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ASSESSING THE DEVELOPMENT OF MOBILE BANKING IN THE CONTEXT OF DIGITAL TRANSFORMATION OF THE BANKING BUSINESS IN UKRAINE

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ABSTRACT

The future of the banking sector lies in the further development of competition between banks, increasing the efficiency of banking activities and strengthening innovative processes based on digital technologies. Mobile banking is a significant element of banking activity digitalization. The purpose of the article is to study the level of development of mobile banking in Ukraine and its influence on the efficiency of the bank's activities, as well as the development of digital transformation strategies for the banking business. The methodological basis of the research is general scientific and mathematical methods, in particular, coefficient analysis, rating methods, strategic analysis, statistical methods, as well as matrix, tabular, graphic methods are used. The object of the study is the activity of banks in Ukraine.

The ranking of the mobile applications of the 13 most powerful banks in Ukraine based on 28 criteria was conducted, as a result of which it was discovered that Ukrainian banks have more functional applications compared to banks with foreign capital. The impact of mobile banking on the bank's performance indicators was researched. The results of the study confirm the positive impact of mobile banking on the effectiveness of banking operations related to the attraction of clients and individual customer service. As part of the SWOT analysis, the main factors that contribute to the implementation of mobile banking in Ukraine were identified. Based on the conducted SWOT analysis, alternative strategies for further digital transformation of banks were developed in order to adapt to fickle market conditions.

Keywords: banks, mobile banking, banking business, digital comfort, bank rating, digital transformation strategies

JEL Classification: G21, L86

INTRODUCTION

Digital transformation has covered almost all areas of economy and social life, and the banking sphere is no exception. With the help of digital technologies, some drastic changes in the functioning of banks and particularly in communication with clients have been undertaken. Digitization of the banking system involves the introduction of new technologies, deepening the automation of processes, changes in customer relations and the implementation of cybersecurity measures.

Banks, aware of the digital technologies' advantages, which radically change the way people work and live, are actively implementing said innovations to help customers manage their finances and ensure the security of data in the virtual space.

Modern innovative technologies, such as blockchain, artificial intelligence, data analytics, the Internet of Things, etc., require banks to constantly update their operational processes and systems. In such conditions, an important element of the bank's strategic development is the formation of an effective strategy for the digital transformation of business, which essentially implies the introduction of new technologies and ensures their compatibility with existing systems.

Digital technologies create opportunities for business expansion, facilitate the establishment of innovative banking services, and at the same time contribute to the creation of numerous fraudulent schemes. Thus, banks need to pay special attention to client data protection systems, which are particularly vulnerable to fraudulent activities, and preventing cyber-attacks. It is necessary to develop effective cybersecurity measures, improve identification and authentication processes for customers, train staff in information hygiene practices, etc. That is, the impact of digitization processes is multifaceted, creates significant advantages on one hand, and on the other hand - major threats to the functioning of banks. In the entire complex of the banking business digitalization, a special place indeed belongs to the establishment of high-quality, safe, and convenient interaction with bank clients through mobile banking, ensuring the appropriate level of digital comfort and data security.

LITERATURE REVIEW

Features of development and the efficiency of mobile banking have been studied in many scientific publications. Jafri et al. (2024) systematized and summarized previous fintech literature on behavioural intentions to use bank services, emphasizing the role of trust and security in the choice of banks by customers. Ho et al. (2020) in their work developed an integrated model to investigate and identify favourable and unfavourable factors affecting the adoption of mobile banking and discovered that in addition to some objective factors that have a significant impact, it was determined that compatibility, perceived usefulness, perceived risk and self-efficacy indirectly affect consumers' intention to use mobile banking.

Geebren et al. (2020) examined the satisfaction of mobile customers in developing countries. The authors focused on researching the mechanism of increasing mobile banking customer satisfaction, emphasising the mediating role of trust in this process. Jebarajakirthy & Shankar (2021) found that the ease of access and transactions significantly impact the intention to use mobile banking, based on a survey of banking users in India. In a similar study conducted by Rabaa'i & ALMaati (2021), which involved a survey of mobile banking users in Kuwait, researchers discovered that the intention to continue using mobile banking is influenced by perceived trust, satisfaction, self-efficacy, performance expectancy, and effort expectancy.

Wu et al. (2023) investigated the relationship between the availability of banking applications and the number of bank deposits. Scientists have found that the improvement of mobile banking applications affects the increase in the level of customer satisfaction, as well as the increase in the quantity of bank deposits, though this indicator varies depending on the availability of developed technical infrastructure in the country and region. Research findings also confirm that the impact of mobile banking on deposits depends on significant regional differences, particularly in the development of the Internet and mobile technologies (Wu et al., 2023). Loaba (2022) discovered that the utilization of mobile banking services increases the propensity for savings within the West African population.

Wang & Wu (2024) investigated how mobile banking affects small business lending, in particular, the article proved that banks with better remote service were less affected by bank branch closures and small business lending virtually did not decrease.

Banna & Rana (2023) studied the impact of increased digitalization in the financial and, in particular, banking sectors on economic growth. The study established that financial technology plays a crucial role in promoting economic growth through innovative digital changes in the management of personal and corporate finances.

Khan et al. (2024) conducted a comprehensive study on the impact of financial technology and banking performance in 59 developing countries from 2010 to 2022. The article’s findings revealed a non-linear relationship between fintech and efficiency. Initially, the integration of fintech into the banks reduced efficiency, but at a certain stage, the effect changed to a positive one.

In his 2022 study, Khan examines the influence of Chinese and Pakistani cultural characteristics on the use of mobile banking. Picoto & Pinto (2021) also identify cultural factors that affect mobile banking usage, focusing on five of Hofstedés well-known cultural dimensions and investigating how these factors impact mobile banking use in four countries: Brazil, India, the United Kingdom, and the United States. Additionally, cultural factors that determine the readiness to use mobile banking in Egypt and the USA (Hassan & Wood (2020), as well as in England and Lebanon (Merhi et al., 2019) were investigated.

Hasii et al. (2024) study innovative approaches to the provision of remote services by banks in Ukraine. The research identifies the advantages and disadvantages of mobile banking, which determine the convenience and accessibility of remote banking services for customers.

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Porfírio et al. (2024) examined the impact of digital transformation on banking in Portugal. The authors concluded that flexibility, managerial capacity, and the availability of digital skills among employees are important factors for enhancing the positive impact of digital transformation in the banking sector. Abdurrahman et al. (2024) studied how technological, organizational, environmental aspects and banks' capabilities influence digital transformation and innovation to improve banking performance, using Indonesia as an example.

Tariq et al. (2024) discovered that cognitive factors, performance expectations, risk, and trust significantly predict customers' use of digital banking and financial technology. Additionally, Reydet & Carsana (2017) asserted that the design of mobile banking applications is crucial for the commitment and loyalty of bank customers. For users from Vietnam and Taiwan, perceived usefulness and risks are the most important factors in deciding to use mobile banking.

A study on mobile app usage during the COVID-19 pandemic among millennials in Malaysia suggests that simplicity, innovation, and app reliability are important for said age group when choosing a bank, while social factors are insignificant (Rahman et al. 2024). In similar research by Sebayang et al. (2024), the factors that contributed to the use of mobile banking among young people in Indonesia during the COVID-19 pandemic were investigated, and the importance of reducing the risk of contracting COVID-19 through the use of cash was particularly highlighted. Thusi & Maduku (2020) analysed the determinants of the adoption and use of mobile banking applications by millennials in Africa, including trust in institutions and perceived risk. On the other hand, Banna & Rana (2023) found that for citizens aged 55+ in Britain, the main factors influencing the decision to use mobile banking are cyber threats and the expected productivity of the application.

Wang et al. (2024) examine the challenges banks encounter while ensuring customer data privacy and cybersecurity during the process of implementing innovations. Alnaser et al. (2023) investigated how the adoption of AI in the banking system affects customers' level of satisfaction with mobile banking. In contrast, research by Sharma et al. (2022) indicates that the decision to use mobile banking among youth in India is significantly influenced by social media. Additionally, Zhu (2022) discovered that in order to promote mobile banking in rural areas in China, it is necessary to utilize diverse communication channels and it is important to customize mobile banking services to better cater to the specific requirements of rural users. Furthermore, interpersonal communication channels exert a substantial influence on the promotion of mobile banking.

Spokeviciute et al. (2019) explore the performance of less efficient banks in comparison to more efficient ones during financial crises in the USA. Ertürk (2016), Cohen et al. (2014) analysed the post-crisis regulatory reform initiatives and their impact on efficiency and risks of banking institutions.

AIMS AND OBJECTIVES

Rating methods based on criteria evaluation, coefficient analysis, statistical methods for calculating growth rates, and SWOT analysis were utilized to conduct the research. The rating of mobile banking applications was completed using a criteria evaluation methodology. During the development of the criteria system, the main aspects of customer service and the digital comfort while using banking applications (regarding the possibility of conducting various operations, account management, etc.) were previously determined. The individual aspects of each criterion correspond to the possibility of receiving a specific service by the bank's clients. Banks are evaluated according to the specified criteria, respectively, according to the point-rating system.

To assess the impact of digitalization processes on banks' financial performance, coefficient analysis was employed (Capraru & Ihnatov, 2014). Specifically, profitability indicators were examined, which represent the bank's ability to generate profit and reflect the efficiency of its operation. Changes in banks' indexes are analysed using statistical methods, predominantly through growth rates, which characterize the relative rate of change of the indicator over time in percentage terms.

In order to study the bank's economic environment, strategic analysis tools were used, namely SWOT analysis (Elsworth, 2023). The SWOT analysis facilitated an assessment of the bank's business positioning by scrutinizing potential weaknesses and strengths internal to the institution, as well as the opportunities and threats presented by the external environment. Subsequent to the analysis of the institution's strategic position (combination of the bank's strengths and weaknesses with opportunities and threats of the external environment), four prospective strategies for the digitalization of the banking business have been determined.

METHODS

The purpose of the article is to investigate the level of development of mobile banking and its impact on the bank's performance results, as well as to develop strategic directions of digital transformation for the banking business.

RESULTS

The main advantage of the digitalization of the banking system is the improvement of the customer experience, maintaining focus on upholding the most convenient and swift customer service for the widest range of banking services. Digital technologies enable customers to access banking services from any device at a time convenient for them. Mobile applications and other online platforms provide high-speed transactions, control of account balances, quick bill payments, fund transfers, and more. All of this makes banking services more accessible and convenient for customers.

Digitalization contributes to optimization and increases the efficiency of banking processes through the automation of routine operations and the introduction of innovative technologies that reduce the time, effort, and costs of customer service. This enables banks to process transactions faster, minimize costs and the possibility of errors, as well as ensure high-quality service.

In addition to the fairly obvious advantages mentioned above, digitalization, together with smart technologies such as artificial intelligence and machine learning, creates new opportunities for the development and delivery of innovative financial services. Therefore, to analyse data and increase the accuracy of decision-making, as well as to create personalized financial products and services that meet the unique needs and priorities of each client, banks can use the capabilities of artificial intelligence.

One of the biggest achievements in the digitalization of banking is the provision of remote banking services through mobile applications. It is necessary to state the fact that in terms of client comfort levels, Ukrainian banks significantly outperform European banks.

In recent years, the use of bank mobile applications due to the COVID-19 pandemic and the ongoing full-scale war has increased in Ukraine. Banks, in turn, have actively worked on improving their mobile applications.

By increasing the level of digital comfort for customers and developing the functionality of their applications, banks stimulate the tendencies of innovative development in the market of cashless payments. In 2023, despite the continuation of full-scale war, most payment card transactions in Ukraine were cashless. This is evidenced by the analysis of statistical data on transactions with payment cards issued by Ukrainian banks and financial institutions, which demonstrates an increase in the share of cashless card transactions in 2023 compared to the pre-war period. Thus, the share of non-cash transactions using payment cards by amount last year reached 65% of the total amount of transactions with payment cards, while in the pre-war year 2021, this figure amounted to 61%. The share of non-cash transactions by quantity in 2023 was 93.5% (90.1% in 2021) (Figure 1).

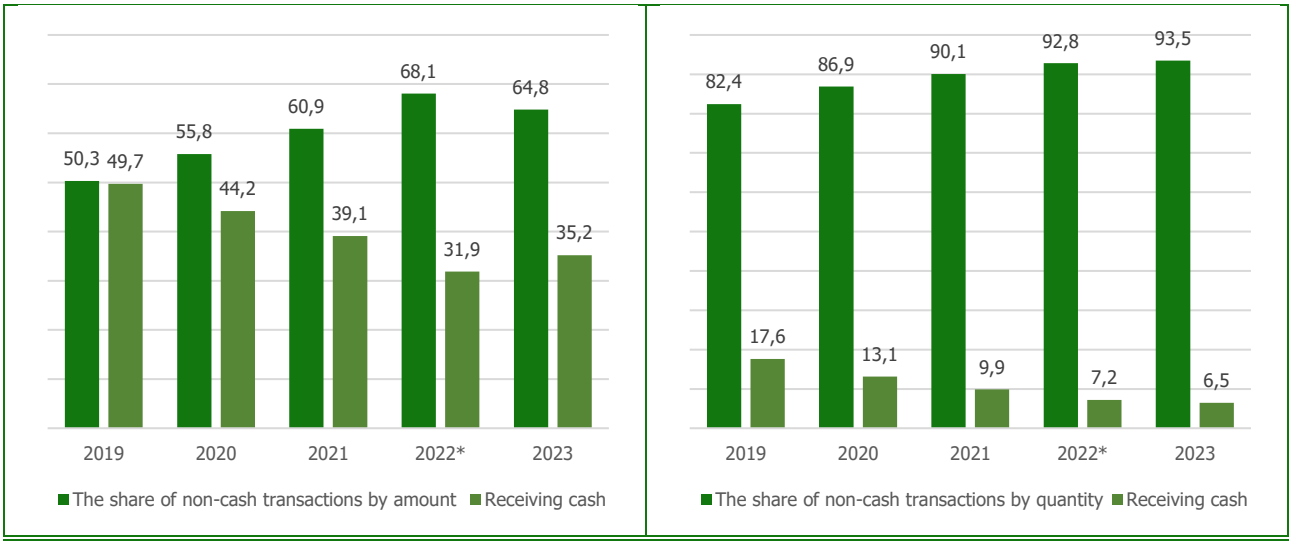

Figure 1. Dynamics of the share of non-cash transactions by amount and quantity, %. Note: data for May-December 2022. *(Source: calculated by the authors based on NBU data, National Bank of Ukraine, 2019-2023)*

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The given dynamics demonstrate the rapid growth of non-cash payments in the economy of Ukraine over the past five years. Hence, if in 2019 the ratio of non-cash transactions and cash payments was almost 50% to 50%, then in 2023 it became 65% to 35%. Analysis of cash and non-cash transactions in terms of quantity indicates only a small share of cash payments in the economy over the analysed period, which continues to decrease.

The number of transactions using payment cards issued by Ukrainian banks in 2023 amounted to 7,912.5 million, and their total amount - UAH 6,140.8 billion. A more detailed distribution of non-cash transactions in 2023 is presented in Figure 2 (a, b).

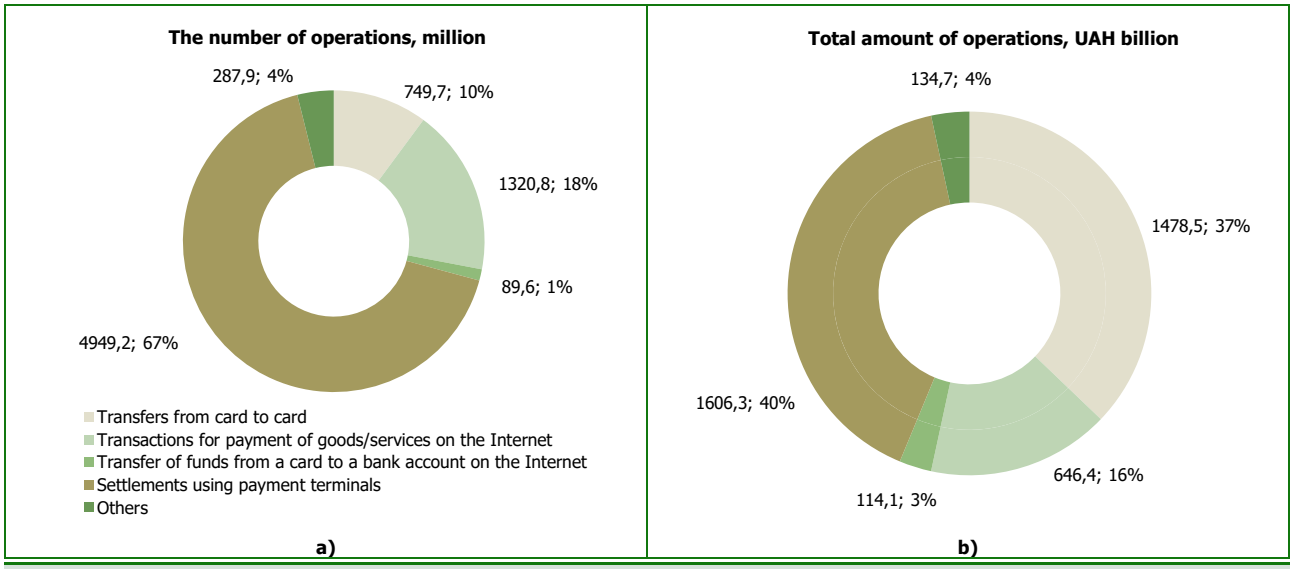

Figure 2. Distribution of non-cash transactions in 2023. *(Source: calculated by the authors based on NBU data, National Bank of Ukraine, 2023)*

The positive dynamics show that the payment infrastructure of Ukraine provides uninterrupted and stable service of cash-less transactions with payment cards, which allows Ukrainians to maintain a high level of trust of Ukrainians in cashless payments, which is a reason for Ukrainian banks to develop mobile banking actively.

The tendencies of the digital technologies implementation in banking activity stimulate practical developments and research in this area and force to search for ways to increase the efficiency of the banking business from the standpoint of advancing the digital comfort for customers, which is manifested through their use of relevant services.

The convenience and functionality of mobile applications of 13 powerful Ukrainian banks, which collectively serve more than 96% of active individuals' cards; the share of loans issued to individuals by these banks in the total aggregate of loans to individuals in the entire banking system is more than 95%; and the share deposits of individuals in total sum of deposits of individuals in the banking system - almost 88%. Therefore, the study of mobile applications of this group of banks will make it possible to investigate this segment of the banking business in Ukraine fully.

The analysed sample includes banks with the state share, banks with foreign capital, and banks with private capital.

To analyse and rank banking applications, we grouped all the selected evaluation criteria into five blocks:

1. A variety of credit and deposit operations.
2. Accounts and cards management.
3. Payments.
4. The possibility of contactless handling of operations.
5. Additional services.

The selection of the specified groups of criteria for the analysis of mobile banking applications is based on a comprehensive approach to assessing the functionality, convenience, and innovativeness of such applications. Thus, the selected criteria groups cover both the main functionality and modern trends in mobile banking development. They enable a holistic evaluation of applications from the perspectives of user experience, technological sophistication, and customer orientation.

Criteria related to the diversity of credit and deposit operations allow for an assessment of how effectively the mobile application enables customers to manage their financial resources. These are important indicators of the depth of integration of banking services into the mobile service channel. An extended range of functionalities in this area enhances customer trust and loyalty.

Convenience and intuitiveness of account and card management capabilities are key to the daily use of the application. Without such functionalities, the application loses its value as a full-fledged banking tool. A high level of payment functionality is a hallmark of the application's development and usability, significantly impacting the overall user experience.

In the context of digitalisation and increasing demand for remote services, contactless features (such as NFC payments, QR codes, digital wallets, and online identification) are becoming a major competitive advantage. This group of criteria assesses the bank's ability to provide modern, secure, and convenient interaction methods without the need for physical presence. The availability of additional functions (cashback, loyalty programs, financial analytics, chatbots, support for investment products) indicates the bank's commitment to innovation and its efforts to meet a broader range of customer needs.

Within the first block "Variety of credit and deposit operations", we have highlighted the following mobile banking options: opening a deposit online, opening a foreign currency deposit in the application, opening a loan online, and opening a credit line in the application.

Opening a deposit online means that the client, without visiting the bank and without presenting any documents, can familiarize themselves with the terms of the deposit in the application and open a deposit account by transferring funds there.

In 2022, with the increase in demand for foreign currency, foreign currency deposits became popular, which involved purchasing currency from a bank at a lower rate than when buying it on the cash market, provided that the received foreign currency was placed on deposit for a short period of time (usually 1-3 months). Some banks provided such services through their mobile applications. This option was also accompanied by the opening of a currency account in the application.

Opening a loan online means that the client can get a loan without visiting the bank and presenting physical documents.

The criterion for opening a credit line in the application means that the client can open a credit card and increase (decrease) credit line limits without a physical visit to a bank branch.

Table 1 presents the results of the examination of mobile applications from the analysed sample of banks, based on the criteria in the "Variety of credit and deposit operations" block.

Table 1. Results of the examination of banking mobile applications by the variety of credit and deposit operations.

Criteria / Mobile applications	Opening a deposit online	Opening a foreign currency deposit in the application	Opening a loan online	Opening a credit line in the application
Monobank (Universal Bank)	+	+	+	+
Sense Bank	+	+	+	+
A-BANK	+	+	-	+
PrivatBank	+	+	-	+
PUMB	+	+	-	+
EKO-BANK (Ukrgazbank)	+	+	-	-
Ukrsibbank	+	-	+	-
Otp bank	+	-	-	-
Raiffeisen Bank	+	+	+	-
Oshchadbank	+	-	-	-
KredoBank	+	-	-	-
Bank Credit Agricole	+	+	-	-
IdeaBank	+	+	-	+

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The second block "Accounts and cards management" includes criteria related to fairly simple, but essential, banking operations, namely opening and closing accounts, money transfers, currency operations, etc. This block contains the following options for receiving services in the application: opening an account online, receiving a plastic card in a remote mode, opening a digital card, linking cards of other banks in the application, displaying various accounts of a client, paying any bills in the application, the ability to disable double conversion, currency exchange online.

In some banks, you can open an account in the application without visiting a bank branch, while a number of them can send a plastic card by mail or courier. Digital (virtual) cards, which have no physical counterpart and which the client can open solely in the application and use via Google Pay or Apple Pay, are also being widely used nowadays.

Linking cards of other banks in the application (Cash'in) is an option that allows the client to connect cards from other banks to the application and replenish them.

Payment of any bill in the application, or in other words, payment of bills from cards of other banks linked in the application (Pay'out). By adding other cards to the application, clients can use them to make payments instead of using solely the "native" card. The bank benefits by earning a profit from the commission for payments from other banks and by retaining its clients.

Display of various client accounts is an option that allows you to see in the application also your accounts of individual entrepreneurs or legal entities.

The ability to disable double conversion. This option is relevant when paying with a hryvnia card for goods priced in a foreign currency other than the euro or dollar.

The possibility of online currency exchange was actualized at a time when the card exchange rate in some banks was lower than the cash rate.

Table 2 presents the ranking of banking applications according to criteria associated with the ability to manage accounts and cards.

Table 2. Ranking mobile banking apps by account and card management capabilities.

Criteria / Mobile applications	Opening an account online	Receiving a plastic card in a remote mode	Opening a digital card	Linking cards of other banks in the application	Displaying various accounts of a client	Paying any bills in the application	The ability to disable double conversion	Currency exchange online
Monobank (Universal Bank)	+	+	+	+	+	-	+	+
Sense Bank	+	+	+	+	+	-	+	+
A-BANK	+	-	+	+	+	-	+	+
PrivatBank	+	-	+	+	+	+	+	+
PUMB	-	+	+	+	-	-	-	+
EKO-BANK (Ukrgazbank)	+	-	+	+	-	-	-	+
Ukrsibbank	-	-	+	+	-	-	-	+
Otp bank	+	+	+	+	-	-	-	+
Raiffeisen Bank	+	-	+	-	-	-	-	-
Oshchadbank	-	-	+	-	-	-	-	+
KredoBank	-	-	+	+	-	-	-	+
Bank Credit Agricole	+	-	+	-	-	-	-	+
IdeaBank	+	-	+	-	-	-	-	+

The "Payments" block provides the ability to pull up the client's bills and payments in the application and pay them. This applies to utility payments, fines for traffic violations, and taxes for individual entrepreneurs. As for the latter, some banking applications allow their individual entrepreneur clients to keep records. In addition, through mobile banking applications, you can insure a car; replenish your mobile phone or that of another subscriber.

Table 3 presents the ranking of banking applications by criteria from the "Payments" service block.

Table 3. Ranking of banking mobile applications according to the ability to make various payments.

Criteria / Mobile applications	Utility payments	Fines for traffic violations	Car insurance	Replenishing the mobile phone	Tax payments for individual entrepreneurs
Monobank (Universal Bank)	+	+	+	+	+
Sense Bank	+	+	+	+	-
A-BANK	+	+	+	+	+
PrivatBank	+	+	+	+	+
PUMB	+	+	+	+	-
EKO-BANK (Ukrgazbank)	+	+	+	+	-
Ukrsibbank	+	-	-	+	-
Otp bank	+	-	-	+	-
Raiffeisen Bank	+	+	+	+	+
Oshchadbank	+	-	-	+	+
KredoBank	+	-	-	+	-
Bank Credit Agricole	+	-	+	+	-
IdeaBank	+	-	+	+	-

The next block of criteria "The possibility of contactless handling of operations" refers to complex actions that the client can perform without visiting a bank branch, in particular, dispute transactions, send a fraud report to the cyber police, restore the access to the application through "Diia", validate documents without visiting the bank, pull up Google Pay or Apple Pay in the application, become a bank client without visiting a branch.

According to the Law of Ukraine "On Payment Services", the bank must give the client the opportunity to appeal the transaction and facilitate the return of the client's money as soon as possible. Such an option is feasible through the applications of some banks.

The ability to send a fraud report to the cyber police in case of a transaction dispute is a feature, that is not yet available in any of the analysed applications. However, to simplify interaction with law enforcement agencies, the client could fill out a fraud report directly on the cyber police website in the event of an electronic appeal of the transaction.

Renewal of access to the application through "Diia" is an option that allows you to restore access to the application without a physical card.

The ability to validate or update documents without a visit to the bank - checking the client's documents either through "Diia", through an instant photo, or in another way.

Linking Google Pay and Apple Pay to the application is an option that allows you to replenish your own account from all the accounts, added to a client's wallet, and in the future (as it is not yet possible in any application) to pay any bills from all of the client's accounts tied to a wallet account.

It is possible with some banks to become their client without visiting a branch, simply by downloading a mobile application and verifying the client's identity and documents in an appropriate remote manner.

Table 4 illustrates the results of the application examination by criteria, which indicate the complex operations' digitization level.

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Table 4. Results of the examination of banking mobile applications by the possibility of contactless handling of operations.

Criteria / Mobile applications	Restoring access to the application through "Diia"	Validation of documents without visiting the bank	Dispute of transactions by the client	Sending a fraud report to the cyber police	Google Pay and Apple Pay in the application	Becoming a bank client without visiting a branch
Monobank (Universal Bank)	-	+	+	-	+	+
Sense Bank	-	+	+	-	+	+
A-BANK	-	+	+	-	+	-
PrivatBank	-	+	+	-	-	-
PUMB	-	-	+	-	+	+
EKO-BANK (Ukrgazbank)	-	-	-	-	+	+
Ukrsibbank	-	-	-	-	-	-
Otp bank	-	-	+	-	-	+
Raiffeisen Bank	-	-	+	-	-	+
Oshchadbank	-	-	-	-	-	-
KredoBank	-	-	-	-	-	-
Bank Credit Agricole	-	-	-	-	-	-
IdeaBank	-	-	-	-	-	-

Nowadays, the banks' approach to the functionality development of their applications is undoubtedly creative. The design of the client's card, for instance, is up to their choosing, and the banks are also working on developing options, which would satisfy individual needs of clients, in particular, the possibility of opening a card for a child with control over it, opportunities to collect funds for various needs (bank in Monobank or envelope in PrivatBank). The last option became extremely popular during the war to raise funds for the various needs of the military. In addition, we included the display of periodic analytics of the client's expenses and the possibility of purchasing domestic government bonds in the application as Additional services. The results according to all the stated criteria is shown in Table 5.

Table 5. Results of the examination of banking mobile applications by the variety of additional services.

Criteria / Mobile applications	Opening a card for a child	Changing the card's design	Analytics of the client's expenses	The ability to fundraise	The purchase of domestic government bonds
Monobank (Universal Bank)	+	+	+	+	+
Sense Bank	-	+	+	+	+
A-BANK	-	+	-	-	-
PrivatBank	-	-	-	+	-
PUMB	-	-	-	-	-
EKO-BANK (Ukrgazbank)	-	-	+	-	+
Ukrsibbank	-	-	+	-	-
Otp bank	-	-	-	-	+
Raiffeisen Bank	-	-	+	-	-
Oshchadbank	-	-	+	-	-
KredoBank	-	-	+	-	-
Bank Credit Agricole	-	-	-	-	-
IdeaBank	-	-	+	-	-

Therefore, the general level of digital comfort of the mobile applications offered by the analysed banks can be represented as shown in Table 6.

Table 6. Rating of banking mobile applications, number of points.

Mobile applications	A variety of credit and deposit operations	Accounts and cards management	Payments	The possibility of contactless handling of operations	Additional services	Total
Monobank (Universal Bank)	4	7	5	4	5	25
SenseBank	4	7	4	4	4	23
A-BANK	3	6	5	3	1	18
PrivatBank	3	7	5	2	1	18
PUMB	3	4	4	3	0	14
EKO-BANK (Ukrgazbank)	2	4	4	2	2	14
Raiffeisen Bank	3	2	5	2	1	13
Otp bank	1	5	2	2	1	11
IdeaBank	3	3	3	0	1	10
Ukrsibbank	2	3	2	0	1	8
KredoBank	2	3	2	0	1	8
Bank Credit Agricole	2	3	3	0	0	8
Oshchadbank	1	2	3	0	1	7

The top Ukrainian banks offering the highest level of digital convenience are Monobank (Universal Bank) and Sense Bank, with A-BANK and PrivatBank also scoring well. These banks provide their clients with mobile banking functionality rich in various options. Meanwhile, Ukrainian PUMB, EKO-BANK (Ukrgazbank), and partially foreign-owned Raiffeisen Bank fall in the middle of the ratings. The application capabilities of European banks are much weaker than the functionality of Ukrainian banks. This is demonstrated by the total point scores of non-resident banks in the rating, in particular Ukrsibbank, Otp bank, KredoBank, and Bank Credit Agricole were granted fewer points than competitors with Ukrainian capital.

Often, the application functions of various banks are strikingly different due to the distinct vectors of bank development. For example, Oshchadbank, with a low rank, was one of the first to allow customers to withdraw money from an ATM without a card, while managing the process in an app. In general, the applications that scored fewer points are sufficiently functional, as they provide the necessary payment operations. However, not all customers are satisfied only with the standard set of the application's functions, so the banks should consider improving it by examining the experience of competitors, implementing the studied benefits, and taking into account market requests, otherwise the client may get what he wants from a competing bank.

A good motivation for banks to enhance the user experience of their application is increasing revenues after the attraction of new customers. However, is there a relationship between the level of digital comfort of the mobile application and the bank's performance indicators? To answer this question, the situation with issued payment cards of these banks, credit and deposit activities, as well as profitability in general, should be analysed.

In general, the payment card market in Ukraine grew in 2023 compared to the previous year. The number of active payment cards increased by 12.6% - from 46.30 million cards to 52.12 million cards, in particular, in the fourth quarter it increased by 2.16 million cards, or by 4.3%.

The largest increase in the number of cards was observed namely among issuers such as private Ukrainian banks - by 29.2%, up to 11.30 million, while the number of cards of banks with foreign capital decreased by 15.7%, to 3.97 million.

This result is partially caused by the nationalization of Sense Bank, as a result of which the number of state banks' cards (excluding Privatbank) increased by 24.4% to 8.65 million in 2023 (Figure 3).

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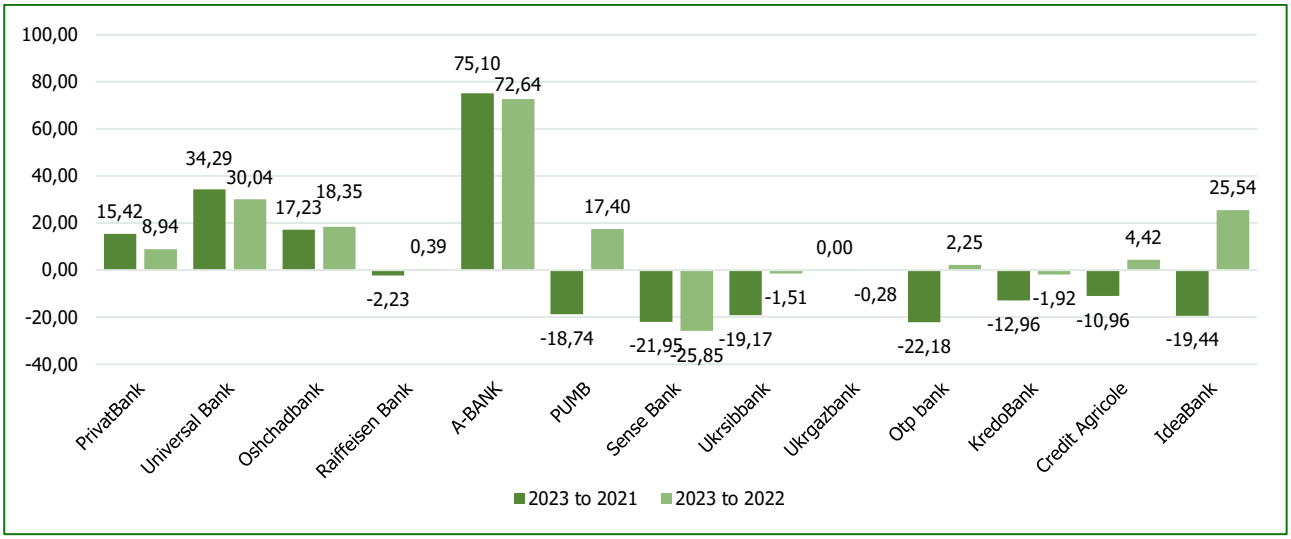

Figure 3. The growth of active payment cards in 2023 by analyzed banks. *(Source: calculated by the authors based on NBU data, National Bank of Ukraine, 2021-2023)*

As evident from the Figure 3, in 2023, JSC "Universal Bank" and JSC "A-BANK" saw the most significant increase in the number of active payment cards. On the other hand, banks such as PUMB, Sense Bank, Ukrsibbank, Otp Bank, KredoBank, Bank Credit Agricole, and IdeaBank reduced the amount of active payment cards compared to the pre-war 2021. Privat-Bank, the market leader in the quantity of payment cards, experienced a modest 8.9% increase to 28.20 million over the past year. The number of active payment cards in circulation at banks such as Raiffeisen Bank and Ukrgasbank has remained practically unchanged over the last two years.

As a result, over the past year, PrivatBank's market share decreased slightly - from 55.9% to 54.1%, although in general, state banks have virtually maintained their position: 70.7% of all active payment cards at the end of 2023 were issued by them, while a year earlier - 70.9% (Table 7).

Table 7. The share of banks in the payment card market (by the number of active payment cards), %. *(Source: calculated by the authors based on NBU data, National Bank of Ukraine, 2021-2024)*

Banks	01.01.2024	01.01.2023	01.01.2022	01.01.2021
PrivatBank	54.09	55.91	52.78	55.91
Universal Bank	15.35	13.30	12.88	7.85
Oshchadbank	14.20	13.51	13.64	15.06
Raiffeisen Bank	4.39	4.92	5.05	4.99
A-BANK	2.38	1.55	1.53	1.30
PUMB	2.00	1.92	2.77	2.50
Sense Bank	1.06	1.61	1.53	2.39
Ukrsibbank	1.80	2.06	2.51	3.28
Ukrgazbank	0.99	1.12	1.12	1.19
Otp bank	0.72	0.80	1.05	1.07
KredoBank	0.26	0.30	0.34	0.35
Bank Credit Agricole	0.34	0.37	0.43	0.45
IdeaBank	0.09	0.08	0.13	0.14
Total	97.68	97.44	95.75	96.48

As one can see, PrivatBank, along with Universal Bank and Oschadbank have covered a substantial share of the payment card market over the past four years (54.09%, 15.35% and 14.2%, respectively, in 2023).

Based on the analysis of banking applications and the growth indicators of payment cards issued by the analysed banks, it can be observed that banks with high levels of digital convenience in their operations (having well-developed application functionality) saw an increase in the number of active cards in 2023. This specifically applies to Universal Bank, A-BANK, and PrivatBank, which in 2023 increased the number of active payment cards by 30%, 72.6%, and 9%, respectively.

Banks with foreign capital, which, as already mentioned above, have conceded the functionality of their mobile applications to Ukrainian banks, generally reduced the number of their payment cards.

The exception to this pattern was Oschadbank, which holds a large share in this market and increased the number of payment cards by more than 18% in 2023, though it became an outsider in terms of digital comfort level. This is largely due to the fact that this state bank serves a large number of pension and social accounts by default and is intensively modernizing its activities.

The volumes of deposits of and loans to individuals demonstrate the leadership of two state banks in terms of these indicators - Privatbank and Oschadbank along with the private Universal Bank (Table 8).

Table 8. Indicators of credit and deposit activity of banks. *(Source: compiled by the authors based on NBU data, National Bank of Ukraine, 2019-2023)*

Bank	Deposits of individuals, UAH billion	Loans to individuals, UAH billion
PrivatBank	391.51	60.15
Oshchadbank	188.33	14.96
Ukrgazbank	33.59	5.29
Sense Bank	47.80	8.68
Raiffeisen Bank	59.92	4.31
Ukrsibbank	41.36	1.22
Bank Credit Agricole	17.86	2.86
Otp bank	25.87	2.95
KredoBank	16.02	2.79
PUMB	47.55	9.82
Universal Bank	65.03	27.93
A-BANK	15.68	7.91
IdeaBank	3.09	3.76

Compared to the pre-war year 2021, in 2022 and 2023, the analysed banks significantly increased the deposits of individuals. The largest increase can be observed in PrivatBank, Universal Bank, and A-Bank. Loans to individuals during the two years of the war generally decreased in most of the banks. Only Universal Bank, PrivatBank, and Oschadbank were able to increase this indicator substantially (Figure 4).

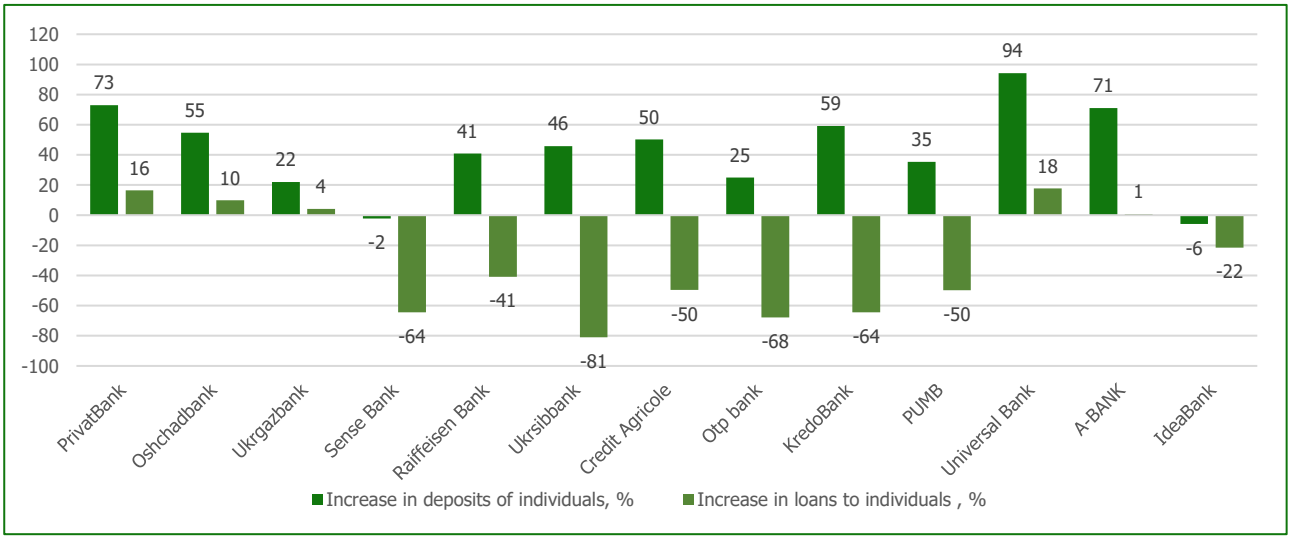

Figure 4. Increase in loans to and deposits of individuals in 2023 compared to 2021. *(Source: calculated by the authors based on NBU data, National Bank of Ukraine, 2021-2023)*

If tracing the share of deposits of individuals in the total amount of banks' deposits, it amounts to more than 50% in most state banks (except Ukrgazbank) and private banks (except PUMB). Regarding banks with foreign capital, the share of deposits of individuals in the total amount of the bank's deposits accounts for less than 50% (Table 9).

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Table 9. Dynamics of indicators of credit and deposit activity of banks. *(Source: calculated by the authors based on NBU data, National Bank of Ukraine, 2020-2023)*

Banks	The share of deposits of individuals in the total amount of the bank's deposits, %				The share of loans to individuals in the bank's loan portfolio, %			
	2020	2021	2022	2023	2020	2021	2022	2023
PrivatBank	73	70	72	71	74	74	61	63
Oshchadbank	68	64	72	63	14	18	14	17
Ukrgazbank	24	28	28	22	7	9	6	8
Sense Bank	59	55	70	50	38	40	31	26
Raiffeisen Bank	39	40	40	38	13	11	7	8
Ukrsibbank	41	43	39	35	22	23	11	10
Bank Credit Agricole	25	26	23	20	17	17	11	14
Otp bank	41	36	32	32	27	23	14	12
KredoBank	42	41	37	34	45	47	40	22
PUMB	47	44	42	38	38	37	23	19
Universal Bank	81	78	71	69	86	91	85	88
A-BANK	84	80	81	77	86	83	77	85
IdeaBank	80	79	77	75	100	100	98	96

Banks such as Idea Bank, Universal Bank, A-BANK, and PrivatBank significantly outstrip the other banks in terms of the "share of loans to individuals in the bank's loan portfolio" indicator.

Overall, the analysis of banks' credit and deposit activities demonstrates the absence of a clear linear relationship between the development of mobile banking and the results of credit and deposit activities; however, some tendencies can still be outlined. Thus, highly rated mobile applications such as Universal Bank, A-BANK and PrivatBank demonstrate positive trends in working with individuals in the context of both deposit and credit activities. Banks with foreign capital, whose mobile application functionality is significantly inferior to Ukrainian ones, have correspondingly worse results of credit and deposit activities for individuals. We believe such tendencies are not accidental and that multifunctional, user-friendly mobile applications entice individuals to purchase banking products.

It is also crucial to understand how the development of mobile banking affects the banks' financial results. The key performance indicators for banks are the return on capital (the ratio of net profit to capital) and the return on income (the ratio of net profit to the bank's revenues) (Capraru & Ihnatov, 2014). These indicators make it possible to assess the overall performance of the financial institution, taking into account the entire range of operations and services of the bank. The analysis of such indicators as return on capital and income in the section of the analysed banks shows that the operating profitability (return on income) was the highest in 2021 before the war and had an upward trend in all banks, and during the war years, it decreased significantly. The worst profitability indicator values were in the first year of the war (2022), when some banking institutions had a negative financial result (Figure 5).

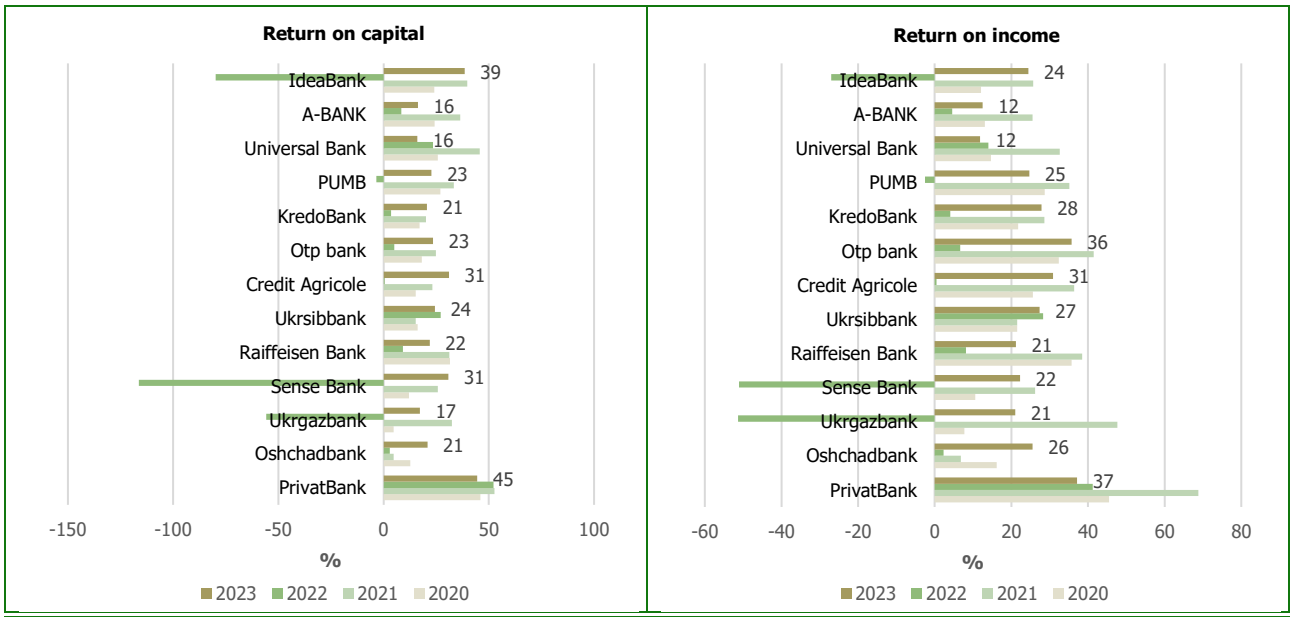

Figure 5. Profitability indicators for the analysed banks from 2020 to 2023. *(Source: calculated by the authors based on NBU data, National Bank of Ukraine, 2020-2023)*

No patterns, nor any connection between the development of mobile banking and the bank's profitability was detected. An exceptional level of digital comfort for customers does not ensure the high efficiency of the bank's operations, as for example in Universal Bank and A-bank, which demonstrated low profitability indicators of their operations, while having well-developed mobile banking. Banks with foreign capital, in particular KredoBank, Otp Bank, Bank Credit Agricole, and Ukrsibbank, conducted their activities quite effectively despite low ratings in terms of digital comfort.

The distribution of the analysed bank sample according to the level of digital comfort and operating profitability is presented in Figure 6, analysing which strategy traditional and/or digital) as well as the direction of activity (working with individuals and/or legal entities) was developed by the analysed banks.

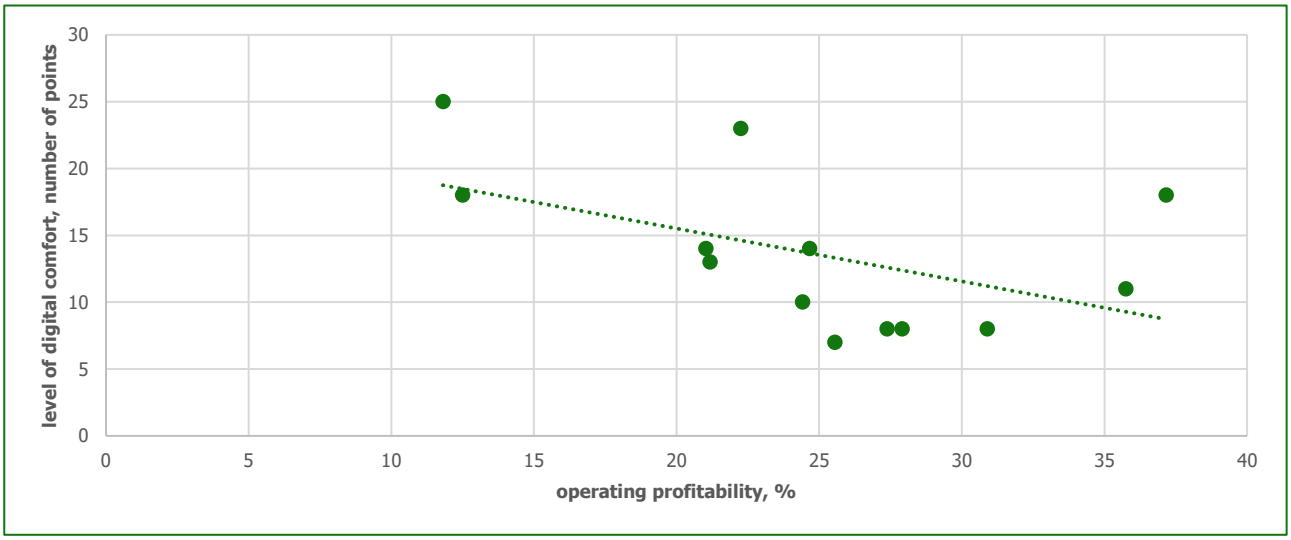

Figure 6. Distribution of banks according to the criteria of "operating profitability - level of digital comfort".

Although there is no linear relationship between the level of digital proficiency and the overall efficiency of the bank's operations, the analysis indicates that banks with well-developed mobile banking capabilities tend to attract a larger customer base among individuals. This is evident from the number of active payment cards issued by said banks, as well as the greater share of loans and deposits of individuals within the banks' loan and deposit portfolios. Therefore, banks should improve their mobile banking and continue to implement the latest digital technologies in their operations as part of implementing a digital strategy.

Developing a clear digital strategy should include reducing business risks, reducing costs, forming channels for attracting new customers, and ensuring integrated balance sheet management, etc. Modernization of applications based on artificial intelligence technologies, cloud computing, and other advanced technologies will allow banks to quickly create new products and services, improve the overall quality of management, and receive predictive data in real time, which contributes to increasing customer trust and loyalty.

According to KPMG forecasts, by 2030, all banks will become essentially invisible to customers and operate electronically under the guise of services, personal assistants, and various applications. The main changes in the banking industry by 2030, according to the conclusions of KPMG Global experts as part of the preparation of the report "The Future of Digital Banking", will include personalization using artificial intelligence, and interaction with customers will be carried out with the help of voice assistants and biometrics. Banks will create digital platforms through which a variety of services from third-party providers will be offered to the clients. The issue of users' confidence in the security of their data and its intended use will play a crucial role; cybersecurity systems will use artificial intelligence to protect data (KPMG, 2019).

With this in mind, it is reasonable to thoroughly analyse the potential sources of threats and opportunities for the business during the digital transformation process, objectively assess the bank's strengths and weaknesses, and based on this evaluation, develop an appropriate strategy as well as to justify the allocation of resources and investments in traditional and digital strategies.

The dynamic nature of the banking sector requires banks to adjust their operational strategies to meet current challenges and prevailing conditions in both the internal and external environments. In this context, the implementation of digital development strategies can prove to be effective, provided that an objective and comprehensive assessment of individual banks and the sector as a whole is conducted. In particular, it is appropriate to analyse the development of the banking

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sector and individual banking institutions using the tools of strategic analysis. Subsequently, the primary internal and external factors influencing banks using a SWOT analysis should be assessed (Table 10) (Elsworth, 2023).

Table 10. Analysis of the bank's internal environment.

Potential benefits (strengths of the bank) *Internal positive aspects of the bank's operations, which enable it to gain competitive advantages*	1. Adequate quality of the bank's management (strategic and tactical in various aspects of the bank's work: personnel, financial, technical). 2. Sufficient financial resources for the implementation of digital technologies in the bank. 3. A proper motivation of personnel in the development of their digital skills. 4. Innovative orientation of the banking business, availability of the latest digital banking products offered. 5. Convenience and stability of the bank's internal automated system.
Potential disadvantages (weaknesses of the bank) *Internal negative aspects of the bank's activity that prevent it from achieving its goals*	1. Lack of qualifications of management and personnel in the field of digital technologies and information systems. 2. Lack of financial resources for the implementation of digital projects. 3. Opportunities for digital transformation of business are limited by an unfavourable stage of the business life cycle. 4. Lack of motivational incentives for staff regarding innovative approaches to work, outflow of qualified employees with high levels of digital literacy. 5. The bank's inflexibility in adapting to rapid changes in the external digital environment and the unreliability of its digital services. 6. Poor coordination between the bank's structural divisions and the organization of the bank's internal digital processes.

The management's task, within the bank's internal environment development, is to maintain and enhance its strengths while minimizing the impact of weaknesses in the digitalization of business.

The external environment of the bank in terms of threats and opportunities should be evaluated taking into account a wide range of factors, which include not only the development of the information and digital environment. Of course, the possibilities of digital transformation of individual structures in the banking business are indirectly influenced by economic, political, and social factors, etc. We will focus on those factors that most directly determine the prospects of the digital development of banks. Table 11 presents the opportunities and threats of the bank's external environment in the context of digital business transformation.

Table 11. Analysis of the external environment of the bank.

Opportunities generated by the external environment	1. Growth in the number of active users of mobile devices and digital technologies in general. Expansion of the customer base, especially due to the emergence of young customers and customers with the highest levels of digital literacy. 2. Improving the quality and reach of Internet communication, along with the development of mobile technologies and network coverage, which is crucial for establishing rapid customer feedback and enhancing the speed and convenience of provided service; the capability of quick introduction of new banking products through various online platforms; access to banking operations for customers 24/7. 3. Improvement of the general level of digital technologies in the state. The ability to use artificial intelligence to personalize customer needs. 4. Wider possibilities of using digital technologies for the swift processing of large amounts of information, as well as the elimination of geographical restrictions for the expansion of banking activities. 5. Investments in digital infrastructure, a favourable investment climate in the country where the banking business operates. 6. Stability of the political, particularly military, situation in both the state and the world. 7. Liberal and comprehensible legislation that facilitates the development of the digital economy.
Threats generated by the external environment	1. Outdated legislation that should allow to ensure the appropriate level of transformation for banking business, information security, and digital security. Lack of legislation in the field of legal protection of the financial interests of citizens, intellectual property. 2. General underdevelopment of the banking sector. Clients' lack of trust in banking institutions and information technologies in the field of financial services. 3. Low level of digital infrastructure development in the state or its regions, slow Internet ubiquity. 4. Expanding opportunities for Internet fraud. Insufficient protection of personal customer data and frequent hacker (cyber) attacks. 5. Population poverty and a low level of digital literacy among people. 6. Growing unemployment in the banking business due to the robotization processes. 7. Unfavourable investment climate in the country, which limits investments in the development of digital infrastructure. 8. The unpredictability of political, in particular, military changes at the national and international levels. 9. Excessive dependence of banks on technology.

Based on the analysis of the bank's external and internal environment, institutions develop and implement the appropriate strategy for the digital transformation of their business (Figure 7).

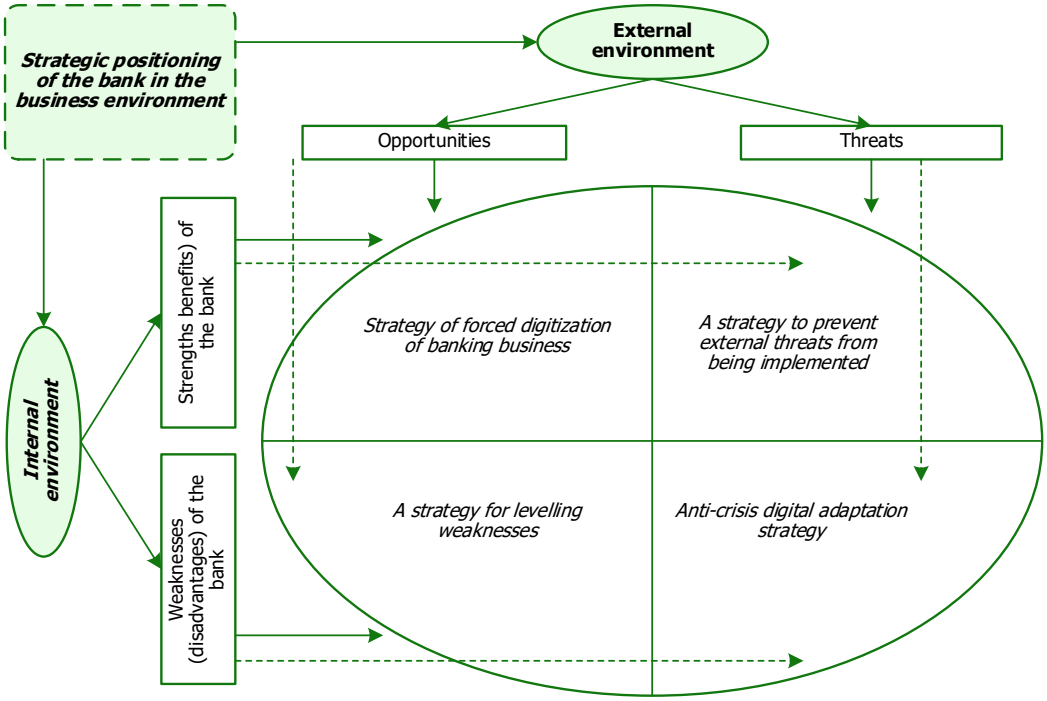

Figure 7. Matrix of banking business digitization strategies based on SWOT analysis of the bank's business environment.

It is advisable to implement the strategy of forced digitalization of the banking business in a situation where the strengths of the bank align with the available opportunities of the external environment. The basis of such a strategy is the maximum use of favourable factors of the external business environment with the advantages and strengths of the bank's work. In such a strategic position, the bank has ultimate opportunities for accelerated digitalization of business.

This strategy is based on the high efficiency and quality of the bank's management, an innovative approach to the creation of bank digital products, sufficient financial resources for digital transformations, the existing powerful motivation and system for developing digital competences of the staff, and well-established internal bank systems.

This strategy is implemented in a stable and predictable environment that is favourable for digital transformations. The bank can allocate its resources to expand its activities based on digital technologies and improve the operation of banking applications, make investments in long-term digitalization projects, thereby implementing all the advantages of operating in a digital economy and an economically and politically stable environment. Specifically, the legal field, investment climate, the level of the population’s digital literacy and inclusion, tendencies in the spread of the Internet, and network coverage are favourable; technologies for protecting confidential information are actively employed, etc. Banks can also use artificial intelligence and Big Data to their advantage.

Using the defined opportunities of the external environment in combination with the bank’s advantages ensures its sustainable digital development and high market positions.

In case of the combination of the mentioned external environment opportunities and the bank’s weaknesses, it is advisable to pursue the strategy for levelling the weaknesses, which is based on focusing the bank's efforts on capitalizing on the opportunities of the external environment and gradually transforming the weaknesses into strengths.

The strategy consists of minimizing the impact of the bank's weaknesses on the bank's digital transformation processes through the use of the external environment’s opportunities. To transform weaknesses into strengths, it is essential to focus on enhancing the digital skills and motivation of the staff, as well as automating internal management processes within the bank, particularly through improved software and technical support. At the same time, banks can engage external specialists in setting up digitalization processes, developing applications for clients, and training staff.

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The strategy to prevent external threats from being implemented is suitable for banks in the segment of the SWOT analysis matrix, where the bank's strengths and threats from the external environment are combined. This strategy involves the development of the bank's strengths in order to limit or mitigate the impact of external threats.

This strategy is implemented in the conditions of political, military, financial-economic crises, when the population is becoming poorer and businesses are reducing their scope of activities, during the deterioration of the banking services market conjuncture, unfavourable tendencies in the technological development of the economy, and social problems in society. In such circumstances, banks are compelled to prioritize safeguarding against threats from the external environment. In this situation, logical actions would involve maintaining and developing the bank's strengths and potential. It is important to recognize that although banks cannot eliminate all threats from the external environment, they can effectively mitigate their impact by leveraging the bank's strengths.

In addition to the development of the bank's strengths, this strategy should include the following measures: reorientation to new markets and opportunities; development of a system of measures to counter Internet fraud and cybercrimes; involvement of relevant specialists to monitor the legislative framework and regulatory policy in the banking sector, which may relate to limitations in the digitalization of business. It is expedient for banks to focus more on the development and implementation of digital technologies and innovative solutions that meet the complex requirements of the market, and at the same time consider the possibilities of business expansion to foreign markets with a more favourable environment for the development of digital banking business; various collaborations with foreign partner banks and banking groups.

Banks with a weak strategic position (for which, according to the results of the SWOT analysis, weaknesses are combined with functioning in a threatening external environment) are recommended to apply the anti-crisis digital adaptation strategy. Taking into account the positioning on the SWOT analysis matrix, the bank needs to eliminate weaknesses within the organization and protect against threats from the external environment. Note that said strategic position is the riskiest, and such a bank is also very vulnerable, effective client engagement due to increased digitalization is unlikely to be achieved. Typically, rapid and effective digitalization is not possible in such a strategic position. Therefore, management efforts should be focused on entering new markets and transforming weaknesses into strengths.

Thus, the use of tools for strategic analysis of the business environment, specifically SWOT analysis, can allow to effectively support management decisions during the bank's digital transformation process by enabling timely monitoring and forecasting of the economic and digital environment.

DISCUSSION

Our research is based on an empirical study and rating of mobile banking applications focusing on the possibilities and convenience of receiving banking services by clients in Ukraine. Advantages and disadvantages affecting the convenience and accessibility of using mobile applications in Ukraine were also analysed by Hasii O. et al. (2024), however, we considered a wider range of criteria for evaluating applications (credit and deposit operations, available payments and additional services in the application, as well as the possibility of contactless handling of operations). Also, in addition to user convenience, we investigated the impact of mobile banking on attracting customers and banks' profitability. Like Hasii O. et al. (2024), we proved that convenient mobile banking leads to an increase in the number of customers. However, according to the results of our research, this has no significant impact on the growth of banks' profitability.

Adiningtyas & Auliani (2024) conducted a study on the quality of mobile banking applications in Indonesia. The researchers analysed user feedback from Google Play Store and other feedback platforms and found that mobile banking applications in Indonesia are characterised by low results in terms of accessibility, simplicity, and data privacy. In our research, we focused on the empirical study of the possibilities of mobile applications of Ukrainian banks. Our findings indicate that mobile banking in Ukraine offers users a markedly superior level of digital comfort.

Convenience, trust in technology, and cybersecurity were identified as the main drivers for mobile banking in India, according to a study conducted by Basu et al. (2024). In contrast, our research placed relatively less emphasis on cybersecurity and privacy issues. However, we found that the convenience of the mobile application and availability of various services are significant factors influencing users' choice of a bank in Ukraine.

Zhou, Q. et al. (2021) highlighted the significance of interface design, system quality, security assurance, and service quality in enhancing customer loyalty to mobile banking. Our research, however, focuses solely on the importance of service quality in increasing customer loyalty. Additionally, similar to Zhou, Q. et al. (2021), we demonstrate that it allows for the expansion of the client base. It is important to note that the attractiveness of mobile app design is subjective, and we did not consider it in our study.

Conversely to our study, Lu (2024) centred the research on the data privacy of mobile banking application users. The findings indicate that the perceived benefits outweigh the perceived risks, prompting consumers to disclose personal data in exchange for convenient banking applications. While our study did not address the issue of data confidentiality, we may explore it further in future research.

A comprehensive and thought-provoking study conducted by Idrees & Ullah (2024) delves into the use of fintech services in Pakistan. The results revealed differences among users with varying levels of education and users of Islamic and traditional banking in terms of the expected productivity of banking applications. It was established that expected performance, ease of use, and social impact are key factors influencing the intention to use fintech services. We did not analyze the entire fintech industry, but only banking mobile services. However, we also proved the importance of the convenience and performance of mobile applications in choosing a bank. We also paid more attention to feedback and benefits for banks in improving mobile banking.

Throughout our research, we have paid significant emphasis on analysing the impact of the mobile banking development on the banks' financial performance. Wu et al. (2023) specifically studied the influence of mobile banking on the volume of deposits in the bank and found that the development of mobile banking increases the amount of deposits in banks. The impact of fintech lending on bank profitability was also investigated (Hodula, 2024). We investigated the impact of mobile banking on a wider range of banking services than deposits and loans. Our research has proven that improving mobile banking enhances customer loyalty and expands the customer base, but efficiency (profitability) is not directly affected.

Research is also directed towards the enhancement of mobile applications in general and the refinement of specific aspects of mobile banking (Seraj et al., 2024; Wang et al., 2024). Our research is aimed at comparing the mobile applications of banks in Ukraine; in particular, some advantages of Ukrainian banks compared to banks with foreign capital in Ukraine in the development of mobile banking have been proven.

CONCLUSIONS

The conducted analysis of the mobile banking development in Ukraine in terms of the country's most powerful banks as an element of the digitalization of banking activities demonstrated that Ukrainian banks (private and state-owned) offer their clients a higher level of digital comfort due to the variety of operations and opportunities in mobile banking applications compared to banks with foreign capital. These banks predominantly attract a larger number of clients among individuals, as evidenced by their share of the payment card market, both dynamically and statically, and the indicators of credit and deposit activity concerning individuals. There is no direct linear connection between the development of mobile banking of a banking institution and the overall efficiency of its activities, however, taking into account the general tendencies and forecasts of the banking services market development, banks need to form and implement strategies for the digital transformation of their business. We have proposed four strategies for the bank's digital development, in particular, the Strategy of forced digitalization of the banking business, the Strategy to prevent the external threats from being implemented, the Strategy for levelling weaknesses, and the Anti-crisis digital adaptation strategy, which were developed on the basis of a SWOT analysis of the bank's internal and external environment.

Digitalization of the banking system is an inevitable component in the progress and development of the financial sector in general. It creates new opportunities to enhance customer experience, efficiency, and innovation, which can be a prospect for further research. However, it also requires banks to prioritize cybersecurity and be prepared for change. With the right strategy and investment in innovation, banks establish themselves as leaders in the digital economy and provide advanced financial services to their customers.

ADDITIONAL INFORMATION

AUTHOR CONTRIBUTIONS

All authors have contributed equally.

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CONFLICT OF INTEREST

The Authors declare that there is no conflict of interest.

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ОЦІНКА РОЗВИТКУ МОБІЛЬНОГО БАНКІНГУ В КОНТЕКСТІ ЦИФРОВОЇ ТРАНСФОРМАЦІЇ БАНКІВСЬКОГО БІЗНЕСУ В УКРАЇНІ

Майбутнє банківського сектора пов'язане з подальшим розвитком конкуренції між банками, підвищенням ефективності банківської діяльності та посиленням інноваційних процесів на основі цифрових технологій. Мобільний банкінг є важливим елементом цифровізації банківської діяльності. Метою дослідження є вивчення рівня розвитку мобільного банкінгу в Україні та його впливу на ефективність діяльності банку, а також розробка стратегій цифрової трансформації банківського бізнесу.

Методологічною основою дослідження є загальнонаукові та математичні методи, зокрема коефіцієнтний аналіз, рейтингові методи, стратегічний аналіз, статистичні методи, а також матричні, табличні та графічні методи. Об'єктом дослідження є діяльність банків в Україні.

Було проведено рейтингування мобільних додатків 13 найпотужніших банків України за 28 критеріями, у результаті чого встановлено, що українські банки мають більш функціональні додатки порівняно з банками із залученням іноземного капіталу. Досліджено вплив мобільного банкінгу на показники ефективності банківської діяльності.

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Результати дослідження підтверджують позитивний вплив мобільного банкінгу на ефективність банківських операцій, пов'язаних із залученням клієнтів та обслуговуванням фізичних осіб. У межах SWOT-аналізу було визначено основні фактори, що сприяють упровадженню мобільного банкінгу в Україні. На основі проведеного SWOT-аналізу розроблено альтернативні стратегії подальшої цифрової трансформації банків для адаптації до нестабільних ринкових умов.

Ключові слова: банки, мобільний банкінг, банківський бізнес, цифровий комфорт, рейтинг банків, стратегії цифрової трансформації

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