizational goals with efficiency and effectiveness. Especially in the current era of heightened global competition, organizations are compelled to enhance their performance through continuous quality improvement initiatives. Previous studies have emphasized the importance of fulfilling customer needs as a means to drive quality improvement in banking services (Imran et al., 2018; Jong et al., 2019). By focusing on enhancing service quality, banks can differentiate themselves from competitors, build stronger customer relationships, and ultimately, thrive in the highly dynamic and demanding banking industry. Therefore, a strategic emphasis on quality banking management is indispensable for banks aiming to sustain growth and competitive advantage in today's globalized marketplace.

Customer Satisfaction

Customer satisfaction is predicated on the alignment between consumer needs, desires, and expectations, ensuring their fulfillment regarding a specific product (Yuniarti, 2015). This fundamental criterion underscores the essence of customer satisfaction as a pivotal determinant in consumer behavior. When customers find their needs, desires, and expectations adequately addressed, it instills a sense of loyalty

towards the product, fostering repeat usage and positive word-of-mouth recommendations. Thus, customer satisfaction emerges as the cornerstone of sustainable consumer engagement and brand advocacy. Evaluating customer satisfaction involves a comprehensive analysis of consumers' perceptions and their corresponding satisfaction levels, serving as a barometer for product effectiveness and market resonance (Ginting et al., 2023)

With the advancement of information technology, e-commerce has suddenly expanded its scope and scale over the past decade. Customer satisfaction is an abstract and vague concept. The manifestation of true happiness varies from product to product, person to person, and service to service (Li et al., 2021). However, satisfaction depends on several factors, such as psychological, economic, and physical factors. Nevertheless, satisfaction is considered as a series of negative and affirmative reactions to a set of elements and types of emotional attitudes. Customer satisfaction is a response to the realization and prosperity of consumers. It is an assessment of whether the character of a service or product has provided a level of understanding and pleasant success.

METHOD

This research employs a quantitative approach, specifically utilizing a descriptive method, wherein the acquired findings undergo thorough processing and analysis to derive conclusive insights, with a predominant focus on scrutinizing numerical data. The data collection process involved the distribution of questionnaires to a sample size consisting of 125 students who utilize e-banking. Subsequently, the ensuing examination delves into the demographic and behavioral characteristics of these respondents, culminating in the presentation of their profiles, as delineated in Table 1.

Tabel 1. Respondent Profile

Category	Respondent	Percentage
Domicile		
Jakarta	15	12%
Bogor	4	3%
Tangerang	105	84%
Bekasi	1	1%
Profession		
Student	125	100%
E-Banking User		
Ya	125	100%
Frequency of use per day		
<1	5	4%
1-3	61	49%
4-6	44	35%
>6	15	12%

Source: Data Processed (2024)

According to the data presented in Table 1, it is evident that the largest proportion of respondents, constituting 84% or 105 individuals, are residents of Tangerang. Furthermore, the entire sample, comprising 100% of the respondents, consists of students actively utilizing e-banking facilities. In terms of frequency, the utilization of e-banking services per day predominantly falls within the range of 1 to 3

times, representing 48.8% or 61 participants. This finding underscores the prevalence of moderate e-banking usage among the surveyed individuals.

RESULTS AND DISCUSSION

This section entails a comprehensive descriptive analysis, where the responses of individual participants pertaining to various variables such as cloud services, bank system security, service quality, and e-learning of users will be expounded upon in detail. The elaboration will be based on the thorough collection and analysis of data gathered from a total of 125 respondents. Through this meticulous examination, insights into the perceptions and experiences of the participants regarding the specified variables will be provided. Additionally, this analysis aims to offer a nuanced understanding of the dynamics surrounding these key aspects within the context of the study.

Table 2 Cloud Service Descriptive

Indicator		Frequency					Mean	Median	Mode
		1	2	3	4	5			
Cloud services contribute to increased CS with the advantage of widespread access.	CS1	0	0	12	47	66	4.432	5	5
To develop electronic banking services, cloud security, as the biggest advantage of cloud computing, becomes more important.	CS2	0	0	12	43	70	4.464	5	5
The information processing with high speed affects ebanking growth.	CS3	0	1	11	51	62	4.392	4	5
Cloud-based banking systems increase the productivity and efficiency of banks.	CS4	0	0	11	50	64	4.424	5	5
Quick service recovery with low costs.	CS5	0	0	14	53	58	4.352	5	5

Source: Data Processed (2024)

In order to enhance indicator CS5, considering its comparatively lower mean value in comparison to CS1 - CS4, the bank needs to undertake measures to ensure the scalability of its cloud infrastructure to accommodate user expansion. This includes guaranteeing that services remain accessible swiftly and without disruptions even during periods of increased traffic. Achieving this objective necessitates the strategic selection of dependable cloud providers and the implementation of efficient technologies aimed at bolstering service speed and overall performance. Li et al. (2021) state that cloud-based banking systems not only enhance the productivity and efficiency of banks but also provide customer satisfaction through widespread access, security, and information processing speed. Quick service recovery with low costs is also identified as a significant benefit of cloud services in the banking sector. Additionally, the institution should establish a comprehensive cloud recovery strategy aimed at mitigating the risks associated with data loss and potential downtime occurrences. This strategy should encompass regular data backups and thorough testing of recovery procedures to uphold service reliability. Continuous monitoring of cloud services by the bank is equally essential to promptly identify any emerging issues and implement requisite improvements. Furthermore, leveraging data usage

and performance analysis can yield invaluable insights that can inform targeted measures aimed at enhancing service delivery.

Table 3 Bank System Security Descriptive

Indicator		Frequency					Mean	Median	Mode
		1	2	3	4	5			
There are secure infrastructure platforms in e-banking systems	BS1	0	1	11	57	56	4.344	4	4
Stability in the way services are provided in banking systems creates security.	BS2	0	0	14	50	61	4.376	4	5
The use of electronic and off-bank services is safe.	BS3	0	1	20	46	58	4.288	4	5
Confidentiality of information is protected in electronic banking systems.	BS4	0	1	15	52	57	4.320	4	5
The presence of digital signatures increases the security of electronic banking systems.	BS5	1	1	14	56	53	4.272	4	4

Source: Data Processed (2024)

Bank System Security plays a crucial role in e-banking by safeguarding customer information and privacy from potential hackers. The mean values for indicators BS1 through BS6, as delineated in Table 3, reveal a consensus among respondents regarding the efficacy of bank system security in e-banking. These values, with BS1 at 4.344, BS2 at 4.376, BS3 at 4.288, BS4 at 4.320, and BS5 at 4.272, underscore the satisfaction of users with the level of security provided by e-banking services. The agreement among respondents suggests a high level of confidence in the security measures implemented by banks to uphold the confidentiality of transactions and personal data. This satisfaction serves as a testament to the effectiveness of the security protocols in place, instilling trust and reliability in e-banking platforms. The assurance of robust security measures not only enhances customer trust but also reinforces the attractiveness of e-banking as a secure and convenient financial solution.

To address the relatively lower mean value of indicator BS5 compared to BS1 – BS4, the bank can implement measures to enhance the security of digital signatures. This can be achieved by ensuring that the private keys used in generating digital signatures are securely stored. One effective approach is to utilize robust key storage methods such as employing a hardware security module (HSM) or storing the keys in an encrypted and physically protected environment. Furthermore, it is imperative for the bank to adopt stringent user authentication protocols to bolster security. This entails meticulously verifying user identities before granting access to e-banking platforms. Robust verification methods like two-factor authentication, biometric verification, or other reliable authentication mechanisms should be employed to validate the legitimacy of individuals generating digital signatures. By fortifying the security of digital signatures and implementing rigorous authentication procedures, the bank can enhance the overall security posture of its e-banking services, thereby instilling greater confidence and trust among customers. In line (Mridha et al., 2017), where the implementation of advanced security measures such as two-factor authentication and digital wallet systems, along with continuous transaction monitoring using artificial intelligence and transaction history analysis for fraud detection, can

enhance customer satisfaction in banks by creating a safer and more trustworthy banking environment.

Table 4 E-learning of User Descriptive

Indicator		Frequency					Mean	Median	Mode
		1	2	3	4	5			
Having e-learning on how to use e-banking services increases my satisfaction.	EU1	0	1	20	56	48	4.208	4	4
The temporal and spatial flexibility of education in banking systems is satisfactory.	EU2	0	1	15	57	52	4.280	4	4
The training programs available in e-banking systems help to improve my knowledge and awareness	EU3	0	0	14	61	50	4.288	4	4
A proper training program helps to increase the level of customer orientation.	EU4	0	0	15	51	59	4.352	4	5
The right training program helps the organization achieve its goals.	EU5	0	0	11	49	65	4.432	5	5

Source: Data Processed (2024)

E-Learning of Users embodies the versatility in learning methodologies across various domains and among different individuals. It serves as a conduit for individuals to acquire fresh skills or knowledge, thereby enhancing their overall performance. Upon scrutiny of Table 4, it becomes apparent that the mean values for indicators EU1 through EU5 stand at 4.208, 4.280, 4.288, 4.352, and 4.432 respectively. These values underscore the prevailing consensus among respondents regarding the efficacy of e-learning within e-banking services. Such alignment implies that users express satisfaction with their e-banking experiences, attributing it to the adequate and beneficial e-learning provisions available to them. This alignment underscores the significance of robust e-learning initiatives in bolstering customer satisfaction and facilitating seamless engagement with e-banking platforms.

To bolster indicator EU1, considering its relatively lower mean value compared to EU2 - EU5, the bank needs to implement measures to refine the design and organization of e-learning content. This entails adopting interactive and captivating approaches that integrate a diverse array of multimedia elements, including videos, audios, images, and animations. Additionally, it is imperative for the bank to ensure the responsiveness and user-friendliness of the e-learning platform, featuring intuitive navigation and robust search functionalities to facilitate swift and seamless access to materials. Moreover, the bank should streamline access to technical assistance and support services for users, ensuring the availability of a responsive team to address technical issues or user inquiries promptly. When people who are already familiar with financial technology platforms, the importance of ease of use is no longer considered a primary factor by investors to increase trust in financial products (Dewi & Dominggus, 2024). Lastly, regular evaluations of e-learning effectiveness should be conducted, informed by user feedback and evolving requirements of e-banking service features, to drive continuous improvement and optimization of the system. Banks can improve people's proficiency with e-banking services by offering e-learning training programs. For e-learning systems to guarantee user happiness while maintaining system dependability, its extenders and executers must offer high-quality accessibility, pertinent information, and meet user expectations (Li et al., 2021).

International Journal of Business, Law, and Education
E-ISSN : 2747-1349
Publisher: IJBLE Scientific Publications Community Inc.
Volume 5, Number 2, 2024
https://ijble.com/index.php/journal/index

Table 5 Service Quality Descriptive

Indicator		Frequency					Mean	Median	Mode
		1	2	3	4	5			
The speed of service delivery in e-banking systems is satisfactory.	SQ1	0	2	23	50	50	4.184	4	4&5
Electronic banking systems technology reduces the cost of providing banking services.	SQ2	0	0	24	51	50	4.208	4	4
Electronic banking systems technology increases competition between banks and improves service quality.	SQ3	0	0	16	53	56	4.320	4	5
Electronic banking systems are easy to use, accessible, and user-friendly.	SQ4	0	0	13	42	70	4.456	5	5

Source: Data Processed (2024)

Service Quality serves as a measure of the variance between customer expectations and their perception of the service rendered. When the performance exceeds the anticipated level, the perceived quality surpasses mere satisfaction, consequently culminating in customer contentment. A closer examination of Table 5 reveals that the mean values for indicators SQ1 through SQ4 are 4.184, 4.208, 4.320, and 4.456 respectively. These values are indicative of the prevailing consensus among respondents regarding the quality of service in e-banking facilities. It is apparent that the respondents express satisfaction with their utilization of e-banking services owing to the satisfactory and advantageous service quality delivered to them. (Supriyanto et al., 2021) emphasizes the need for continuous improvement in service quality to enhance customer relationships and organizational performance, specifically through meeting customer needs.. The acknowledgment of the adequacy and benefits derived from the service quality further solidifies the perceived value of e-banking among users. Ultimately, this concordance between service quality and customer satisfaction underscores the importance of continually enhancing and optimizing service standards to meet evolving consumer needs and expectations.

In order to enhance indicator SQ1, which exhibits the smallest mean value in comparison to SQ2 - SQ4, the bank can introduce targeted initiatives such as special deals, promotions, or exclusive discounts tailored specifically for customers utilizing their e-banking services. These incentives may encompass fee waivers for specific transactions, cashback incentives, or the implementation of reward programs. By leveraging these incentives, users can effectively economize on their transactions, thus enhancing their overall satisfaction with the e-banking experience. Moreover, such initiatives can foster increased engagement and loyalty among e-banking customers, thereby contributing to the bank's retention efforts and bolstering its competitive edge in the market.

Table 6 Customer Satisfaction Descriptive

Indicator		Frequency					Mean	Median	Mode
		1	2	3	4	5			
All kinds of electronic banking services meet all my expectations.	CSB1	0	0	12	53	60	4,384	4	5
My banking work is done in time-saving in electronic banking systems.	CSB2	0	1	15	57	52	4,28	4	4
Customer complaints will be dealt with as soon as possible	CSB3	1	2	18	51	53	4,224	4	5
Electronic banking systems have accelerated the process of getting things done.	CSB4	0	1	14	56	54	4,304	4	4
Electronic system users tend to use new electronic services.	CSB5	0	0	16	54	55	4,312	4	5

Source: Data Processed (2024)

Customer Satisfaction is intricately linked to the perceived value or quality that customers experience when engaging with a service. Their assessments are shaped by various factors, including the efficiency of service delivery and their pre-existing expectations. Upon careful examination of Table 6, we can discern that the mean values of indicators CSB1, CSB2, CSB3, CSB4, and CBS5 stand at 4.384, 4.280, 4.224, 4.304, and 4.312 respectively. These numerical representations not only highlight the overall satisfaction levels reported by respondents but also signify a consensus regarding the positive evaluation of E-banking services. This suggests that customers are generally content with their usage of e-banking facilities, implying a high level of satisfaction among the user base. Even though society may not fully understand banking products and their advantages (Dewi, 2023).

To enhance CSB 3, characterized by its relatively lower mean value, the bank can implement strategies to expedite the resolution of customer complaints. One effective approach is to prioritize the handling of complaints, ensuring that they are addressed promptly upon receipt. This may involve streamlining internal processes to facilitate quicker response times and resolution procedures. Additionally, fostering a culture of proactive communication within the customer service team can be beneficial. Encouraging representatives to reach out to customers proactively, seeking feedback and addressing concerns in a timely manner, can help improve overall satisfaction levels. Providing regular support and guidance to customer service staff is also crucial. This could include ongoing training sessions, workshops, or mentoring programs aimed at enhancing their problem-solving skills and communication techniques. On the other hand, customer satisfaction will increase if the bank can enhance the marketing mix concept (Dewi & Hidayat, 2023). By empowering employees with the necessary tools and knowledge, the bank can better equip them to effectively manage and resolve customer complaints, ultimately contributing to improved satisfaction levels and a stronger reputation for quality service.

CONCLUSION

Amidst the rapid evolution of information technology, e-banking has emerged as an increasingly favored avenue for bank clientele to avail themselves of banking services via the internet or mobile platforms. Despite the persistence of conventional banking practices in many regions, the exponential expansion of the internet, e-

commerce, as well as the financial and banking sectors has spurred a notable migration towards digital banking solutions. The efficacy of e-banking hinges significantly on the attainment of customer satisfaction and the rigorous adherence to Customer-Centric principles. It is imperative for banks to discern the myriad factors that influence customers' inclinations towards utilizing e-banking services, while also nurturing and preserving their trust. These pivotal factors encompass a spectrum ranging from cloud services and bank system security to the e-learning of users and service quality. Armed with a comprehensive understanding of the elements that underpin customer contentment, banks can not only refine their e-banking offerings but also fortify their competitive standing within the digital milieu.

Drawing upon the findings and extensive discussions articulated within this study, it is evident that cloud services, bank system security, e-learning of users, and service quality collectively exert a discernible influence on the degree of customer satisfaction pertaining to e-banking services. The empirical evidence presented herein underscores the significance of these factors in shaping customers' perceptions and experiences with e-banking platforms. Furthermore, this research stands poised to serve as a valuable point of reference for stakeholders within the banking sector seeking to refine and augment their e-banking systems with the overarching goal of bolstering customer satisfaction levels. The salience of each variable examined in this study is palpable, with nuanced insights garnered into the multifaceted interplay between cloud services, bank system security, e-learning initiatives, and service quality on customer satisfaction outcomes. Looking ahead, prospective researchers are encouraged to delve deeper into the realm of causal research methodologies, leveraging statistical analyses to elucidate the extent of influence wielded by these variables vis-à-vis the formulated hypotheses. Such endeavors hold the promise of advancing our comprehension of the intricate dynamics governing customer satisfaction within the e-banking landscape, thereby paving the way for informed strategic interventions and industry advancements.

Reference

Buyya, R., Yeo, C. S., Venugopal, S., Broberg, J., & Brandic, I. (2009). Cloud computing and emerging IT platforms: Vision, hype, and reality for delivering computing as the 5th utility. *Future Generation Computer Systems*, *25*(6), 599–616. https://doi.org/10.1016/j.future.2008.12.001

Dewi, C. S. (2023). The Effect of Insurance Literation, Perceived Product Benefits, Trust in Insurance & Perceived Product Risk on Decision to Purchase Personal Insurance. *Jurnal Multidisiplin Madani*, *3*(6), 1215–1224. https://doi.org/10.55927/mudima.v3i6.3012

Dewi, C. S., & Dominggus, A. (2024). Analysis Of Structural Assurance, Integrity, Easy of Use And Brand Image On Trust In Use Of P2P Lending. *International Journal of Business, Law, and Education*, *5*(1), 386–397. https://doi.org/10.56442/ijble.v5i1.393

Dewi, C. S., & Hidayat, W. G. P. A. (2023). The Role of Marketing Mix on Public Interest of Banking Credit Submission Application. *Jurnal Sistim Informasi Dan Teknologi*, 198–202. https://doi.org/10.60083/jsisfotek.v5i2.264

Fatima, A. (2011). E-Banking Security Issues – Is There A Solution in Biometrics? . *Journal of Internet Banking and Commerce*, *16*(2).

Ginting, Y. M., Chandra, T., Miran, I., & Yusriadi, Y. (2023). Repurchase intention of e-commerce customers in Indonesia: An overview of the effect of e-service quality, e-word of mouth, customer trust, and customer satisfaction mediation. *International Journal of Data and Network Science*, *7*(1), 329–340. https://doi.org/10.5267/j.ijdns.2022.10.001

Hendri, J. (2020). *Pengaruh Keamanan, Resiko Dan Kualitas Layanan Terhadap Loyalitas Nasabah Pengguna Mobile Banking*. IAIN.

Hidayat, F. (2021). *Akselerasi Layanan Elektronik Banking dalam Meningkatkan Produktivitas Bank Syariah*. IAIN Parepare.

Husain, T., & Budiyantara, A. (2020). Analysis of Control Security and Privacy Based on e-Learning Users. *SAR Journal - Science and Research*, 51–58. https://doi.org/10.18421/SAR32-01

Imran, M., Hamid, S. N. binti A., & Aziz, A. binti. (2018). The influence of TQM on export performance of SMEs: Empirical evidence from manufacturing sector in Pakistan using PLS-SEM. *Management Science Letters*, 483–496. https://doi.org/10.5267/j.msl.2018.3.003

Istiqomah. (2019). *Pengaruh Pengetahuan, Keamanan Dan Kemudahan Terhadap Penggunaan Mobile Banking Pembayaran Online Ukt Mahasiswa Uin Raden Intan Lampung*. UIN Raden Intan.

Jong, C.-Y., Sim, A. K. S., & Lew, T. Y. (2019). The relationship between TQM and project performance: Empirical evidence from Malaysian construction industry. *Cogent Business & Management*, *6*(1). https://doi.org/10.1080/23311975.2019.1568655

Li, F., Lu, H., Hou, M., Cui, K., & Darbandi, M. (2021). Customer satisfaction with bank services: The role of cloud services, security, e-learning and service quality. *Technology in Society*, *64*, 101487. https://doi.org/10.1016/j.techsoc.2020.101487

Mridha, M. F., Nur, K., Saha, A. K., & Akhtaruzzaman, Md. (2017). A New Approach to Enhance Internet Banking Security. *International Journal of Computer Applications*, *160*(8), 35–39. https://doi.org/10.5120/ijca2017913093

Ponomarenko, T., Prokopenko, O., Kuzmenko, H., Kaminska, T., & Luchyk, M. (2018). Banking security of Ukraine: current state and ways to improve. *Banks and Bank Systems*, *13*(2), 77–88. https://doi.org/10.21511/bbs.13(2).2018.07

Prodan, R., & Ostermann, S. (2009). A survey and taxonomy of infrastructure as a service and web hosting cloud providers. *2009 10th IEEE/ACM International Conference on Grid Computing*, 17–25. https://doi.org/10.1109/GRID.2009.5353074

Rivalina, R. (2017). Strategi Pemanfaatan E-Learning Dalam Mengatasi Keterbatasan Jumlah Dosen. *Jurnal Kwangsan*, *5*(2), 129. https://doi.org/10.31800/jtp.kw.v5n2.p129--145

Saputri, R. (2018). *Strategi Pemasaran Terhadap Kepuasan Nasabah Pt.Bank Rakyat Indonesia (Persero) Tbk. Unit Batua Raya* . UIN Alaudin.

Supriyanto, A., Wiyono, B. B., & Burhanuddin, B. (2021). Effects of service quality and customer satisfaction on loyalty of bank customers. *Cogent Business & Management*, *8*(1). https://doi.org/10.1080/23311975.2021.1937847

Susanti, S., Fasa, M. I., Suharto, & Fachri, A. (2022). Analysis of the Quality of Mobile Banking Services and Their Effect on Costumer Satisfaction. *IJAB Indonesian*

Journal of Accounting and Business, *4*(1), 38–49. https://doi.org/10.33019/ijab.v4i1.27

Wahyuningsih, N., & Janah, N. (2018). Faktor-faktor Yang Mempengaruhi Kepuasan Nasabah Menggunakan Internet Banking Pada Bank Muamalat. *Al-Amwal : Jurnal Ekonomi Dan Perbankan Syari'ah*, *10*(2), 295. https://doi.org/10.24235/amwal.v10i2.3596

Yuniarti, V. S. (2015). *Perilaku Konsumen : Teori Dan Praktik*. Pustaka Setia.