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THE ROLE OF INTERNET BANKING AND MOBILE BANKING IN THE DEVELOPMENT OF A "CASHLESS SOCIETY"

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РОЛЬ ІНТЕРНЕТ-БАНКІНГУ ТА МОБІЛЬНОГО БАНКІНГУ У РОЗВИТКУ "CASHLESS SOCIETY"

In the current context of digital transformation in the financial sector, digital banking is a key tool for shaping a "cashless society." Accordingly, the aim of this article is to conduct a systematic study of the role of internet banking and mobile banking in the development of a cashless society in Ukraine, specifically to determine their impact on the use of cash in daily transactions, the predominance of electronic payments, and to assess their role in promoting cashless payments and expanding financial inclusion. The results of the study indicate that a "cashless society" should be considered a unique socio-economic model in which the majority of financial transactions are conducted electronically. A central role in bringing the modern socio-economic model closer to a cashless society is played by digital banking, namely mobile applications and internet banking, which provide remote access to financial services, enable payments, transfers, investments, and other operations 24/7, and integrate with other digital payment solutions such as Apple Pay, Google Pay, and QR payments. The transition to a cashless society ideally ensures the accurate reflection of the money supply in monetary statistics and creates conditions for transparency and control of financial flows. Key characteristics of such a society include the elimination of cash in daily transactions in favor of electronic payments, increased financial transparency of transactions, and fast and convenient access for the population to digital

financial tools. Accompanying features include minimal reliance on physical banking infrastructure for payments and the active use of digital banking as a key instrument for electronic financial operations. Thus, the transition to a cashless society not only promotes the efficiency and security of financial systems but also stimulates the development of new models of client interaction with banking services, enhancing accessibility, convenience, and digital inclusion for the population. At the same time, it is important to consider that macroeconomic instability, including fluctuations in the national currency, may slow the adoption of cashless payments and require additional mechanisms to mitigate currency risks, ensure the stability of digital payments, and maintain user trust.

У сучасних умовах цифрової трансформації фінансового сектору цифровий банкінг виступає ключовим інструментом формування "cashless society" (суспільства без готівки). Відтак, метою статті є комплексне дослідження ролі інтернет— та мобільного банкінгу у розвитку "cashless society" в Україні. Результати дослідження засвідчують, що "cashless society" слід розглядати як унікальну соціально-економічну модель, у межах якої більшість фінансових операцій здійснюється в електронному форматі. Доведено, що ключову роль у процесі трансформації сучасної соціально-економічної системи у напрямі моделі "cashless society" відіграє цифровий банкінг, зокрема мобільний та інтернет-банкінг. Вони забезпечують дистанційний доступ до фінансових послуг, надають змогу здійснювати платежі, перекази, інвестиційні та інші операції у режимі 24/7, а також інтегруються з цифровими платіжними рішеннями, такими як Apple Pay, Google Pay та QR-платежі. Констатовано, що перехід до "cashless society" в ідеалі має забезпечити точне відбиття грошової маси в монетарній статистиці та створити умови для прозорості та контролю фінансових потоків. Основними ознаками такого суспільства є відмова від використання готівки у щоденних розрахунках на користь електронних платежів, підвищення прозорості фінансових транзакцій, а також забезпечення швидкого й зручного доступу користувачів до цифрових фінансових інструментів. Додатковою ознакою є мінімальна залежність процесів розрахунків від фізичної банківської інфраструктури. Таким чином, перехід до "cashless society" не лише підвищуватиме ефективність і безпеку функціонування фінансових систем, а й стимулюватиме розвиток нових моделей взаємодії клієнтів із банківськими послугами, забезпечуючи вищий рівень доступності, зручності та цифрової інклюзії для населення. Водночас слід враховувати, що макроекономічна нестабільність, зокрема коливання курсу національної валюти, може стримувати темпи повного переходу до безготівкових розрахунків і вимагати додаткових механізмів захисту учасників фінансових відносин від валютних ризиків, а також забезпечення стабільності цифрових платежів і довіри користувачів.

Key words: transaction transparency; cash usage; daily payments; banking services; digital banking; cashless payments.

Ключові слова: прозорість транзакцій; використання готівки; щоденні розрахунки; банківські послуги; цифровий банкінг; безготівкові розрахунки.

PROBLEM STATEMENT

In the current context of digital transformation in the financial sector, digital banking is a key tool for shaping a "cashless society". For instance, the volume of banknotes in circulation in Ukraine shows a steady declining trend. As of April 1, 2025, there were 2.51 billion banknotes in circulation, totaling UAH 796.8 billion, which is 3.4% less compared to the same date in 2024 (2.70 billion banknotes totaling UAH 773.2 billion). The total amount of cash (banknotes and coins) decreased to UAH 805.1 billion, 2.1% lower than at the beginning of the year. At the same time, in 2024, 94.6% of payment card transactions were conducted cashlessly, with a significant portion taking place through digital service

channels, highlighting the role of digital banking in the development of cashless payments.

These trends are driven not only by the development of information and communication technologies, the widespread use of smartphones, and internet access, but also by the active adoption of internet banking and mobile banking as everyday financial tools for consumer transactions.

ANALYSIS OF RESEARCH AND PUBLICATIONS

Numerical studies by the European Central Bank (ECB), the World Bank, the International Monetary Fund (IMF), and the Bank for International Settlements (BIS) indicate that

Table 1. Specific features of internet banking and mobile banking that facilitate the implementation of the "cashless society" concept

Parameter	Internet banking	Mobile banking
Accessibility	Via a web browser on a desktop or laptop	Via a dedicated app on a smartphone or tablet
Interface	Designed for large screens; may be more complex	Optimized for small screens; simpler and faster access
Functionality	All major operations: transfers, payments, account management, investments	Basic and advanced operations: payments, transfers, QR payments, Apple/Google Pay, push notifications, instant alerts.
Mobility	Limited — requires a PC and internet access	Full — can operate anywhere and anytime
Integration with Other Services	Less integration with mobile digital payment platforms	Full integration with mobile payments, wallets, and QR systems

Source: compiled based on [2—4; 6].

bank web browsers and mobile applications are gradually displacing traditional service channels, providing clients with the ability to make payments, transfers, investments, and other transactions in real time, regardless of their location.

Research conducted by Ukrainian scholars such as Gasiy O., Skorba O., Roshko N. [2], Gerasym K.M., Marych M.H. [3], Dubyna M.V., and Sheremet O.M.[4] identifies internet banking and mobile banking as key tools for enhancing the convenience and accessibility of banking services for clients in Ukraine. These tools provide remote access to accounts and financial products, allow users to perform payments, transfers, and other banking operations at any time and from any location, and facilitate integration with digital payment platforms, including mobile wallets, QR payments, Apple Pay, and Google Pay.

At the same time, a problematic aspect of the existing research is the insufficient attention given to the specific role of the internet and mobile banking in accelerating the transition to a "cashless society" in Ukraine. There is a need for a systematic analysis of how digital service channels influence the financial behavior of different population groups—particularly residents of remote regions, low-income segments, and small businesses—as well as for identifying the factors that drive the widespread adoption of cashless payments.

Thus, research on the role of internet banking and mobile banking in the development of a cashless society is highly relevant, as it allows for a deeper understanding of their impact on economic processes, consumer behavior, and the prospects for forming a new digital financial ecosystem.

FORMULATION OF THE ARTICLE'S OBJECTIVES

Therefore, this article aims to conduct a systematic study of the role of internet banking and mobile banking in the development of a "cashless society".

THE PAPER MAIN BODY

According to the work of Bernardo Batiz Lazo, Thomas High, and David Stearns, presented in "Origins of the Modern Concept of a Cashless Society, 1950s—

1970s", the concept of a cashless society began to take shape in economic and business discussions in the United States and other developed countries during the 1950s and 1960s. Initially, this concept was developed primarily as a technical-organizational idea aimed at decreasing reliance on physical cash through the implementation of computer systems and electronic payment processing methods. Its development was guided by the scope of available electronic payment processing methods and the acceleration of financial transactions made possible by the emergence of the first computer systems in the banking sector. At this stage, the idea primarily focused on the technical and organizational aspects of automating banking processes, rather than on the complete elimination of cash as a socio-economic model.

Only from the early 1970s, and especially during the 1980s and 1990s, did the concept gradually transform into a form closer to its modern socio-economic interpretation, aimed at reducing cash usage (which began to be seen not merely as a technical necessity, but as a means to enhance the efficiency of financial systems and economic transparency [6]). This change was prompted by the emergence of bank payment cards, automated payment systems, and telecommunication technologies, enabling financial transactions to be conducted remotely without direct physical interaction with the bank.

Currently, in the scientific literature, the term "cashless society" is used to denote a socio-economic model in which the majority of financial transactions are conducted electronically, without the physical use of cash. The main idea is that, in this system, transactions between businesses and the public primarily occur through payment cards, electronic wallets, mobile applications, and digital payment platforms.. This creates a situation in which the actual money supply in the economy corresponds to that reflected in monetary statistics, and every transaction leaves a digital trace recorded in banking and financial reports.

In this context, the main features of a cashless society are the elimination of cash in everyday transactions, which primarily occurs through electronic payment services, mobile banking applications, and other digital platforms. A key advantage is that, unlike in a cash-dominated

Table 2. Analysis of the advantages of internet banking and mobile banking compared to traditional service channels

Characteristic	Traditional banking service channels	Mobile banking	Internet banking
Range of operations	Limited: cash withdrawals/deposits, balance checks, payments via ATM or teller	Full range: transfers, payment for goods and services, management of deposits and investments.	
Transaction speed	Medium; depends on physical visits and queues	Instant; transactions are executed online in real time.	Instant, but may depend on internet connection speed.
Control and notifications	Limited; requires in-person visits or phone calls to the bank	Continuous transaction monitoring, instant notifications (push, SMS, email).	Continuous monitoring, notifications via email or SMS.
Interaction with other services	Limited; mostly banking operations.	Integration with digital services	Limited integration with digital services, mostly through web portals.
User convenience	Need for physical movement, waiting in queues.	Convenience: all operations via smartphone or tablet without visiting a bank	High: operations via web browser, but tied to a PC or laptop.
Outcome	High proportion of cash payments.	Digitization of payments	

Source: compiled based on [2; 5—6].

economy, "off-the-record" money flows are practically impossible—all funds pass through official payment systems [3].

Accompanying features of a cashless society include increased financial transparency of transactions, fast and convenient access for the population to digital financial tools due to minimal reliance on physical banking infrastructure (such as branch networks, bank offices, ATMs, and self-service terminals) for conducting payments, and the active use of digital banking as a key instrument for electronic financial operations.

When considering the potential transition from our current socio-economic model to a cashless society, it is essential to acknowledge the views of Dubyna M.V. and Sheremet O.M. [4]. They argue that the promotion of digital banking is a vital factor in facilitating this change.

Digital banking gives the concept of a "cashless society" a new impetus thanks to its specific characteristics that create value for financial service consumers: high accessibility, convenience, functionality, mobility, and integration with other digital services (see Table 1).

Regarding the incentives that promote the transition to a "cashless society," a key factor is the expansion of digital banking functions and the significant enhancement of user capabilities compared to traditional service channels. In the classical model, clients were limited to physical branches for opening accounts, depositing or withdrawing cash, arranging loans or deposits, performing operations through ATMs and self-service terminals, or using telephone banking. Digital banking enables these and additional operations to be conducted remotely, at any time and from any location, significantly increasing the convenience, speed, and accessibility of financial services,

which directly encourages the widespread adoption of cashless payments [1—2].

Thanks to the advantages of internet banking and mobile banking compared to traditional service channels (see Table 2), financial operations are fully digitized and their transparency is enhanced: all transactions leave a digital trace and can be easily tracked. This significantly reduces the risk of shadow payments and contributes to anti-money laundering efforts. In addition, regulators receive timely and accurate data on cash flows, facilitating effective management of the money supply, interest rates, and inflation control [2].

In the traditional banking model, consumer behavior was characterized by regular visits to physical branches for transactions, a high reliance on cash, active use of ATMs for withdrawals, and limited access to financial products in remote regions. With the spread of internet banking and mobile banking, customer behavior has become more digitally oriented, mobile, and self-directed.

In practice, users are increasingly less likely to visit physical branches and ATMs, performing most operations through web browsers on computers or laptops and mobile apps on smartphones and tablets 24/7. As a result, the ATM network and self-service terminals decreased by approximately 1.2% from January to September 2025, totaling around 15,500 devices. A similar trend is observed for physical bank branches: at the beginning of 2025, their number was 5,011, which is 127 fewer than in the previous year. Compared to 2015, when over 13,000 branches were operating in Ukraine, the overall reduction in physical branches—almost threefold—highlights the shift toward remote digital service channels.

Table 3. Characteristics of digital consumer behavior in financial services

Key aspects of behavior	Consumer behavior features	Benefits of behavioral transformation
Shift to remote service channels	Clients are increasingly less likely to visit physical bank branches and limit ATM usage.*	Reduces consumers' reliance on traditional banking infrastructure, making financial operations more convenient and accessible.
Change in interaction model with financial products	Users gain instant access to accounts, transaction history, and financial analytics, enabling real-time expense planning and budget control.	Encourages more active financial management and fosters a culture of electronic payments.
Increased trust in electronic channels	Regular use of mobile banking increases clients' trust in cashless payments and remote financial services.	Acclimatizes users to secure digital transactions, lowering the psychological barrier to abandoning cash.
Expansion of financial inclusion	Mobile apps and web browsers provide access to financial services for residents of remote regions where physical bank branches are absent or limited.	Attracts new categories of clients to cashless operations.
Formation of new habits and behavioral patterns	Clients increasingly perform daily payments through web browsers and mobile services, forming stable electronic financial habits.	Consumers gradually shift to digital, integrated solutions that enable all operations to be conducted remotely.

Note

* As a result, account opening, transfers, payments for goods and services, and management of deposits and loans are carried out via mobile applications

Source: compiled based on [2; 7].

In this context, the transformation of consumer behavior in financial services has a clearly defined digital dimension, which can be presented through the following characteristics (see Table 3): preference for remote service channels; change in the model of interaction with financial products; increased trust in electronic channels; expansion of financial inclusion; formation of new habits and behavioral patterns. A more detailed outline of the characteristics of digital consumer behavior in financial services is provided in Table 3.

Thus, digital banking serves not only as a technological innovation but also as a key factor in transforming consumer financial behavior, promoting the active transition to a "cashless society." Mobile banking functions as an integration platform for other digital payment solutions, enabling interaction with mobile wallets, QR payments, and contactless payment systems, whereas internet banking provides universal access to banking services integrated with electronic payment services, online platforms, and systems that facilitate remote financial management and widespread use of electronic transactions.

Thanks to the compatibility of banking mobile applications with global platforms, users can make instant contactless payments using smartphones or smartwatches. For example, Apple Pay—a mobile payment and digital wallet from Apple—allows users to make contactless payments in stores, online, and within apps using an iPhone, iPad, or Apple Watch. A physical bank card is not required, as payments are processed through tokenized card data stored on the device. Similarly, Google Pay

provides Android users with the ability to make instant contactless payments in stores, online, and within apps without a physical card, with digital storage of data and transaction protection via multi-level authentication.

Furthermore, the development of QR payments and their integration into mobile banking apps creates a new segment of digital financial practices, which is particularly relevant for small and medium-sized enterprises as well as the retail and service sectors. It allows users to make payments without cards or cash, using only a mobile device, significantly increasing transaction convenience and encouraging the adoption of cashless payments in everyday operations.

Unlike mobile banking, internet banking typically functions as access to banking services through a web browser on a computer or laptop and is mostly integrated with electronic payment services and online platforms. For example, users can make payments via PayPal, LiqPay, or Portmone, or pay utilities, taxes, and fines through official payment gateways. Internet banking is also widely used by business clients, integrating with accounting and ERP systems (such as 1C, SAP, M.E.Doc) and investment platforms to automate financial processes.

Thus, digital banking acts as a kind of "core" of the digital financial ecosystem, enabling the integration of innovative payment solutions and services. Internet banking and mobile banking not only enhance user convenience and optimize access to financial services, but they also accelerate the transition to a "cashless society".

CONCLUSIONS

An analysis of scientific literature and the functioning of financial systems indicates that a "cashless society" should be understood as a unique socio-economic model in which the majority of financial transactions are conducted electronically. A central role in bringing the modern socio-economic model closer to a cashless society is played by digital banking, specifically mobile applications and internet banking, which provide remote access to financial services, enable payments, transfers, investments, and other operations 24/7, and integrate with other digital payment solutions such as Apple Pay, Google Pay, and QR payments.

The transition to a "cashless society" ideally ensures that the money supply is accurately reflected in monetary statistics and creates conditions for transparency and control of financial flows. Key characteristics of such a society include the elimination of cash in everyday transactions in favor of electronic payments, increased financial transparency of transactions, and fast and convenient access for the population to digital financial tools. Accompanying features include minimal reliance on physical banking infrastructure for payments and the active use of digital banking as a key instrument for electronic financial operations.

Thus, the transition to a cashless society not only promotes the efficiency and security of financial systems but also stimulates the development of new models of customer interaction with banking services, enhancing accessibility, convenience, and digital inclusion for the population. At the same time, it is important to consider that macroeconomic instability, including fluctuations in the national currency, may slow the adoption of cashless payments and require additional mechanisms to mitigate currency risks, ensure the stability of digital payments, and maintain user trust.

Future research prospects include evaluating the effectiveness of measures to promote cashless payments under conditions of macroeconomic instability and developing tools to increase users' trust in digital payments.

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