

WILL THE DEVELOPMENT OF CASHLESS PAYMENT TECHNOLOGIES INCREASE THE FINANCIAL EXCLUSION OF SENIOR CITIZENS?

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ABSTRACT

The aim of this article is to assess the attitudes of senior citizens towards cashless transactions (with a particular emphasis on mobile banking). The literature on the subject presents the dissemination of non-cash payment strategies as an opportunity to reduce the problem of exclusion. Moreover, the researchers who focus on the topic of financial exclusion diagnose self-exclusion within this social strata who do not use modern technologies for current financial activities, additionally pointing to the significant impact of a group of factors: demographic, economic, psychological and social. The considerations are based on a query of the subject literature and an analysis of selected secondary studies. It is noted that there are huge psychological barriers conditioned by a person's lifestyle. Moreover, the continuous development of and technological progress in the banking sector hinders certain types of banking and deepens the level of financial exclusion of the oldest generation. Increased life expectancy means that the banking sector should not continue to ignore those who are aged 60+. It is necessary to focus CSR strategy, educational activities and product offers on marginalised groups, even if it may seem to be unprofitable for many banking strategies.

Key words: modern technologies, financial exclusion, senior citizens, cashless payments

JEL codes: D18, J14, L86, O31

INTRODUCTION

The phenomenon of financial exclusion, understood as the exclusion of individuals or households from using financial services in the realm of consumption, production and social cohesion has for a decade been a significant economic and social problem [Maciejasz-Świątkiewicz 2013, Polasik and Piotrowska 2014]. In light of the banking sector's increased use of new financial technologies (FinTech) and the introduction of new methods and tools, the author looks at people

who are physically and mentally separated from modern technologies, and who, as the basis of the fight against financial exclusion, constitute the main social group that financial sector support programmes seek to assist.

The study aims to assess the attitudes of senior citizens to cashless transactions (with particular emphasis on mobile banking)¹. An analysis of the results of secondary research allowed the author to formulate the following hypothesis (H1): modern technologies in non-cash payments deepen the level of financial

¹ Research conducted on the Polish market in the years 2010–2019 [Niemczyk 2016, ZBP 2019] indicates the growing popularity of online banking among senior citizens. The author deliberately omits this thread in modern technologies because the strategies of commercial banks are now focused on the development of mobile services.

exclusion among seniors. In order to achieve the research goal, literature studies and analyses of available empirical studies were used.

The theoretical considerations are based on the theory by Schumpeter [1960], who claimed that economic development is a combination of three factors: (1) the existence of creative entrepreneurs, (2) the introduction of innovations to the market, and (3) the use of debt financing. Also, the theoretical aspect of financial and social isolation in the paper refers to social inequalities as a category of deficiency. Rousseau [1954] defined the inequalities conditioned by nature and the inequalities created and perpetuated by people. A person making only rational decisions was regarded as a “utopian figure”. The accuracy and rationality of decisions was undermined by the economists Keynes and Mill. In the opinion of these English economists, the notion of an economic man did not result from his rationality, which is based on his amount of knowledge, but from his life experience. Mill rightly pointed out that economic theories do not take account of all factors in the description of economic reality [Grobler 2006].

The structure of the article is subordinated to the research objective. The assessment of the activity of senior citizens and their attitudes to modern technologies will be analysed on the basis of the theory of behavioural economics, which uses the achievements of psychology and other social sciences to explain economic phenomena.

LITERATURE REVIEW

The financial sector is facing changes resulting from technological developments. The implementation of advanced IT systems, automatic economic events and data collection and processing is an opportunity for the banking sector to improve profitability and customer relations [Niemczyk 2016, Zalewska-Bochenko 2017]. The manifestation of the new phenomenon in “new combinations”, at a later stage in “enterprises”, results in the creation of innovations. Importantly, the implementation of innovation by an entrepreneur is a privilege of a rather narrow group of people with “higher than normal virtues of mind and will, and their behaviour will influence social history, will allow

shaping a new model of life and new value systems” [Glapiński 2012, p. 4].

The new model of life, and different life expectations, is causing changes in banking. Market observations give the impression that the availability of products and a wide range of banking services is not always the same for all social groups. According to Rousseau, the progress of civilization and the development of human reason have violated the equality between human beings and, consequently, contributed to the perpetuation of injustice. The development of new technology in the banking sector does not make adjustments for the age or (dis)ability of the recipient. Llewellyn [2009] examines innovations in banking based on the institutional paradigm, incomplete information, and the particular importance of risk management in the economy. Over the past decade, finance issues regarding senior citizens in have been analysed in the Polish literature, by, among others, the following authors: Czechowska [2013], Solarz [2014], Kłobuchowska [2016], Oziębło [2016], Czerwiński [2016a, 2016b, 2019], Olejniczak [2018]. Literature studies lead to the conclusion that the challenges of modern banking are not favourable to older generations and more attention to this issue is required. Bank decisions regarding the permanent updating of products and services are based on market needs and consumer behaviour models [Badowska and Rogala 2015]. The understanding of the mechanisms driving people to make financial decisions [Maison 2017] is based on an analysis of economic and, above all, psychological factors [Shefrin and Thaler 1988, Bąbel and Ostaszewski 2008].

The ageing population requires particular attention from the banking sector to groups at risk of financial exclusion: the elderly, the disabled and the youngest generation under 25 years of age. Since the first mention of financial exclusion [Leyshon and Thrift 1995], new views on this problem have been defined. Most often, the description of financial exclusion has focused on the causes and consequences [cf. Smyczek and Matysiewicz 2014], while at the same time proposing solutions to minimize financial exclusion [Donovan and Palmer 1999, Kempson et al. 2000, Sinclair 2001]. The problem has been identified within two aspects: narrow and broad [Anderloni 2007]. The narrow approach emphasises the lack of access to ba-

sic services for the individual. These services have an impact on home finances and security [Iwanicz-Drozowska 2008]. The broad approach addresses the difficulties faced by individuals with low social status, low income, no bank account and no access to financial services, such as credit or non-cash payments.

The Polish market, in terms of its contribution to literature, is rich in short articles signalling the problem and a few compact items describing the phenomenon from the perspective of the Polish financial market participant [Solarz 2012, Maciejasz-Świątkiewicz 2013]. The literature on the subject develops the multi-threaded nature of the problem [Alińska 2011, Fila 2013, Warchlewska 2015, 2020, Frączek 2017, Polasik et al. 2018], which does not allow precise definition due to the introduction of interchangeable terms in the literature².

A critical analysis of available sources still does not exhaust the subject of the determinants of the problem. Apart from demand, supply, and social and psychological factors, the phenomenon should also be analysed taking into account the time factor. Moreover, an in-depth analysis of the primary and secondary nature of the problem of financial exclusion would make it possible to define the moment when financial exclusion and inclusion are conditioned [Kuchciak et al. 2014]. The identified research gaps are already the subject of the author's research.

METHODOLOGY

The paper uses a method of critical analysis of the literature regarding a diagnosis of the phenomenon of financial exclusion, and an analysis of review works that concern the subject of modern technologies in non-cash payments and the position of senior citizens in the world of finance. The author analyzes the results of selected empirical research on the attitudes and activity of seniors in the banking sector in the subject matter. The study is a starting point for further comparative research and a prelude to a bibliometric analysis of the problem of financial exclusion.

THE IDEA OF CASHLESS TRADING IN POLAND

Non-cash transactions are construed as the transfer of funds collected in bank accounts through the use of payment instruments. In practice, such transactions should include: credit transfer, direct debit, payment card or cheque transactions [Iwańczuk-Kaliska 2011]. The Non-Cash Trading Strategy for 2014–2020 [Koalicja na rzecz Obrotu Bezgotówkowego i Mikropłatności 2013] sets out key areas which allowed decision-makers to focus their attention on significant problems related to the promotion of non-cash trading. In accordance with the assumptions of the Programme, it is necessary to ensure the security and effectiveness of electronic payment instruments, broaden their scope, and develop innovative payment instruments [Koalicja na rzecz Obrotu Bezgotówkowego i Mikropłatności 2013, Warchlewska 2015].

During the Programme evaluation, the Polish Bank Association (Związek Banków Polskich), which flags the activities of the Coalition for Non-Cash and Micro-Payments (Koalicja na rzecz Obrotu Bezgotówkowego i Mikropłatności), presented four barriers to non-cash transactions [ZBP 2018] (the table).

The first three objectives are of a quantitative nature, with Objectives 1 and 2 focusing on the development of cashless transactions in extensive terms (increasing the number of individuals, entities and offices using non-cash transactions), and Objective 3 focusing on the promotion of non-cash transactions in intensive terms (increasing the frequency of using cashless transactions by existing users). Objective 4 is of a qualitative nature (increasing the innovativeness of cashless payment instruments while maintaining or increasing the level of security of their functions) [ZBP 2018]. It needs to be stressed that the most popular forms of non-cash transactions in Poland include payment cards (debit, credit, charge and prepaid) and electronic transfers. One of the latest proposals for non-cash payments is BLIK [Polish payment standard], i.e. the possibility to make transactions using a smartphone.

² In the literature, terminological interpretations of the same phenomenon, with different emphasis on its causes and depth, include, among others, the following notions: financial exclusion, financial inclusion, insolvency, shortage, insufficient insolvency.

Table. Barriers and objectives 2018–2020

	Barriers	Objectives
1	Too low level of banking saturation and cashless payment instruments	Increase in the number of individuals, entities and offices using cashless payment instruments
2	Too narrow scope of accepting cashless payment instruments	Increase in the number of entities and offices accepting cashless payment instruments
3	Too rare use of cashless payment instruments	Increasing the use of cashless payment instruments
4	Still existing areas and situations of lack of use of cashless payment instruments, resulting from low innovation of existing solutions or relatively low level of perceived security of these instruments	Providing support to the development of innovative, cashless payment instruments while maintaining or enhancing their operational security

Source: Author’s own elaboration based on ZBP [2018].

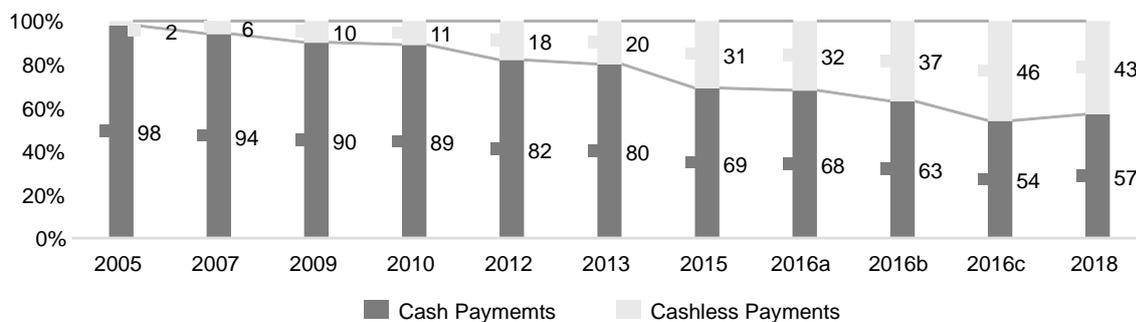


Fig. 1. Share of cash and cashless payments in the number of retail payments in Poland in the period of 2005–2018

Source: NBP [2019].

The development of non-cash payments is confirmed by data from the National Bank of Poland (Narodowy Bank Polski) [NBP 2019]. In the last dozen or so years (Fig. 1), the share of cash in the total number of payments has significantly decreased, and the importance of non-cash payments is systematically growing. In the case of cash payments, a decrease from 98% in 2005 to 57% in 2018 was recorded. The number of non-cash transactions has steadily increased from 2% in 2005 to 43% in 2018. Most transactions in 2018 were made using payment cards.

MODERN TECHNOLOGIES IN BANKING

In light of contemporary finance and a practical view of banking regulations, banking innovations have been categorized according to their effects. There are positive (sustainable, appropriate) and negative (harmful,

inappropriate) innovations. Llewellyn [2009, cf. Korzenik, 2017] interprets banking innovation in the light of the institutional paradigm, where innovation should help banks to better fulfill their role as service providers, such as bank intermediaries offering loans and deposits. The use of standardised products and services aimed at all consumers is dangerous, as product mismatch with the buyer or even “pushing” products into a package introduces negative emotions that are not conducive to long-term relationships.

Banks, in the paradigm of incomplete information, may reduce market imperfections (information asymmetry and opportunistic behaviour in the economy). Obtaining processed information on external and internal factors should be considered crucial for the development needs of the economy. All information requirements, monitoring or risk analyses should be regarded as positive innovations. Innovative solutions

will be perceived as harmful if they hamper the development of undertakings, caused by e.g. excessive banking secrecy. Successfully dealing with uncertainty and risk implies that banks have a cost advantage over other entities in the area of risk management. To this end, banks shall target their activities at offers aimed at reducing economic and financial risk and shall seek the best solutions based on cost reduction. Innovative orientation towards more efficient and effective actions in terms of costs should be considered positive, provided that they do not omit certain groups of the bank's stakeholders, e.g. through aggressive sale or mismatch between products and services and impairments of the buyer [Wrońska 2016, Korenik 2017, Wright 2019].

The most important trends based on modern technology solutions in banking include [Capgemini 2019]: digital banks – these are fully virtual treasury units, without branches and physical infrastructure; the voice assistant – a voice technology that meets the need for fast and easily accessible data; robots and robotics – these are automated internet platforms. Automation in response to a consumer question is progressing towards the elimination of the human factor. Biometrics is the most popular form of identity verification, acceptance of cashless transactions and ATM service worldwide. In banking practice, finger vein biometrics, palm vein biometrics, facial biometrics, finger print biometrics, voice biometrics, iris/eye biometrics and handwritten signatures are most often used. The introduction of biometrics to the banking services market aims to eliminate the risk of incorrect identity verification or customer identification. Moreover, it eliminates the risk of unauthorized access to the account. Theoretically, it is a solution aimed at improving the living conditions of senior citizens. Using biometric solutions helps overcome all disfunctions [Czechowski et al. 2015]. Artificial intelligence – is the use of advanced data analysis to help banks collect customer information to improve and expand their services. The main objective of artificial intelligence is to match the product to the needs of the customer and to prevent abuse.

Noteworthy are the activities in the area of mobile education of seniors who are known as students of the University of the Third Age [Korenik 2017]. It is on the initiative of seniors themselves that classes are held with the use of smartphones, which indicates that seniors are aware of the fact that they live in the age of technology and they are increasingly willing to undertake computer education. According to demographer P. Szukalski, seniors in Poland are victims of ageism, i.e. depreciating and discriminating against people because of their advanced age. It is therefore necessary to make the banking profession aware of the fact that old age is only a phase in life and does not deserve the current lack of attention of the banking sector in mobile education and modern technologies. On the contrary, old age should be seen as another creative phase of people's lives [Jankowska 2014].

SENIORS IN THE FINANCIAL WORLD – AN OUTLINE OF THE PROBLEM

The age of 60, and more and more often of 65 years, is used as a metric threshold for old age. Demographic data indicate that the number of people aged 65 and over will continue to increase over the next 20 years. In addition, life expectancy will gradually increase, contributing to an increase in both the number and percentage of the elderly population in the overall population figures of Poland.

Seniors are one of the groups of recipients of banking sector services. According to data of Polish Bank Association [ZBP 2019], the number of pensioners and disability pensioners in 2017 amounted to 8.9 million, of whom 6.5 million were pensioners. Older people are becoming increasingly positive about banking services, particularly in terms of the traditional personal account (95%). A Polish Bank Association study [2018] shows that seniors are becoming active participants in the payment card market (52%). Every fourth respondent sees an insufficient product offer addressed only at the elderly, and on the other hand only 6% of respondents see online banking as a problem. It should be pointed out that the Polish Bank Association survey³ is optimistic

³ Sample $N = 529$ individuals aged 60–69. Survey conducted by the CAWI method by the Pollster Research Institute.

one, according to which as many as 94% of respondents have access to the Internet and declare that they use it actively, with 68% of them doing so at least once a week. They use Internet banking to make transfers. The greater the technological advancement, the lower the percentage of seniors declaring their activity. More than a half, or as much as 56%, of the respondents, do not use such facilities. Rare use of mobile applications results from the complexity of the service and the lack of smartphone skills [ZBP 2020]. Traditional seniors are characterised by a search for stability and a routine that guarantees a sense of security, which is impossible to achieve with the strategy of introducing modern banking services (Fig. 2).

In addition, the high percentage of respondents active on the Internet creates a need to raise awareness of cyber threats. 55% of respondents assessed their knowledge of safe use of the Internet as average (Fig. 3) [ZBP 2019].

Research on financial education and inclusion presents the concept of the Silver Economy [Kuchciak et al., 2014] on the basis of respondents in the age group 50+. The research refers to the younger age group because the concept of the silver economy is addressed at people over 45. Financial needs are

correlated with the motives of the recipients. The Lindqvista model [1981] depicts the basic motives behind household cash management. The model is used, among other things, to model consumer behaviour on different markets and assess their liquidity. As regards seniors, the leading motive is to maintain liquidity and make simple financial transactions using a transfer order or using a payment card for cash and cashless transactions. Subsequently, seniors aim to provide financial resources for unforeseen events and to secure themselves financially for their retirement years. The results of the survey [Kuchciak et al. 2014] divide seniors into traditional and modern ones, with the former being predominant. The perception of old age in relation to traditional seniors is a physical feature, while as regards modern seniors, it is a state of mind. The starting point for the construction of a banking offer for senior citizens should be their attitude to novelties.

When it comes to seniors with a modern approach, new experiences and challenges allow for high financial activity, also in the area of modern technologies. A study [cf. Kuchciak et al. 2014] confirms that average financial literacy is decreasing by about 1% each year after reaching the age of 60. With age, cognitive

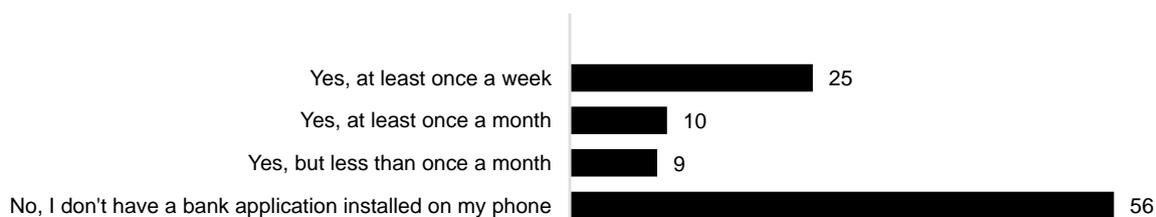


Fig. 2. Using of mobile banking among seniors (%)

Source: ZBP [2019].

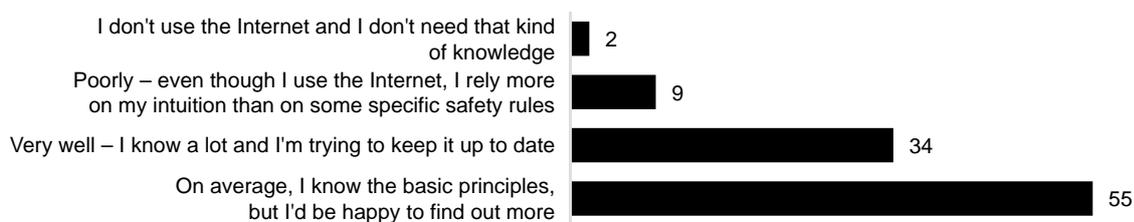


Fig. 3. Self-assessment of the level of knowledge about cyber security (%)

Source: ZBP [2019].

skills deteriorate and incorrect financial decisions increase. In addition, the problem-solving skills required to make financial decisions decrease with age. The gradual withdrawal of offers of bank accounts for senior citizens does not have a positive impact on the image of and trust in banks. The maximum procedural simplifications for senior citizens were a bargaining chip aimed at winning over this target group. Numerous reports and studies by the National Bank of Poland⁴ on the attitudes of Poles towards non-cash transactions indicate that card payments are becoming more and more popular within the 55–64 age group. Only in part is the group covered by the analysis in this study [NBP 2017].

Quantitative analyses indicate that people over 65 years of age are still at risk of total or partial financial exclusion. Moreover, the factors determining cashless activity include demographic and psychological factors, including: self-assessment of financial knowledge, trust in banks, cash cult and openness to new technologies. Having no account is connected with age, education and low prevalence rates of having a bank account in the respondent's environment. Significantly, banking saturation within the population, which has risen to 83% in the last 7 years, was due to other than psychological reasons.

Seniors' dilemmas often concern the basic banking services: not enough time to clarify details of an operation with bank staff, failing to understand the specialist banking language, anxiety and fear of asking questions, hearing, speech and movement impairments that disrupt conversation, being attended to in noisy rooms, too much information in a single voice message or written word, lack of specialised staff to deal with people with impairments, and too much emphasis on making sales, without giving basic financial education [Świecka et al. 2019].

The development of modern technologies introduces an element of anxiety among senior citizens about digital threats, identity theft, fraud, unauthorized transactions or harassment via the Internet. Protection with strong passwords and specialized software is a basic precaution. Moreover, it may cause social exclusion

[Szewczyk-Jarocka 2019]. This is a problem that prevents or significantly impedes the legitimate exercise of social roles by an individual or group, such as the use of public goods and social infrastructure, the accumulation of resources and the generation of income in a dignified way. Consequently, if these inequalities are manifested by a total lack of access to the financial services market and a situation in which an entity may use the offer of financial products and services, but on worse terms than others, financial exclusion may occur. It is pointed out that among social groups threatened by financial exclusion, in addition to the poor, the unemployed, the poorly educated, the disabled, the rural population, and women and young people, there are also elderly people.

DISCUSSION

The phenomenon of financial exclusion is not homogeneous and can take different forms depending on the causes that influence its occurrence. The literature sources present the problem by area (payment, savings, credit, investment, insurance, pension) and by type (graphic, availability, conditions, price, marketing or self-exclusion). A diagnosis of financial exclusion is affected by a combination of demand, supply, and social and psychological factors. The situation where a consumer decides to opt out of financial services on his own is referred to as self-exclusion. There is no doubt that discussions on exclusion from access to banking products and services can also be undertaken in the context of digital exclusion (this is not, however, the subject of this study). It is worthwhile to discuss and further consider whether self-exclusion from the banking sector results from life, cultural or other beliefs, or whether it is not preceded by external factors imposed by financial institutions. Nationwide educational activities and regional initiatives can block the secondary exclusion of parts of society, and financial education can affect those who are already excluded. More knowledge and learning through experience gives a greater sense of freedom in the financial world, which seniors still lack.

⁴ The research concerned the attitudes of Poles towards non-cash transactions towards finance. The research has been conducted in national trials since 2009 [Maison 2017].

CONCLUSIONS

Although the banking sector can defend itself by saying that it does not block access to modern payment solutions, it does not do enough to popularise modern solutions among the elderly. The increasing average life expectancy does not bode well for the banking sector's abandonment of the current 60+ age group at such a significant level [Iwański and Warchlewska 2020]. This leads to the conclusion that too much emphasis on online banking education will not allow seniors to fully prepare for financial activity in the digital world. The pace of process and product changes, combined with the self-education of seniors, has no chance of success. The hypothesis (H1) is therefore that modern technologies in non-cash payments deepen the level of financial exclusion among seniors. In the author's opinion, banks should focus their CSR strategies on marginalised groups, although this may perhaps be seen as unprofitable for many banking strategies.

The author is aware that this subject has not been fully exhausted. It poses a further research area for the banking sector with the aim of creating educational tools targeted mainly at senior citizens by using the method of personalization of offers in relation to perception, analysis of individual customer needs or assigning a bank advisor to a specific employee empowered to provide services to senior citizens. Moreover, the author points to a research gap in the description of the phenomenon of financial exclusion, wondering whether a client who does not have a bank account (the payment area), but has a credit card (the credit area) and vice versa, can be considered an excluded entity. The depth of the phenomenon requires further exploration.

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CZY ROZWÓJ TECHNOLOGII W PŁATNOŚCIACH BEZGOTÓWKOWYCH ZWIĘKSZY SKALĘ WYKLUCZENIA FINANSOWEGO SENIORÓW?

STRESZCZENIE

Celem artykułu jest ocena stosunku seniorów do korzystania z transakcji bezgotówkowych (ze szczególnym uwzględnieniem bankowości mobilnej). Piśmiennictwo w przedmiotowym temacie przedstawia upowszechnienie strategii płatności bezgotówkowych jako szansę na minimalizację problemu. Ponadto autorzy, którzy swoje badania koncentrują na temacie wykluczenia finansowego, diagnozują samowykluczenie wśród osób niekorzystujących z nowoczesnych technologii do bieżących rozliczeń, wskazując dodatkowo na istotny wpływ grupy czynników: demograficznych, ekonomicznych, psychologicznych oraz społecznych. Rozważania oparte są na kwerendzie literatury przedmiotu oraz analizie wybranych badań wtórnych. Należy zauważyć ogromne bariery psychologiczne uwarunkowane stylem życia danej osoby. Co więcej, nieustanny rozwój i postęp technologiczny w sektorze bankowym hamują „ubankowienie” w obszarze płatniczym (nowoczesne technologie) oraz zwiększają skalę wykluczenia finansowego najstarszej generacji. Sektor bankowy nie powinien nadal ignorować osób w wieku powyżej 60 lat, gdyż tzw. oczekiwana długość życia ludzi (potencjalnych klientów banku) się zwiększa. Konieczne jest ukierunkowanie strategii CSR, działań edukacyjnych oraz oferty produktowej na grupy marginalizowane, które w wielu strategiach bankowych są klasyfikowane jako nierentowne.

Słowa kluczowe: nowoczesne technologie, wykluczenie finansowe, seniorzy, płatności bezgotówkowe