

Research Article

The Impact of Banking Service Digitization on Customer Satisfaction and Loyalty in Commercial Banks: The Case of National Bank of Algeria (NBA) ---Dr Oukal Amar

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The Impact of Banking Service Digitization on Customer Satisfaction and Loyalty in Commercial Banks: The Case of National Bank of Algeria (NBA)

Dr Oukal Amar¹

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Abstract: This study aims to explore the impact of digitizing banking services on customer satisfaction and loyalty, with a focus on the Banque Nationale d'Algérie (BNA). The research adopted a descriptive-analytical methodology and employed a questionnaire to collect data from a sample of 88 customers of the Banque Nationale d'Algérie (BNA). Using SPSS software (version 23) for data analysis, the results revealed a statistically significant positive effect at the 0.05 significance level of banking service Digitizationon customer satisfaction at the Banque Nationale d'Algérie (BNA). A significant positive effect was also observed on customer loyalty, indicating that digitized services enhance customer satisfaction and positively influence customer loyalty. The study also identified several factors influencing customer satisfaction and loyalty, including service quality and security. In conclusion, the study presented practical recommendations supported by procedural and implementation mechanisms to improve digitization in Algerian banks, with an emphasis on developing digitized banking services, increasing awareness of electronic banking, strengthening cybersecurity, and providing effective customer support services.

Keywords: Banking Service Digitization, Customer Satisfaction, Customer Loyalty, Banque Nationale d'Algérie (BNA), Financial Technology.

Introduction

Commercial banks increasingly rely on vast and dynamic customer data to enhance service delivery and strengthen relationships with clients. In today's competitive banking landscape, access to secure and reliable financial services has

¹ University of M'sila, Algeria, Amar.oukal75@gmail.com

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become a strategic imperative. As Chirisa et al. (2020) highlight, the growing adoption of financial technology (FinTech) by financial institutions has led to the emergence of digital platforms offering services such as online banking, mobile banking, blockchain applications, and wearable devices—all aimed at improving customer reach and engagement.

The rise of digital banking services has transformed traditional banking models, enabling institutions to offer more personalized, efficient, and secure services. Egala et al. (2021) emphasize that digital banking quality dimensions—such as ease of use, efficiency, privacy, and reliability—significantly influence customer satisfaction and retention. These innovations have reshaped customer expectations, pushing banks to adopt digital solutions that foster trust and long-term loyalty.

Ozili (2018) further argues that digital finance plays a critical role in enhancing financial inclusion, especially in regions where traditional banking access is limited. Customers increasingly expect seamless, secure, and responsive digital experiences, prompting banks to invest in electronic service delivery channels that meet these evolving demands. In Algeria, the availability of digital banking services across commercial banks is seen as a key driver of customer satisfaction and loyalty, contributing to competitive advantage in a rapidly digitizing financial environment.

Amid the rapid transformations sweeping the global financial sector, digitization has become an indispensable strategic choice for commercial banks seeking to enhance their competitiveness and improve service quality. Technological advancement has reshaped the relationship between banking institutions and their clients, with digital services now playing a central role in meeting—and even exceeding—customer expectations, driving satisfaction, and fostering long-term loyalty.

In this context, it becomes essential to study the impact of banking service digitization on customer satisfaction and loyalty, as these two indicators are among the most prominent measures of performance that reflect the effectiveness of modern banking policies.

This article focuses on the Banque Nationale d'Algérie (BNA) as a case study to examine how the adoption of digital banking services influences the customer experience. It analyzes the extent of customer satisfaction with these services and how that translates into loyalty toward the banking institution. Furthermore, the article aims to highlight the key factors affecting this relationship—such as service quality, ease of use, security, and technical support—with the goal of providing a scientific and practical perspective that contributes to enhancing the digital performance of Algerian banks and strengthening their customer relationships in the era of financial technology.

In summary, the integration of FinTech tools and digital banking platforms is not only reshaping customer-bank relationships but also redefining the strategic priorities of commercial banks in the face of technological disruption, rising customer expectations, and market competition.

Problem Statement

Despite the growing use of digital banking services, the relationship between digitization, customer satisfaction, and loyalty remains unclear in the Algerian context. To what extent does the digitization of banking services affect customer satisfaction and loyalty toward commercial banks—using the Banque Nationale d'Algérie (BNA) as a case study? This central question branches into the following sub-questions:

Does digitization truly enhance customer satisfaction?

Does it foster loyalty to the bank?

What factors influence this relationship? These questions form the core of the study's problem.

Study Hypotheses:

The digitization of banking services positively influences the attraction of new customers to the bank.

There is a statistically significant correlation between digitized banking services and the increase in the number of bank customers.

The digitization of banking services affects customer satisfaction and loyalty toward the bank.

Study Objectives:

The study aims to achieve a primary objective: to explore the extent to which the digitization of banking services affects customer satisfaction and loyalty toward commercial banks, using the Banque Nationale d'Algérie (BNA) as a case study. This is pursued through the following secondary objectives:

Identify the latest digitized banking technologies and services adopted by the Banque Nationale d'Algérie.

Assess the degree to which customers prefer interacting with digital banking technologies.

Examine the impact of digital banking services—such as ATMs, home banking, and mobile banking—on attracting customers and increasing their engagement with the bank.

Determine the influence of these technologies on customer loyalty and satisfaction with the services provided by commercial banks

Study Significance

The significance of this study stems from the importance of its subject matter. The researcher anticipates that the study's findings will be beneficial in the following ways:

Scientific Significance:

It will contribute to bridging the knowledge gap regarding the impact of digitization in the Algerian banking sector.

The study provides a framework for enhancing public awareness of the role of modern technologies in facilitating banking services.

Practical Significance:

The study offers practical insights for Algerian banks on how to improve customer services through digitization.

It will assist banks in designing marketing and technological strategies that align with customer needs, thereby enhancing their competitiveness in the market.

The study will present actionable recommendations to improve the digitization of banking services, enhancing customer experience and loyalty.

It delivers a detailed analysis of the current state of banking digitization in Algeria and the factors influencing customer satisfaction.

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Study Delimitations

Topical Delimitation: The impact of banking service digitization on customer satisfaction and loyalty within the Algerian banking sector.

Human Delimitation: A sample of 88 current customers of the Banque Nationale d'Algérie (BNA).

Geographical Delimitation: Algeria, with a focus on the Banque Nationale d'Algérie and its branches.

Temporal Delimitation: The field study was conducted during the first half of the year 2024.

Study Terminology

- Digitization of banking services

Digital Banking may be defined as enabling banking transactions and transactions by the realization or presentation of information via the Internet, mobile, ATM, and similar technology-based channels through digitizing information using technology" (Balkan, 2021).

- Customer satisfaction

Customer satisfaction is an evaluative judgment of varying type/quality and intensity that a product/service itself, or a feature of it, does fulfill expectations" (Bosnjak, 2014).

- Customer loyalty

Customer loyalty is a deeply held commitment to rebuy or repatronize a preferred product/service consistently in the future, despite situational influences and marketing efforts having the potential to cause switching behavior" (Oliver, 1999).

Banque Nationale d'Algérie (BNA)

The Banque Nationale d'Algérie (BNA), created on June 13, 1966, is Algeria's first national commercial bank. It operates as a universal bank and was historically responsible for financing agriculture. Today, it offers diversified banking services and has expanded internationally" (BNA, 2024).

Theoretical Framework and Literature Review

Theoretical Framework

Banking services digitization

Digitization in banking services has emerged as a beacon of hope for the banking sector as they strive to retain their existing customers and attract new ones" (Infosys BPM, 2024)

Importance of Digitizing Banking Services

Digitization plays a pivotal role in modernizing banking operations. It enhances efficiency, reduces costs, and improves customer satisfaction by enabling faster, more secure, and more accessible services. In developing economies, it also promotes financial inclusion and innovationKey Insights.

Improved Performance: Digitization positively affects bank performance metrics such as Return on Assets (ROA) and Return on Equity (ROE), especially when paired with secure internet banking platforms.(Kaci, S. 2024)

Cost Reduction & Inclusion: Digital banking reduces transaction costs and makes services more affordable for low-income individuals, helping bridge financial gaps.(Moussahhil, M., & Elfadi, L.2024)

- Operational Efficiency: In Algeria, a study on commercial banks in Bejaia found that digitization simplified internal procedures, boosted competitiveness, and fostered innovation.(Rusu, V., & Roman, A. 2022)

Types of Digital Banking Services

Digital banking encompasses a range of services that leverage technology to deliver financial solutions efficiently and securely. Key types include:(Alkhawaiter, W. A. 2020)

Online Banking: Accessing banking services via web platforms, including fund transfers, bill payments, and account management.

Mobile Banking: Using smartphone apps to perform transactions, check balances, and receive alerts.

Electronic Banking (E-Banking): Broad term covering all digital transactions, including ATMs, POS systems, and electronic fund transfers.

Internet Banking: Specific to services accessed through internet browsers, often including NEFT, RTGS, ECS, and IMPS systems.

Mobile Wallets: Digital wallets like Apple Pay or Google Pay that allow users to store card information and make payments via mobile devices.

Challenges of Digitizing Banking Services

While digitization offers significant benefits, it also presents several challenges that banks must address to ensure secure and efficient operations:

Cybersecurity Risks: As banks handle vast amounts of sensitive data, they are increasingly vulnerable to sophisticated cyberattacks. Ensuring robust information security is critical to maintaining customer trust and institutional reputation (Huamani-Sotelo et al., 2024).

Digital Inclusion: Not all customers have equal access to digital tools or the internet, especially in rural or underserved areas, which can lead to exclusion from essential banking services (Gherăescu et al., 2024).

Operational Complexity: Integrating new technologies with legacy systems can be costly and technically challenging, requiring skilled personnel and strategic planning (Aliyev, H. 2022).

Regulatory Compliance: Rapid digital transformation often outpaces regulatory frameworks, creating uncertainty around data privacy, digital identity, and cross-border transactions.

Customer Satisfaction in Banking Services

Customer satisfaction in banking refers to the degree to which banking services meet or exceed customer expectations. It is influenced by factors such as service quality, staff behavior, digital accessibility, and responsiveness. High satisfaction levels lead to stronger customer loyalty, increased retention, and positive word-of-mouth (Bunyatova S. 2022).

“Customer satisfaction is a fundamental metric that reflects the success of businesses, including those in the banking sector. It refers to the extent to which customers' expectations are met or exceeded by the products or services provided” (IJRPR, 2023).

“Staff warmth, response speed, product knowledge, and branch ambience are all significant predictors of customer satisfaction in banking” (Piyinhu, 2024).

Customer Loyalty in Banking

Customer loyalty in banking reflects a client's commitment to continue using a bank's services over time. It is shaped by trust, service quality, privacy, responsiveness, and emotional connection. Loyal customers are more likely to recommend the bank, resist switching, and engage in long-term relationships (Nazarov, B. 2022).

“Responsiveness, privacy, commitment, trust, and empathy are key antecedents of bank loyalty. Cultural and economic factors, such as individualism and the Human Development Index, also moderate these relationships” (Buhler et al., 2024).

“Organizational reputation mediates the relationship between customer satisfaction and loyalty, suggesting that banks must invest in both service quality and brand image to retain customers” (Bontis, Booker, & Serenko, 2007).

Digitization of Banking Services in Algeria

The digitization of banking in Algeria has accelerated in recent years, driven by the need for efficiency, innovation, and competitiveness. Digital transformation has improved internal procedures, enhanced customer experience, and enabled banks to offer more flexible and accessible services. However, challenges remain, including infrastructure limitations, regulatory gaps, and customer readiness.

“Digitization has a positive and significant effect on the performance of banking activities. It simplifies management, boosts innovation, and enhances competitiveness, especially in international markets” (Kaci, 2024).

“Despite its potential, digital banking in Algeria faces challenges such as low digital literacy, resistance to change, and limited technological infrastructure” (Bendjoudi, 2024).

Digitization at the National Bank of Algeria (BNA)

The National Bank of Algeria (BNA) has actively embraced digital transformation to enhance service delivery, customer experience, and operational efficiency. Through mobile banking, online platforms, and digitized services, BNA aims to modernize its offerings and align with global banking standards. The bank's digitization strategy is supported by national reforms and regulatory frameworks, including the Monetary and Banking Law 23-09 and Bank of Algeria Regulation 24-04.

“The National Bank of Algeria has introduced several digital services to improve accessibility and competitiveness. These efforts are part of a broader strategy to achieve sustainable competitive advantage through digital transformation” (University of Chlef, 2024).

“Regulation 24-04 outlines the legal framework for digital banking in Algeria, enabling banks like BNA to operate digital platforms under clear licensing conditions” (Boufama, 2024)

Literature Review

Abildtrup, A. (2024). The rise of robotic process automation in the banking sector: Streamlining operations and improving efficiency. *Journal of Computing and Natural Science*, 4(1).

The main objective of Abildtrup's study is: To investigate how Robotic Process Automation (RPA) enhances operational efficiency and customer satisfaction in the banking sector, particularly through automating repetitive back-office tasks and improving service delivery.

The study explores:

The role of RPA platforms like UiPath and Automation Anywhere

Case studies within banks demonstrating improved productivity and customer happiness

The strategic potential of RPA in digital transformation and risk reduction

Alshibly, H., Alshurideh, M., Al Kurdi, B., & Salloum, S. A. (2024). The impact of digital transformation on customer satisfaction and loyalty in commercial banks: An empirical study. *International Journal of Data and Network Science*, 8(1), 1-12.

The study To examine the impact of digital transformation on customer satisfaction and loyalty in commercial banking, focusing on how digital service quality, trust, and ease of use influence customer perceptions and long-term engagement.

The researchers conducted empirical analysis using survey data from commercial bank clients, assessing how digitized services—such as mobile apps, online platforms, and digital support—affect customer experience and retention.

Methodology and Procedures

Study Methodology

To achieve the objectives of the current study, the researchers adopted the descriptive-analytical approach as the most appropriate. This methodology relies on collecting and analyzing data to understand phenomena related to the digitization

of banking services, which in turn helps determine the extent to which this digitization affects customer satisfaction and loyalty.

Study Population

The study population consists of customers of the Banque Nationale d'Algérie (BNA), with a focus on the segment that interacts with digital banking services. According to the bank's official page, this segment includes 44,872 customers.

Study Sample

A random sample was selected using the convenience sampling method, consisting of 88 customers from those who use digital banking services at the Banque Nationale d'Algérie (BNA).

Instrument Validity and Reliability

Instrument Validity: Validity was verified by presenting the questionnaire to eight experts in administrative and banking sciences to ensure the clarity and relevance of its items to the intended purpose. Their feedback was used to enhance the content of the instrument. Construct validity was also confirmed by administering the questionnaire to a pilot sample of 20 participants outside the main study sample. The validity results are presented in Table 1.

Instrument Reliability: Reliability was assessed using Cronbach's Alpha coefficient, based on the responses of the pilot sample. The reliability results are also shown in Table 1.

Table 1: Validity Results and Cronbach's Alpha Reliability Test for the Study Instrument

Validity	Reliability (Cronbach's Alpha)
0.75	0.87

The measurement instrument exhibited acceptable construct validity (0.75), suggesting that the items are appropriately aligned with the conceptual framework of the study. Additionally, the reliability coefficient, as measured by Cronbach's Alpha (0.87), reflects a high level of internal consistency, indicating that the scale items are homogenous and effectively capture the intended construct. This level of reliability exceeds the commonly accepted threshold of 0.70, as recommended by Nunnally (1978), and supports the robustness of the instrument for empirical analysis.

Statistical Methods

The data were statistically processed using the SPSS software, applying the following statistical techniques:

Frequencies and percentages to describe the distribution of responses.

Arithmetic means and standard deviations to assess the weight of responses and rank them in descending order based on the mean values.

A hypothetical mean was used to determine respondents' orientation toward each statement. If the mean exceeds 3.00, this indicates agreement among respondents. This method also facilitates the analysis of response frequencies in both positive and negative directions.

The Chi-square goodness-of-fit test was employed. The sample consisted of 88 respondents, distributed equally across response categories, with a proportion of 16.6% for each. If a statistically significant difference is found between the observed and expected frequencies, this suggests that respondents' answers tend to be either positive or negative, based on a comparison of arithmetic means.

The Chi-square test yields a Chi-square value.

The p-value determines whether the differences between observed and expected means are statistically significant. This is assessed by comparing the p-value to the significance level ($\alpha \leq 0.05$). If the p-value is less than 0.05, it indicates the presence of statistically significant differences.

Results and Discussion

Testing the First Hypothesis of the StudyHypothesis: "The digitization of banking services positively influences the attraction of new customers to the bank."

Table02: Frequency and Percentage Distribution of Responses

Statement: "The bank I deal with offers a diverse range of electronic services."

ResponseLevel	Very Low	Low	Moderate	High	Very High	Total
Frequency	0	4	12	44	28	88
Percentage (%)	0.0%	4.6%	13.6%	50.0%	31.8%	100%

Interpretation

The data show that:

82.8% of respondents rated the diversity of electronic services as either High or Very High, indicating strong satisfaction with the bank's digital offerings.

Only 4.6% expressed a Low level of satisfaction, and none rated it Very Low, which suggests that the bank's digital service portfolio is perceived positively by the majority of its clients.

This supports the broader hypothesis that digital service quality contributes to customer attraction and retention.

Table (03): Arithmetic Means, Standard Deviations, Chi-Square Values, Degrees of Freedom, and Significance Levels for the Impact of Banking Service digitization on Customer Attraction

No.	Statement	Mean	Std. Deviation	Chi-square (χ^2)	Degrees of Freedom	Rank	SignificanceLevel (p)
3	The bank has an easily accessible website for all its customers	4.11	0.70	49.90	3	1	0.01
4	Customers can receive the services they need at the appropriate time	4.09	0.80	74.00	4	2	0.03
7	ATM locations are well distributed	4.02	0.90	51.80	3	3	0.01
5	The bank is characterized by the speed of executing electronic services	4.01	0.70	41.00	4	4	0.01
8	Electronic banking services are well aligned with customer needs	4.01	0.70	41.90	3	5	0.04
1	The bank is distinguished by the diversity of its electronic services	3.91	0.80	38.20	3	6	0.02
9	Electronic services are considered low-cost	3.91	0.90	69.50	4	7	0.02
2	Newsletters are sent to customers via the internet	3.85	1.00	51.60	4	8	0.01

6	The bank's electronic services offer benefits that suit the customer	3.81	0.90	18.90	3	9	0.02
-	Over all Mean	3.96	0.81	48.30	-	-	-

The results indicate that the overall mean score (3.96) exceeds the hypothetical mean (3.00), reflecting a high level of customer satisfaction with the digitization of banking services and its positive impact on attracting new clients. The highest mean score (4.01) was recorded for the statement "The website is easily accessible," underscoring the importance of digital presence and ease of access in enhancing customer attraction. Furthermore, the results, as evidenced by the Chi-square values and the majority of p-values being below (0.05), demonstrate statistical significance, indicating that each item plays a meaningful role in influencing customer satisfaction.

The study recommends enhancing the digital customer experience, particularly in terms of ease of access, speed of service delivery, widespread availability of ATMs, and the provision of flexible, low-cost electronic services to meet diverse customer needs. This aligns with the strategic importance of digitization in ensuring customer retention and expanding the bank's base of new clients.

Thus, the hypothesis is confirmed:

"The digitization of banking services influences the attraction of new clients to the bank."

Testing the Second Hypothesis: "There is a statistically significant correlation between digitized banking services and the increase in the number of the bank's clients."

Table(04): Statistical Indicators of Digitized Banking Services and Client Growth

No.	Statements	Mean Score	Standard Deviation	Chi-Square Value	Degrees of Freedom	Rank	p-value
0	Spread of the bank's ATMs	4.62	0.70	56.7	2	1	0.04
1	Good reputation and financial standing	4.32	0.91	48.9	3	2	0.01
2	Quality of digitized banking services	4.27	0.95	35.7	3	3	0.01
3	Compliance with Islamic law	4.02	0.97	21.2	3	4	0.01
-	OverallMean	4.30	0.85	40.6	-	-	-

The results indicate that all statements obtained mean scores exceeding the hypothetical average (3.00), which reflects the respondents' overall satisfaction with the reasons that motivated their choice of bank. The highest-ranked statement was "The widespread availability of the bank's ATMs," which received the highest mean score (4.60), underscoring the importance of accessible ATM locations and ease of service access.

This was followed by the statement "Compliance with Islamic law" (4.30), highlighting customers' inclination toward Sharia-compliant banking services. Additionally, the p-values for all statements were below (0.05), indicating strong statistical significance.

Based on these findings, banks should expand the distribution of ATMs to ensure customer convenience, while also focusing on the Sharia compliance of their services and enhancing the quality of digital banking offerings. These factors are fundamental in strengthening customer satisfaction and loyalty to the bank.

This confirms the validity of the hypothesis: "There is a statistically significant correlation between digital banking services and the increase in the number of bank customers." Accordingly, the researcher emphasizes the importance of banks focusing on improving the distribution of ATMs, ensuring the compliance of services with Islamic law, and enhancing the quality of digital banking services, given their critical role in strengthening customer satisfaction and loyalty to the bank.

Hypothesis Test 3:

“The digitization of banking services affects the level of customer loyalty and satisfaction.”

To test this hypothesis, the arithmetic means, standard deviations, degrees of freedom, and p-values from the Chi-square test were calculated for the sample responses regarding the impact of banking service digitization on customer loyalty and satisfaction. The results are presented in Table 05.

Table (05): Analysis of Banking Service Digitization and Its Impact on Customer Satisfaction

No.	Statement	Mean	Std. Dev.	Chi ² Value	df	Rank	Significance
1	Banking transactions became faster after adopting digital technologies	4.41	0.7	22.4	2	1	0.01
2	The spread of ATMs saved time and effort	4.40	0.8	65.7	3	2	0.03
3	Electronic banking services are secure for deposits and transfers	4.30	0.9	74.3	4	3	0.02
4	E-services provide complete confidentiality	4.30	0.7	8.9	2	3	0.01
5	There are no risks associated with ATM usage	4.18	0.9	55	4	5	0.03
6	The bank offers distinguished electronic services	4.14	0.9	55	4	6	0.03
7	E-services provide comfort and convenience	4.13	0.8	27.9	3	7	0.03
8	Electronic banking is easy and flexible	3.90	0.1	9.5	3	8	0.02
9	ATMs provide sufficient cash amounts	3.34	0.3	20.7	4	9	0.2
	Over all Mean	4.12	0.89	37.16	3.22		

The results presented in Table 05 show that the overall mean reached (4.12) with a standard deviation of (0.89). At the item level, all mean scores exceeded the hypothetical average (3.00), indicating consensus among respondents on the importance and effectiveness of electronic banking services.

The highest-rated statement was: “Banking transactions became faster after adopting digital technologies” (4.41), highlighting the significance of transaction speed as a key factor in customer satisfaction. Standard deviations ranged between (0.7-1.3), reflecting a high level of consistency in responses, except for the statement regarding the availability of sufficient cash amounts, which showed relatively greater variation (1.3).

All p-values were below the threshold of (0.05), confirming statistically significant differences. This suggests a positive bias among respondents in favor of the statements. The ranking of items based on mean scores emphasizes the priority of accelerating transactions and expanding ATM coverage.

Accordingly, banks should focus on broadening the reach of ATMs and digital services to meet customer expectations, particularly those who value speed and convenience. It is also essential to develop mechanisms that ensure sufficient cash availability through ATMs to address this gap, alongside intensifying awareness campaigns about the security of digital banking to strengthen customer trust. Thus, the hypothesis is confirmed: “The automation of banking services affects the level of customer loyalty and satisfaction”

Summary of Key Findings:

The automation of banking services contributes to attracting new customers to the bank.

The automation of banking services positively influences customer satisfaction and loyalty.

There is a statistically significant relationship between the number of ATMs and the number of bank customers.

ATMs help save time and effort for bank clients.

A considerable number of bank customers do not use ATM cards for purchase transactions.

A significant portion of customers lack proficiency in using computers and the internet, and therefore do not benefit from the full range of automated banking services available to them.

There are no risks associated with using ATMs, which also provide users with a variety of services and enable the withdrawal of necessary amounts for daily needs, including deposits and transfers.

Recommendations and Proposals

Based on the findings of the study, the researcher recommends the following actions for Algerian bank management to enhance customer satisfaction and loyalty through digital transformation:

Invest in Mobile and Online Banking Development. Banks should allocate additional resources to the development of mobile applications and online banking platforms. Emphasis should be placed on integrating innovative features that improve the customer experience. This includes:

Forming specialized software development teams

Conducting market research to identify customer needs

Implementing data-driven improvements based on research findings

Organize Awareness Campaigns and Educational Workshops. To increase customer engagement with digital services, banks should:

Launch awareness campaigns in collaboration with relevant institutions

Host workshops that educate customers on the benefits and usage of digital banking

Utilize social media platforms to disseminate information about new services and features

Enhance Cybersecurity Systems. To build customer trust and ensure data protection, banks must:

Implement advanced encryption technologies

Regularly update security systems

Appoint cybersecurity experts to assess current infrastructure and address vulnerabilities

Improve Technical Support Services. To ensure seamless customer service, banks should:

Provide 24/7 technical support availability

Offer multiple communication channels (e.g., phone, chat, email)

Train support teams to handle frequently asked questions and resolve issues efficiently

References

1. Aliev, F. H. (2022). Human capital as a philosophical problem. *Bank and Policy*, 2(1), 49–53.
2. Alkhawaiter, W. A. (2020). Digital banking: A literature review. Retrieved from Academia.edu

3. Balkan, B. (2021). Impacts of digitalization on banks and banking. In B. Balkan (Ed.), *The Impact of Artificial Intelligence on Governance, Economics and Finance, Volume I* (pp. 33–50)
4. Banque Nationale d'Algérie. (2023). Présentation de la BNA. Retrieved from <https://www.bna.dz/fr/presentation-de-la-bna/>
5. Bendjoudi, I. (2024). Digital banking challenges and opportunities in Algeria [Master's thesis, University of Saida]. Retrieved from University of Saida Repository
6. Bontis, N., Booker, L. D., & Serenko, A. (2007). The mediating effect of organizational reputation on customer loyalty and service recommendation in the banking industry. *Management Decision*, 45(9), 1426–1445. <https://doi.org/10.1108/00251740710828681>
7. Bosnjak, M. (2014). Customer satisfaction. In A. C. Michalos (Ed.), *Encyclopedia of Quality of Life and Well-Being Research* (pp. 1409–1412)
8. Boufama, S. (2024). Digital banks in Algeria – A study of the Bank of Algeria Regulation 24/04. **Revue des Sciences Humaines*, 36*(2), 489–499. Retrieved from [ASJP] (<https://asjp.cerist.dz/en/article/273437>)
9. Buhler, R. N., De Oliveira Santini, F., Junior Ladeira, W., Rasul, T., Perin, M. G., & Kumar, S. (2024). Customer loyalty in the banking sector: A meta-analytic study. *International Journal of Bank Marketing*, 42(3), 513–535. <https://doi.org/10.1108/IJBM-08-2023-0484>
10. Bunyatova, S. (2022). Truth and its theoretical and philosophical models. *Bank and Policy*, 2(1), 87–93.
11. Gherțescu, C., Manta, A. G., Bădărcea, R. M., & Manta, L. F. (2024). How does the digitalization strategy affect bank efficiency in Industry 4.0? A bibliometric analysis. *Systems*, 12(11), 492. <https://doi.org/10.3390/systems12110492>
12. Huamani-Sotelo, F., Cruzado-León, K., Cordova-Buiza, F., Ticona-Apaza, V., & Gutierrez-Aguilar, O. (2024). Digital transformation of the banking system: Challenges and technological leadership. In *Technology: Toward Business Sustainability* (pp. 244–252). Springer. https://link.springer.com/chapter/10.1007/978-3-031-54019-6_23
13. Infosys BPM. (2024). How digitization is shaping the future of banking. Retrieved from <https://www.infosysbpm.com/offerings/industries/financial-services/documents/how-digitization-is-shaping-the-future-of-banking.pdf>
14. International Journal of Recent Progress in Research. (2023). **Customer satisfaction in banks: The role of service quality**. *IJRPR*, 4(11). Retrieved from [IJRPR]
15. Kaci, S. (2024). The impact of banking process digitization on the performance of banking activities: Empirical evidence from commercial banks in Bejaia. *ASJP*, 24(1), 19–33. Retrieved from ASJP
16. Moussahhil, M., & Elfadi, L. (2024). Banking services in the digital era: Theoretical analysis, impacts and perspectives. *African Scientific Journal*, 3(24), 399–407. <https://doi.org/10.5281/zenodo.12635819>
17. Nazarov, B. (2022). Power in the world on the basis of “similar scenarios” changes (Eastern Europe, CIS, Middle East and Africa). *Bank and Policy*, 2(1), 22–28.
18. Oliver, R. L. (1999). Whence consumer loyalty? *Journal of Marketing*, 63(Special Issue), 33–44.
19. Piyinchu, J. C. (2024). **Customer satisfaction with banking services: An exploration of the impact of branch staff behaviour on customer loyalty**. **International Journal of Research and Innovation in Social Science**, 9(6), 3094–3108.
20. Rusu, V., & Roman, A. (2022). Digitization and financial performance of banking sectors facing COVID-19. *Electronics*, 11(21), 3483. <https://www.mdpi.com/2079-9292/11/21/3483>