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QUALITY ASSESSMENT OF SELECTED MOBILE BANKING SERVICES IN THE USERS' OPINION – THE CASE OF SUŁĘCIN COUNTY

Key words: e-banking, mobile services, mobile banking, rural areas, Sułęcín county, Lubuskie, Poland

ABSTRACT. The study discusses the quality assessment of selected mobile banking services, verified on the users' opinion case. For the service research offered by banks operating in Sułęcín county in western Poland (Lubuskie), customers living in this territory were invited. The survey was conducted in 2024. In spatial scope, they concerned territory located mostly in rural areas: 5 municipalities, including 3 urban-rural municipalities and 2 rural municipalities in Sułęcín county. The survey was a pilot study. Using the diagnostic survey method, the opinions of more than 400 invites were collected. A random sampling was carried out, setting the minimum sample size as adequate for a statistical representative sample. A proprietary survey questionnaire was developed, consisting of 19 closed-ended questions and an informative metric. Responses were programmed according to a five-point Likert scale, and the results were aggregated and discussed. The study also used an individual in-depth interview technique, comparative and descriptive analysis. As a result, it was noted that the vast majority of Sułęcín county residents who are bank customers just use mobile banking services. The most common uses are so-called fast payments, "traditional" bank transfers and downloading information, that is, checking account balances. Popularity has proven to be a mirror of usability and quality of services. The high quality assessment of mobile banking services, according to residents surveyed, was determined primarily by the relative ease of access and use of mobile applications, speed of operation, convenience and flexibility of usage location, time savings, and trust, requiring confidence in the security of transactions. Despite the positive quality assessment of mobile services, it is worth noting the potential risks formulated as key recommendations. These mainly concern the reduction of technical problems in the mobile application use, as well as the constantly emerging cyber security threats.

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INTRODUCTION

The popularity and usefulness of e-banking is determined primarily by the possibility of its widespread use. This also applies to mobile banking. What does this mobility mean? First of all, the transfer of as many useful functions of “traditional” banking as possible to the digital, virtual, mobile space. Also, the basic convenience of e-banking, in excess of the non-necessity of personal contact between the customer and the bank, has become the flexibility of use, that is, the availability of banking services from anywhere in the world, at any time [Chaimaa et al. 2021]. Of course, a prerequisite for mobile banking is the availability of a communication platform (the Internet) and at least a minimum of knowledge and competence of the user, especially economic and computer (digital) [Orłowska and Błeszyńska 2020]. There is the inevitable question of the future of the sectoral market [Kusiak et al. 2020], as well as the determinants of integrated development from the perspective of finance [Słodowa-Hełpa 2013]. The development of innovative banking services does not simply eliminate the dilemmas and risks: financial security, institutional capacity of service providers and capital adequacy [Klus et al. 2024], cyber security, economic uncertainty [Wanat and Potkański 2011] and possible market exclusion, both of users and, so far prevalent in the market, cash transactions [Baader 2020, Kuchciak 2020, Manikowski 2023].

Mobility means: personalization, ubiquity and flexibility of use. Personalization involves providing services and applications tailored to individual customer preferences. Ubiquity means unlimited access to banking services anywhere without time constraints. Flexibility, in turn, means the ability to adapt to any possible conditions of use, as well as the ease of expanding the available functionalities of the mobile application [Tam and Oliveira 2017, Ashique and Rameshkumar 2024]. The personalization of mobile app functionality in the banks’ offerings has meant that none of these apps has an identical design. These applications usually provide the following services: monitoring of the account balance, execution of “traditional” transfers, online payments, reviewing transaction history, so-called BLIK payments [BLIK 2024], withdrawal of funds from an ATM through a mobile application, making transfers to a designated phone number, using a digital version of a debit or credit card, setting up and liquidating bank deposits, checking current exchange rates and making currency purchase transactions [Jagodzińska-Komar 2018, Stoika 2024, Szczepara 2024].

Besides BLIK immediate payments, the mobile banking offering also includes so-called “contactless” payments marked by NFC (Near-Field Communication). This technology based on Host Card Emulation (HCE). It allows banks to exchange transaction data without additional negotiations with mobile operators [Piotrowska 2024]. Yet another of the services typical of mobile banking is payments, carried out using Apple Pay (iOS smartphone users) or Google Pay (for users of mobile devices based on the Android operating system) [Borowska-Beszta et al. 2023, Sułek and Walaszek 2023]. According

to the financial sector, “mobile banking” is used by more than 21 million users in Poland (2023). Besides “ordinary” mobile banking users, the market includes special users called “mobile only” (nearly 15 million users in the same period) [Adamek and Solarz 2024, Barbrich and Noçoń 2024].

Among the most popular platforms enabling mobile banking are dedicated applications provided by banks: PKO BP (IKO app), PEKAO SA (PeoPay app) and Bank Millenium (unbranded app). Based on the analysis of app functionality, the most popular banking mobile services used by users were identified. The main groups of mobile services include, first of all, information services, transactional services – payment, credit, deposit and currency operations, insurance, telecommunications and other services. The catalog of available services therefore includes those activities that traditional banking customers also perform [Sulek, Walaszek 2023]. Of course, the increase in the availability of mobile banking services opens up not only new opportunities, but new cyber security risks [Ślazińska-Kluczek 2016, Skowysz and Krot 2018, Zarańska and Zborowski 2018, Padaszyńska and Pawlak 2020, Klus et al. 2022].

Mobile communications, as well as mobile finance, represent a great development opportunity for rural residents [Paszkowski et al. 2018]. Technology makes it possible to reduce the distance between an institution and a potential customer. It should be recalled that even in the 21st century, digital exclusion, and thus “banking exclusion”, remains one of the threats to civilization of mankind [Kuchciak 2020]. Indeed, local leadership [Potkański et al. 2011], promoted in spite of many barriers [Wanat and Potkański 2011], should counteract these threats with a mission of social responsibility. It is the residents and entrepreneurs acting locally who take local government initiatives, building relationships: inter-municipal, inter-sectoral and inter-institutional [Chudobiecki et al. 2016, Potkański et al. 2016]. This also applies to development policy [Potkański and Wanat 2017], especially for local communities living in rural areas [Paszkowski et al. 2019]. It is areas such as Sulęcín county that seem to be most at risk of exclusion: economic, financial, digital and social. Are these concerns real?

MATERIAL AND METHODS

The aim of the study was the quality assessment of selected mobile banking services from the customers’ perspective. The research was carried out on the case of users’ opinions, residents of Sulęcín county in western Poland, in Lubuskie. This specific territorial scope was chosen because of the mix of attributes of a rural, heavily forested area, as well as a border region with a high rate of entrepreneurship and economic activity [GUS 2024]. The subject of the study was a relatively separate subsector of e-banking, called mobile banking. This area includes banking services provided regardless of the user’s location, made available through dedicated applications using the mobile internet. Thus, both the

level of interest of the selected research group in mobile services and the availability and usability of these services for customers were identified. It also considered, by examining the banking activities of rural residents, their situation in relation to the financial and digital exclusion risk. With reference to the study's objective, the methodological basis was formulated, the sources of data and the scope of the scientific study were indicated: temporal, spatial, subject and object (thematic).

In the temporal scope, the study was conducted in the first half of 2024. Primary data was obtained in the form of respondents' opinions, recorded in individual survey questionnaires. For the diagnostic survey scenario, secondary data published by institutions of public statistics, government, local government and industry, updated, depending on the information specificity, were also used for 2022 and 2023 [GUS, BDL 2024].

In the spatial scope, the study was carried out in the Sulęcín county. It is a municipal unit located in the northwestern part of Lubuskie, in western Poland. The county has an area of almost 1,200 square kilometers, which is 0.38% of the total area of Poland and 8.42% of the area of Lubuskie Voivodeship. It is made up of 5 municipalities, including 3 urban-rural municipalities (Sulęcín, Torzym, Lubniewice) and two rural municipalities (Krzyszczycze and Słóńsk). Within the district's borders there are 97 towns, 3 of which have the status of cities [Starostwo Powiatowe w Sulęcínie 2024].

In the subject scope, residents of Sulęcín county, that is, a community of nearly 33.8 thousand in 2022, were invited to the survey (see Table 1). The proportion of men and women was more or less equal in this population, although it varied in age groups, with a significant predominance of men under 40. Sulęcín is the county with the smallest population in Lubuskie Voivodeship, which is unfortunately steadily declining. The population situation, including among young people willing to accept technological innovations, is uncertain. Instead, it takes the form of a progressive demographic catastrophe [Popek and Wanat 2016]. There is no hope for generational replacement under these conditions.

Given the aim of the study, the researchers' focus was on those residents of Sulęcín county who have the legal capacity to use banking services (aged 15 and older). Therefore, for research using the diagnostic survey method, from an age-restricted population, a minimum sample size was determined using Steczkowski's method [Steczkowski 1995]. The following assumptions were made for the calculations: a fraction size of 0.5, a maximum error of 5% and a significance level of 95%. For the specified population (28,260 residents), the minimum sample size was 379 respondents.

The object (thematic) scope of the study was to assess the quality of selected mobile banking services – on the case of customer opinions. The survey was conducted on a randomly selected group of residents of Sulęcín county, using a traditional technique on the basis of a printed questionnaire. The basic tool of the study was an author's survey questionnaire. It formulated 19 questions. In addition to metrics, respondents were asked

Table 1. Selected demographics data of Sulęcín county in the years 2020-2022

Demographic data	Years		
	2020	2021	2022
County population [thousands]	34.39	34.00	33.77
Population per 1 km ²	29.2	28.9	28.7
Live births	334	255	249
Deaths	478	513	395
Population growth	-144	-258	-146
Population of Sulęcín county by age groups:			
Pre-productive	5,739	5,648	5,511
Produktive	21,542	21,159	20,948
Post-productive	7,111	7,195	7,312
Potential bank customers	28,653	28,354	28,260

Source: own elaboration based on [Starostwo Powiatowe w Sulęcínie 2024]

about the usability and quality of selected mobile banking services, covering the following groups: information services, transactional services (including payment, credit, deposit and currency services), as well as ancillary services, including insurance, telecommunications and others [Gruszka 2024].

Responses were aggregated into three sections, including: (1) questions about the interest level in mobile banking services, (2) questions about the determinants of the usability of banking mobile applications, and (3) questions about the quality of mobile banking, reflecting at the same time the degree of user satisfaction with selected services. The survey questionnaires were collected, the results obtained were aggregated and analysed, and the most important conclusions and recommendations were formulated on this basis.

RESULTS AND DISCUSSION

The survey included 405 respondents, which is, according to the statistical assumptions made, a representative sample. Of course, the authors are aware that basing only on quantitative opinions does not give a complete view of the phenomenon under study. Therefore, wherever possible, the survey questionnaire was additionally verified in the formula of individual in-depth interview. The collected primary data were comparatively examined against the background of secondary statistical data: sectoral and municipal. The most important results are summarized in this section.

Brief characteristics of the respondents were compiled based on the information collected in the survey metrics. The following data were taken into account: gender (48.9% of women and 51.1% of men), age (more than 40% aged 15-24), place of residence (the most, 33.1% from Sulęcín community), education (secondary education dominated – 48.9%), employment form (interestingly, 48.9% indicated “other” employment form, which is a feature of residents of border regions) and marital status (50% so-called “singles”, 44.9% married).

The starting point in the quality assessment of mobile banking services, was the identification of those users who use traditional banking. The simplest measure of this factor is the structure of bank account holders in Sulęcín county (89.9% of respondents). The results are summarized in Table 2. It was noted that young people definitely dominate among bank account users: 42% are customers aged 15-34. This also explains the potential openness of respondents to banking innovation. Demand for innovative services is then verified by the local supply market. This verification, although without determining the exact reasons, is actually illustrated by the structure of bank account users at specific financial institutions (banks).

Table 2. Respondents’ structure of bank account users (including mobile) by gender and age

Respondents	Bank account users [%]		Total [%]
	yes / of which % mobile users	no	
User structure by gender			
Women	44.7 / 42.9	4.2	48.9
Men	45.2 / 43.4	5.9	51.1
Total	89.9 / 86.3	10.1	100.0
User structure by age			
15-24 years	31.4 / 33.0	8.4	39.8
25-34 years	10.6 / 11.5	0.3	10.9
35-44 years	15.8 / 17.0	0.3	16.1
45-54 years	13.3 / 14.0	0.0	13.3
55-64 years	8.9 / 7.4	0.3	9.1
65 years and older	9.9 / 3.4	1.0	10.9
Total	89.9 / 86.3	10.1	100.0

Source: own elaboration based on [Gruszka 2024]

Analysing the data in Table 3, it was noted that 3% of respondents use the services of more than one bank. The most frequently selected banks in Sulęcín county include: Santander Bank Polska S.A. (17% of respondents) and Gospodarczy Bank Spółdzielczy (almost 15%). The remaining respondents chose, at a similar level, the largest operating banks, primarily those with mobile banking services in their offerings. This is a fairly typical distribution, characterizing local preferences in rural areas.

On the background of the “local banking market” in the Sulęcín county, those respondents who reported using mobile banking were identified (86.3% of indications). The curious thing is that in the largest group of the youngest customers (15-24 years old), “only and as many as” 33% use mobile banking (Table 2). The “mobile users” are dominated by residents of the largest community of Sulęcín (33% of respondents), with a medium education (45.3%).

The first qualitative information turned out to be the frequency of use of mobile banking services by Sulęcín county residents. It turned out that very often, meaning daily or at least once a week, mobile services are used by 79.3% of respondents. According to respondents, the vast majority of them use mobile banking at home (65%). Popular places for making mobile payments also include shopping (48%) and workplaces (26%).

Table 3. Local supply market for banking services in Sulęcín county (2024)

Bank	Bank customers	
	survey indications	% of indications
Bank Millennium S.A.	34	8.2
Bank Pekao S.A.	58	13.9
BNP Paribas Bank Polska S.A.	23	5.5
Credit Agricole Bank Polska S.A.	27	6.5
GBS Bank (Gospodarczy Bank Spółdzielczy)	62	14.9
ING Bank Śląski SA	47	11.3
mBank S.A.	31	7.4
PKO Bank Polski S.A.	42	10.1
Santander Bank Polska S.A.	71	17.0
Other bank	22	5.3
Total indications	417	100.0

Source: own elaboration based on [Gruszka 2024]

Sulęcín county residents are also eager to use mobile app banking services on vacation (36% of respondents) [Gruszka 2024]. So what determines the relatively high popularity of mobile banking services? Probably their functionality. Seeking confirmation, residents were asked which functions offered by banking mobile apps they use most readily.

Respondents identified the following mobile banking services as determining their usefulness: BLIK immediate payments (60% respondents), performing traditional transfers in the mobile app (54%) and informative checking of account balances (56%). Slightly less common were: payments for online purchases (47% respondents), transfers addressed to a phone number (35%), mobile “ATM” withdrawals (32%) and verification of bank transaction history (26%). It was also asked why the residents of Sulęcín county choose mobile banking in particular. It turned out (for as many as 60% respondents) that convenience is the main deciding factor (some say: “laziness is the engine of economic development”), followed immediately by time savings (56%) [Gruszka 2024]. The usability is also convinced by the possibility of avoiding an additional visit to the bank’s headquarters (41% respondents), 24/7 access to services and the associated ability to regularly monitor personal finances (40%). From the perspective of service quality assessment, it was noted the relatively low share of respondents’ indications of the ease of use of mobile applications (only 34%) [Gruszka 2024]. Far less attention was paid to the speed of transaction processing. This is understandable, since this parameter is of more interest to the transfer recipients, not to the transaction orderers.

Transposing the rationale for the choice of banking mobile applications into the quality of mobile services, the performance evaluation of selected functions, used by respondents, was verified. The obtained information was recorded according to the Likert scale and aggregated. Responses of “rather yes,” “hard to say” and “rather no” do not necessarily convince of quality, so it was assumed that its more adequate measure reflects, if anything, categorical choices. It turned out that the following mobile services received the most positive “definitely yes” ratings: ease of use (62% respondents), permanent availability of services (54%), ability to make transfers, including immediate ones (53%), speed of operations (49%), user-friendly interface of the mobile application (39%), and security of transactions (38%) [Gruszka 2024].

Trying to outline a “model” for mobile banking in Sulęcín county, it would be based on the “pillars” indicated by respondents: ease of access to mobile services and convenience of using a mobile application (60% of respondents), as well as time savings (56%). These pillars were identified as the leading ones, as residents overwhelmingly (more than 88%), consider banking mobile applications safe. Moreover, the majority of respondents are satisfied with mobile banking services (more than 97%). Above all, they appreciated the ease of access and speed of the application. This is understandable, as mobile saves time compared to traditional banking. Were the risks pointed out? Yes. Respondents counted

among them primarily technical problems of application operation (44% respondents) and cyber security problems of mobile transactions (37%) [Gruszka 2024].

Recapitulating the results discussion, it should be noted that the popularity of innovative financial services, including mobile banking, is due to their accessibility and usability. It is these factors that respondents chose as “sufficient measures” of quality assessment. The practical usability of the mobile services offered is also based on the market environment [Wanat et al. 2019]. Therefore, it depends on real cooperation: institutions (banking sector) and users of the banking system (individual customers, entrepreneurs, farmers, foresters, seniors), followed by cooperation. Innovative activities of banks should also be based on the experience of other institutions, municipalities, local businesses, taking as a model a constantly updated set of best practices [Wanat and Lis 2009, Potkański et al. 2016, Mikołajczak et al. 2020]. On the strength of this cooperation depends not only the quality of modern banking services, but also their security. Therefore, active cooperation of all e-commerce stakeholders based on trust should be recommended [Skowysz and Krot 2018]. What will determine the quality of cooperation among market participants? First, the social and legal responsibility of the banking sector for the security of mobile financial transactions [Szpringer 2021]. Key qualitative factors also include knowledge, awareness of the behaviour and individual decisions of mobile banking users, and others, cumulatively determining their effectiveness.

CONCLUSIONS AND RECOMMENDATIONS

The study discussed the issue of the quality of mobile banking services, expressed both in the level of interest and satisfaction, as well as the accessibility and usability of these services for customers. As a result of the opinion analysis of a selected group of Sulęcín County residents in western Poland, it was found that:

1. The degree of banking services use in the surveyed territory can be assessed as relatively high. Respondents mainly use corporate and cooperative banking.
2. It turned out that the popularity of banking mobile services applies to the vast majority of all bank customers. Interest in mobile banking does not depend on the gender of users. However, mobile activity reflects intergenerational variation.
3. It was noted that if residents use mobile banking, they declare regular use: most every day, and others at least several times a week. The most popular place to use mobile banking was at home. It is likely that the security criterion has decided that mobile banking is actually “home banking”.
4. Within the available banking mobile services, the most common choices were to make quick and immediate payments, primarily through BLIK, as well as making “traditional” transfers and checking account balances.

5. Identifying the key criteria for quality assessment of mobile banking services, based on the respondents' opinion and state of the art analysis, the focus was on: the motivation for choosing mobile banking, the security of services, the customer satisfaction level, including its determinants: accessibility, speed of operation and time savings.

Respondents ranked ease of access to services and convenience of use, as well as time savings as the primary criteria for choosing mobile banking. Moreover, users consider banking mobile applications to be secure. The majority of respondents are satisfied with mobile banking services, praising especially the ease of access and speed of the application. Some interviewees also noted the importance of coaching initiatives specifically aimed at farmers, foresters, small entrepreneurs, countering their banking exclusion [Nawrot and Wanat 2022].

Mobile services have changed the bank's image as an institution, according to rural residents. However, it is difficult, based on the pilot study alone, to assess the extent to which the bank remains a public trust institution, or whether it is becoming simply one of many, an operator of transactions. Perhaps the return of trust in institutions will be determined by their ability to cooperate, even to cooptation [Skowysz and Krot 2018], that is, to be active for the benefit of local communities and the economic development of small homelands [Potkański et al. 2011]. The symbiosis of technological progress and innovative banking services should be based on the institutional development experience, respecting local government and non-governmental entities created by particular people, local leaders, and the best practices they promote [Wanat and Lis 2009, Potkański et al. 2016]. It seems that the future of banking mobile services also depends on the quality of co-opetition in e-finance [Mikołajczak et al. 2020].

Curiously, respondents did not pay attention to the potential possibility of reducing or eliminating cash payments altogether, possibly leading to *cash exclusion* [Manikowski 2023]. Of course, the residents of Sulęcín county were not explicitly asked about this. It seems that for the time being the use of cash is so obvious to rural residents that they do not take this threat seriously. So they are using mobile banking without fear. From the perspective of banks and financial institutions, the popularity of mobile services, especially in rural areas, seems to indicate the further automation of banking and even its virtualization. This will reduce the cost of providing services. However, this is only an institutional, supply-side perspective. Will this not, in effect, be a market development barrier, if only in the example of banking products dedicated to specific individuals? Won't it lead to other forms of economic and social exclusion not yet fully realized? These issues should become the subject of separate studies.

The quality of residents' lives cannot be determined only by professional, even mobile banking, but by the ability to take economic responsibility, this taking care of home,

not just “home banking”. Thus, at least a minimum of knowledge and responsibility is needed, that is, economics implemented in the practice of life not so much and not only-instrumental, but integrally. The case of Sulęcín county therefore shows that, despite its regional specificity (an urban-rural area with high forest cover), the promotion of entrepreneurship and banking activities (including mobile ones) can become a direction of Polish development policy, counteracting possible social exclusion.

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OCENA JAKOŚCI WYBRANYCH USŁUG BANKOWOŚCI MOBILNEJ W OPINII UŻYTKOWNIKÓW – PRZYKŁAD POWIATU SULĘCIŃSKIEGO

Słowa kluczowe: bankowość elektroniczna, usługi mobilne, bankowość mobilna,
|obszary wiejskie, powiat sulęciński, Sulęcín, Lubuskie, Polska

ABSTRAKT. W pracy podjęto próbę oceny jakości wybranych usług bankowości mobilnej, weryfikowanej na przykładzie opinii użytkowników. Do badania usług bankowych zaproszono klientów mieszkających w powiecie sulęcińskim w zachodniej Polsce (Lubuskie). Badania przeprowadzono w roku 2024. W zakresie przestrzennym dotyczyły 5 gmin położonych w większości na obszarach wiejskich, w tym 3 gmin miejsko-wiejskich oraz 2 gmin wiejskich. Badanie miało charakter pilotażowy. Stosując metodę sondażu diagnostycznego, zebrano opinie ponad 400 osób zaproszonych do badania. Dokonano losowego doboru próby, wyznaczając jej minimalną wielkość jako adekwatną dla statystycznej próby reprezentacyjnej. Opracowano autorski kwestionariusz ankiety, złożony z 19 pytań zamkniętych oraz metryki informacyjnej. Odpowiedzi zaprogramowano według pięcio-stopniowej skali Likerta, zaś uzyskane wyniki zagregowano i poddano dyskusji. Wykorzystano również analizę porównawczą i deskryptywną. W rezultacie zauważono, że zdecydowana większość mieszkańców powiatu sulęcińskiego, będąca klientami banków, korzysta właśnie z usług bankowości mobilnej. Najczęściej wykonywano tak zwane szybkie płatności, „tradycyjne” przelewy bankowe oraz pobierano informacje, zwłaszcza sprawdzając saldo. Popularność okazała się odzwierciedleniem użyteczności i jakości usług. O wysokiej ocenie jakości bankowych usług mobilnych w opinii ankietowanych zdecydowały: relatywna łatwość obsługi aplikacji mobilnych, szybkość działania, wygoda związana z dowolnym miejscem użytkowania, oszczędność czasu oraz zaufanie, wymagające pewności bezpieczeństwa transakcji. Mimo pozytywnej oceny jakości usług mobilnych, zwrócono także uwagę na potencjalne zagrożenia, sformułowane jako kluczowe rekomendacje. Dotyczą one minimalizacji technicznych problemów użytkowania aplikacji, a także eliminacji zagrożeń cyberbezpieczeństwa.

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