

## Selected aspects of financial behaviours of women from rural areas on the payment cards market

### Wybrane aspekty zachowań finansowych kobiet z obszarów wiejskich na rynku kart płatniczych

Monika Szafrńska

University of Agriculture in Krakow, Faculty of Agriculture and Economics

**Abstract.** The objective of the work is the identification and characterisation of selected payment behaviours of women from rural areas as well as the evaluation of the degree of using bank cards by consumers. The basic aim of a data and conclusions analysis was primary information coming from own research. A method of a personal interview was employed in the study which had a character of regional research. The spatial scope of the research covered the area of Małopolska region. The research was done in person in 2014 on a group of 200 respondents. Apart from primary sources there were used also secondary sources including Polish and foreign subject literature, NBP reports as well as mass statistics data. In order to evaluate the level of payment cards used by women from rural areas, the funnel indicator of the level of using payment cards was used ( $WL_{SWKP}$ ). In determining a correlation between the factor  $WL_{SWKP}$  and selected respondents' characteristics, the non-parametric test was employed *chi-square* ( $\chi^2$ ). As results from the study already carried out, the factors which determine consumers' behaviours from rural areas on the cards market are age as well as a primary source of income. Cards were most rarely in the possession of the elderly (level 0 of the funnel indicator – 24%). The main motivation of not having the card was lack of such a need. Women from rural areas who have the highest level of using debit cards (level 4 of  $WL_{SWKP}$ ), however, are people aged 36–55 and active professionally. These were consumers who preferred non-cash turnover. Women having a payment card (76%) most often had one card at their disposal and it was a debit card option. Almost 5% of people who have a card do not use its function. The vast majority of people were respondents who made use of the card several times a week.

**Keywords:** payment behaviours • payment card • women from rural areas

**Streszczenie.** Celem pracy jest identyfikacja i charakterystyka wybranych zachowań płatniczych kobiet z obszarów wiejskich oraz ocena stopnia korzystania z kart bankowych

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Corresponding author – Adres do korespondencji: Dr inż. Monika Szafrńska, Zakład Ekonomiki i Finansów Przedsiębiorstw, Wydział Rolniczo-Ekonomiczny, Uniwersytet Rolniczy w Krakowie, al. Mickiewicza 21, 31-120 Kraków; e-mail: [m.szafranska@ur.krakow.pl](mailto:m.szafranska@ur.krakow.pl)

przez mieszkanki wsi. Podstawowym źródłem danych do analizy i wnioskowania były informacje pierwotne pochodzące z badań własnych. W badaniach wykorzystano technikę wywiadu osobistego. Miały one charakter badań regionalnych i objęły teren województwa małopolskiego. Badania przeprowadzono osobiście w 2014 r. na grupie 200 respondentek. Poza źródłami pierwotnymi wykorzystano również źródła wtórne: polską i zagraniczną literaturę przedmiotu, raporty Narodowego Banku Polskiego oraz dane statystyki masowej. Do oceny stopnia korzystania z kart bankowych przez kobiety z obszarów wiejskich zastosowano wskaźnik lejkowy stopnia wykorzystania kart płatniczych ( $WL_{SWKP}$ ). Do ustalenia zależności pomiędzy wskaźnikiem  $WL_{SWKP}$  a wybranymi cechami respondentek zastosowano nieparametryczny test *chi*-kwadrat ( $\chi^2$ ). Jak wynika z przeprowadzonych badań, czynnikami determinującymi zachowania konsumentek z obszarów wiejskich na rynku kart płatniczych są wiek oraz główne źródło dochodu. Posiadaczami kart najrzadziej były osoby najstarsze, osoby pobierające rentę/emeryturę oraz otrzymujące dochód z pozostałych źródeł (poziom 0 wskaźnika lejkowego – 24%). Główną przyczyną nieposiadania karty był brak takiej potrzeby. Z kolei do grupy kobiet z obszarów wiejskich w najwyższym stopniu wykorzystujących karty płatnicze (poziom 4  $WL_{SWKP}$ ) należały osoby w wieku 36–55 lat i pracujące zawodowo. Ta grupa stanowiła prawie 40% badanych. Były to konsumentki, które preferowały obrót bezgotówkowy. Posiadaczki karty płatniczej (76%) najczęściej dysponowały jedną kartą i była to karta o charakterze debetowym. Prawie 5% osób posiadających kartę nie korzysta z jej funkcji. Dominującą grupą osób były respondentki, które korzystały z karty kilka razy w tygodniu.

**Słowa kluczowe:** zachowania płatnicze • karta płatnicza • kobiety z obszarów wiejskich

## Introduction

In the current market conditions, consumers' behaviours on the financial market has become an issue that is very interesting from the theoretical point of view and very important from the practical point of view. Its increased importance on the financial products market results from strong development of this economy sector, more and more extensive market offer of financial institutions, as well as civilisation and cultural changes on the consumers' side (Smyczek, 2007).

The first attempt to explain the mechanisms of the behaviours of the consumers purchasing goods and services in order to fulfil their needs was the theory of utility formulated by H.H. Gossen (Begg, Fischer, Dornbusch, 1994). An important contributor to the development of consumers' behaviours theory was also V. Pareto, the author of the preference and choice theory, which was later elaborated by J.R. Hicks. Hicks intended to create a consumers' behaviours theory based only on objective elements and rejecting utility issues. Both the authors of the utility theory and the authors of the preference and choice theory assumed the existence of *homo oeconomicus*, a person who follows only economic premises, therefore the usefulness of these theories for explaining consumers' behaviours turned out to be limited. G. Katona further modified the conventional theory of consumers' behaviours, stating that the most important factor shaping these behaviours are psychical (Katona, 1975). Following this author, it is commonly assumed that the consumers on the market act with limited rationality. The concept of limited rationality was adopted by behavioural economists, who use

cognitive psychology to determine real behaviours of the consumers and the factors that affect the choices and decisions of an individual (Kata, 2013).

In a developed market economy, the behaviours on the market for payment services occupy an important place among diverse areas of consumers' behaviours. They are linked with consumer's choices manifesting themselves in searching, purchasing, using, and evaluating particular financial services related with making payments (Simon, Smith, West, 2010; Smyczek, 2012).

In Poland, cash transactions dominate. The reasons of this phenomenon are the fact that people are used to cash, their relatively low incomes, low banking penetration ratio, fear of modern financial instruments, and financial exclusion.

Financial exclusion means inaccessibility of basic financial services (Behaghel, 2008; Deirdre, 2007; Iwanicz-Drozowska and Nowak, 2011; Lämmermann, 2010), which include owning a bank account, ability to make non-cash settlements, accessibility of credit, and having even small savings with regards to unstable financial situation (Kata, 2011). According to Kata, Walenia, and Pyrkosz (2015), in Poland, financial exclusion concerns mostly rural population and the reasons are related with both supply and demand. The demand-related reasons include low incomes of the rural population as well as behavioural and educational factors. The supply-related ones include poor development of financial infrastructure in non-urbanised areas, mismatch between the offer of clearing services and the needs of local clients, and the problem of asymmetry of information.

Another factor strongly determining the level of financial exclusion is gender. As determined by Smyczek (2012), Polish women are more likely than men not to use financial services, both because they do not want to and because they have been excluded by these institutions.

Despite these negative phenomena, in the last decade, a continuous increase of non-cash means of payment use, in particular in the number of payment card transactions, has been observed. Between 2005 and 2014, the percentage of card transactions in the group of all cashless transactions increased from 26% to 50%. The number of card transaction increased seven times in this period (Narodowy Bank Polski [NBP], 2015).

During the last two decades, the issues of payment-related behaviours of the consumers on the market have been more often addressed both by Polish (Maison, 2010; Polasik et al., 2012; *Postawy Polaków wobec finansów*, 2015; Smyczek, 2012; Soliwoda, 2015) and foreign researchers (Arango and Taylor, 2009; Borzekowski, Kiser, Ahmed, 2006; Deirdre, 2007; Simon, Smith, West, 2010). The volatility of consumers' behaviours on the financial market, even in short periods, requires continuous research and analyses.

This is why the aim of the paper is to identify and describe selected payment behaviours of women from rural areas and to assess the level of their payment card use, as women from rural areas are a statistically significant financially excluded group. The information obtained during research may be used to prepare appropriate instructional materials and training programmes popularising cashless payment in this group of consumers.

## Material and methods

The main source of data for analysis and inference was primary information from author's own research. The personal interview technique was used during research. As consumers' financial behaviours are different in each Province (Kuśmierczyk, 2011), the research was regional and included the territory of Małopolskie Province. It was conducted personally in 2014 on a group of 200 respondents. Non-probability quota sampling was used. The structure of the sample reflects the structure of general population in terms of economic age, education level, and main source of income (Kotowska, Siemieńska-Żochowska, Łagodziński, 2007).

All the participants were adults. The majority of the respondents were between 36 and 55 years old. The least numerous group in terms of age were women over 55 years old (18%). The most numerous group had attained secondary education (48%). Persons who had attained a tertiary education constituted a quarter of all respondents. The remainder declared professional (21%) and primary education (8%). The dominant group of respondents were working persons. Almost 50% assesses their financial situation as average. Only persons having a basic account in a bank or in a credit union were included in the study, as owning a bank account is indispensable for using cashless payment instruments (NBP, 2015). According to the conducted analysis, almost 65% of the respondents had an account in a commercial bank, and the remaining persons were clients of credit unions. None of the women had a bank account in SKOK.

Apart from the primary sources, secondary sources such as Polish and foreign literature, the National Bank of Poland reports, and mass statistics data, have been used.

To assess the level of use of payment cards by women from rural areas, funnel indicator of the level of use of payment cards ( $WL_{SWKP}$ ) elaborated based on cashless payment indicator of Maison (2010, 2013)<sup>1</sup> was used.  $WL_{SWKP}$  is a non-continuous indicator comprising 5 levels (0–4). Level 0 means lack of payment card, whereas level 4 is the highest level of payment cards use, manifesting itself by dominance of card use in cashless transactions. A higher level of the indicator includes features of lower levels. Particular levels of  $WL_{SWKP}$  are characterised in table 1.

To determine the correlation between the  $WL_{SWKP}$  indicator and the selected traits of the respondents, a non-parametric *chi*-square ( $\chi^2$ ) test. The  $H_0$  hypothesis assumed lack of statistically significant correlation between the studied traits, whereas the alternative hypothesis  $H_1$  assumed that such a correlation exists. All zero hypotheses were analysed on significance level  $p = 0.05$ .

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<sup>1</sup> "The funnel indicator of cashless payment use measures the intensity of cashless payments. It comprises 7 levels (from 0 to 6)." It was first presented in the report prepared for the National Bank of Poland in 2010 (Maison, 2010, p. 89), then used in NBP Report (Maison, 2013, pp. 77–78).

**Table 1.** The levels of the funnel indicator of the degree of making use of payment cards  
**Tabela 1.** Poziomy wskaźnika lejkowego stopnia wykorzystania kart płatniczych

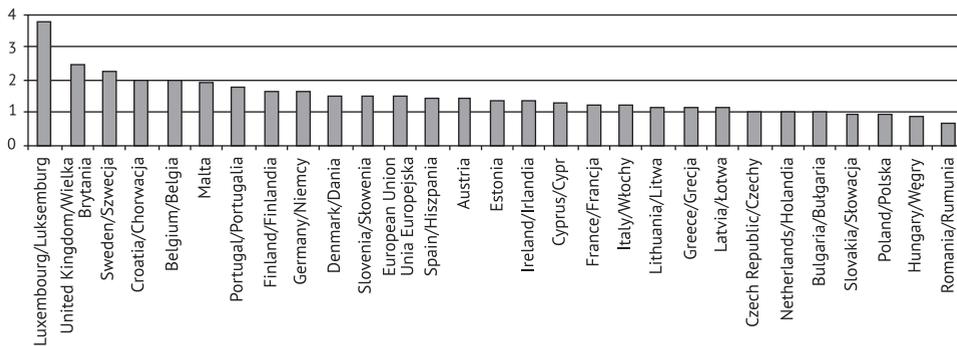
Indicator level Poziom wskaźnika	Name of the level Nazwa poziomu	Level characteristics Charakterystyka poziomu
0	People without card Osoby nieposiadające karty	No cards Brak karty płatniczej
1	Inactive Nieaktywni	A person who has a card but doesn't make use of it Osoba posiada kartę, ale z niej nie korzysta
2	A low level of using the card Niski stopień użycia karty	A person who uses a card only for cash transactions Osoba wykorzystuje kartę tylko do transakcji gotówkowych
3	A medium level of using the card Średni stopień użycia karty	A person uses a card in cash and non-cash transactions but cash transactions are in majority Osoba wykorzystuje kartę w transakcjach gotówkowych i bezgotówkowych, ale dominują transakcje gotówkowe
4	A high level of using the card Wysoki poziom użycia karty	The prevalence of non-cash transactions Przewaga transakcji bezgotówkowych

Source: Own elaboration based on: Maison (2010, p. 90)

Źródło: Opracowanie własne na podstawie: Maison (2010, s. 90)

## Basic indicator of payment systems in Poland and in European Union countries

Since 2010, the number of payment cards in circulation in Poland has been increasing. According to the National Bank of Poland, in 2014, there were 36.1 million payment cards in circulation, which is 4% more than in 2013. Despite the systematic increase of the number of payment cards in circulation, Poland has one of the lowest indicators of cards issued per resident in the group of European Union member states. In 2014, its value was 0.94 (Fig. 1). It is four times less than in Luxembourg and almost three times less than in the United Kingdom. In our region, Slovakia (0.97) and Hungary (0.9) are on the same level as Poland, whereas in Slovenia (1.53), Estonia (1.38), Lithuania (1.2), and Latvia (1.17) the values are much higher.



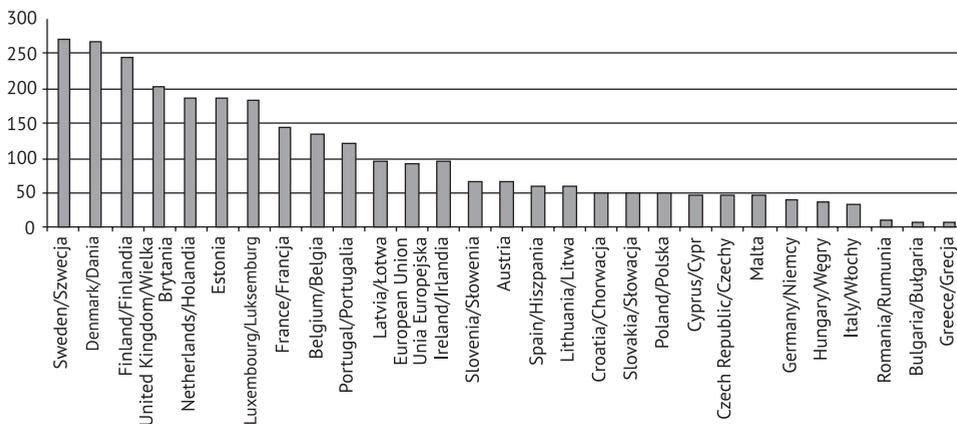
**Fig. 1.** A number of cards issued per one inhabitant in particular EU countries in 2014

**Ryc. 1.** Liczba wydanych kart płatniczych na jednego mieszkańca w poszczególnych krajach UE w 2014 r.

Source: Own elaboration based on: NBP (2015, p. 19)

Źródło: Opracowanie własne na podstawie: NBP (2015, s. 19)

The second indicator characterising the payment card penetration ratio does not compare favourably with other European Union member states either (Fig. 2). In Poland, still a relatively small number of payments is made using payment cards. In 2014, the number of non-cash transactions made with cards per 1 resident was 48.7, which put Poland on the 19th place in the group of European Union member states. In this period, the average number for EU countries was 93.2 transactions per resident.



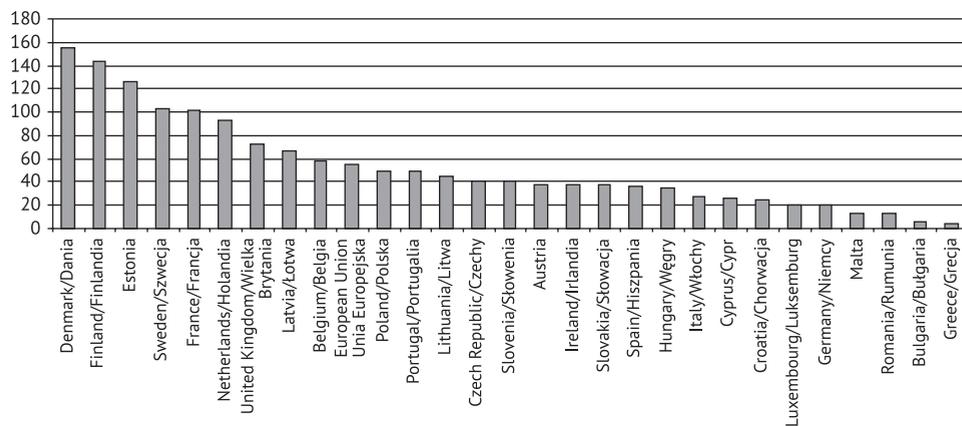
**Fig. 2.** A number of non-cash transactions made by payment cards per one inhabitant in particular countries in 2014

**Ryc. 2.** Liczba transakcji bezgotówkowych wykonanych kartami płatniczymi na jednego mieszkańca w poszczególnych krajach UE w 2014 r.

Source: Such as Fig. 1, p. 21

Źródło: Tak jak ryc. 1, s. 21

Another indicator reflecting the frequency of payment card use in Polish society is the number of non-cash transactions per 1 card. With 50 transactions a year, Poland is on the 10th place in the EU (Fig. 3). Based on the value of this indicator, it can be stated that in some countries with high number of cards per resident, some of these cards are inactive or rarely used for transactions.



**Fig. 3.** A number of non-cash transactions made by a single payment card in particular EU countries in 2014

**Ryc. 3.** Liczba transakcji bezgotówkowych dokonanych pojedynczą kartą płatniczą w poszczególnych krajach UE w 2014 r.

Source: Such as Fig. 1, p. 23

Źródło: Tak jak ryc. 1, s. 23

One of the factors shaping consumers' behaviours on the payment cards market is the financial infrastructure. According to the National Bank of Poland, in 2014, there were 533 ATMs per 1 million of residents. In comparison with other European Union countries, there is almost two times less ATMs than in the EU on average (table 2). In rural areas, the situation is much worse. It has been noted that the number of ATMs in Poland increases every year. Between 2010 and 2014, the number of ATMs in our country increased by 4120, i.e. 25%, whereas in the European Union only slight changes were observed in this period.

Also the indicator of the number of POS terminals per 1 million of residents is still twice smaller than the average for the Euro zone or the European Union, placing Poland on the 24th place in the EU (table 2). According to the National Bank of Poland, between 2010 and 2015, the number of devices accepting electronic payment instruments increased by almost one third, whereas in the EU, only by 15%. Nevertheless, the gap between Poland and the European Union is still big (NBP, 2015).

Although Poland has one of the highest number of devices accepting electronic payment instruments per 1 million of residents, in 2014, it was on the 11th place in the EU in terms of the number of non-cash transactions realised in a single terminal. The number is higher than the EU average (Poland – 4560 transactions, EU average – 4167 transactions).

**Table 2.** Selected indicators of the payment system for Poland and the UE in 2014  
**Tabela 2.** Wybrane wskaźniki systemu płatniczego dla Polski i UE w 2014 r.

Specification Wyszczególnienie	A number of cash machines per 1 million inhabitants Liczba bankomatów na 1 mln mieszkańców	A number of POS terminal per 1 million inhabitants Liczba terminali POS na 1 mln mieszkańców	A number of non-cash transactions made in a single POS terminal Liczba transakcji bezgotówkowych zrealizowanych w pojedynczym terminalu POS
France / Francja	1 736	24 287	5 134
Portugal / Portugalia	1 516	25 948	3 426
Spain / Hiszpania	1 086	26 345	2 033
United Kingdom / Wielka Brytania	1 084	26 346	6 768
Germany / Niemcy	1 037	10 699	3 044
Austria	1 021	14 292	3 780
Croatia / Chorwacja	997	23 510	2 033
European Union / Unia Europejska	960	19 694	4 167
Belgium / Belgia	898	16 421	6 995
Luxembourg / Luksemburg	878	228 478	356
Slovenia / Słowenia	821	15 948	3 893
Italy / Włochy	817	30 388	1 096
Bulgaria / Bułgaria	776	10 543	566
Greece / Grecja	635	11 866	517
Romania / Rumunia	579	6 543	1 417
Ireland / Irlandia	570	8 832	5 674
Cyprus / Cypr	550	26 861	1 275
Estonia	549	21 858	7 957
Latvia / Łotwa	535	14 272	5 454
Poland / Polska	533	10 347	4 560
Slovakia / Słowacja	500	8 425	4 322
Hungary / Węgry	495	10 631	2 992
Malta / Malta	484	31 868	793
Denmark / Dania	448	24 675	9 931
Lithuania / Litwa	438	13 372	4 043
Netherlands / Holandia	425	16 755	10 505
Czech Republic / Czechy	422	9 605	4 423
Finland / Finlandia	405	28 725	8 233
Sweden / Szwecja	333	20 316	11 529

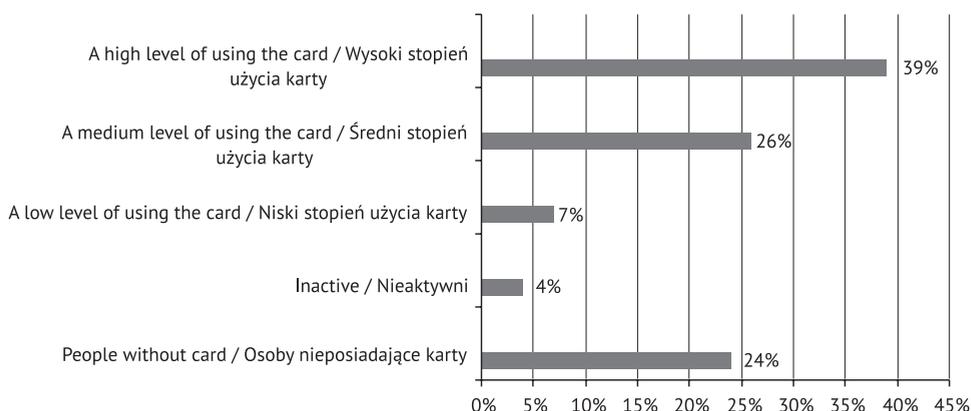
Source: Such as Fig. 1, pp. 12, 16, 25

Źródło: Tak jak ryc. 1, s. 12, 16, 25

## Selected factors determining the level of payment cards use in women from rural areas

In recent years, an increase of the activity of women from rural areas on financial market, including innovative payment instruments market, has been observed. The reasons of the changes of the behaviour of female consumers on the market are: gradual improvement of their standard of living, change of budget management patterns, banking penetration ratio increase, and change of attitude towards money. According to the conducted research, it is not a homogeneous segment of consumers, which is confirmed by varied percentage of particular levels forming the funnel indicator.

As shown on figure 4, one in four respondents did not own any payment card (level 0 of  $WL_{SWKP}$ ). The obtained results are higher than the results presented in other studies due to the fact that the research was conducted only in rural areas (Kozłiński, 2013). Women pertaining to the group of persons not owning any cards are the oldest respondents, who receive a pension or pensions, and the respondents who chose the option "other income sources." The main reasons of not owning a card were the following: no need (50%), no necessary infrastructure in the place of residence (25%), too high card fees (15%), and advanced age (10%).



**Fig. 4.** Levels of the funnel indicator of the degree of making use of payment cards in a group of respondents under study (%)

**Ryc. 4.** Poziomy wskaźnika lejkowego stopnia wykorzystania kart płatniczych w badanej grupie respondentek (%)

Source: Own research, n = 200

Źródło: Badania własne, n = 200

Other levels of the indicator (1–4) are persons who own a card (76%). The determinants of the payment card penetration ratio in women from rural areas are age and main source of income (table 3). Women who own cards are workers between 36 and 55 years old. Non-differential factors are education and subjective evaluation of financial situation indicated by the respondents.

**Table 3.** The value of the independence *chi*-square test between the funnel indicator of the degree of making use of payment cards and selected variables**Tabela 3.** Wartość testu niezależności *chi*-kwadrat pomiędzy wskaźnikiem lejkowym stopnia wykorzystania kart płatniczych a wybranymi zmiennymi

Independent variables Zmienne niezależne	The value $\chi^2$ Wartość testu $\chi^2$	Number of degrees of freedom ( <i>df</i> ) Liczba stopni swobody ( <i>df</i> )	Hypothesis rejection $H_0$ in favour of $H_1$ (correlation of characteristics) Odrzucenie hipotezy $H_0$ na rzecz $H_1$ (zależność cech)
Age / Wiek	20.9	9	Yes / Tak
Education / Wykształcenie	15.3	12	No / Nie
A primary source of income Główne źródło dochodu	24.6	6	Yes / Tak
Subjective evaluation of the respondent's financial situation / Subiektywna ocena sytuacji finansowej respondenta	9.5	9	No / Nie
A kind of bank which services are used by respondents (commercial/cooperative) / Rodzaj banku, z którego usług korzystają respondentki (komercyjny/spółdzielczy)	4.5	4	No / Nie
Making use of on-line banking / Korzystanie z usług bankowości elektronicznej	32.2	4	Yes / Tak

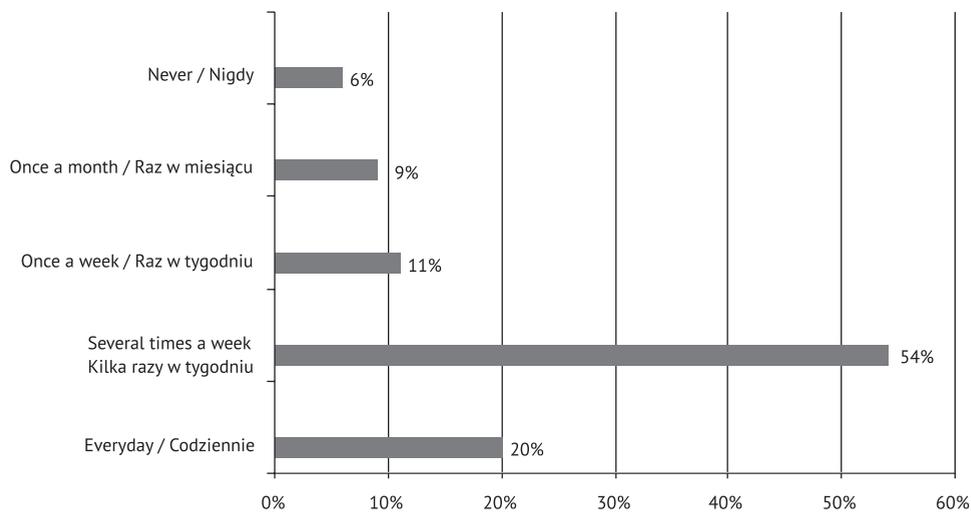
Source: Own research

Źródło: Badania własne

The respondents usually had 1 card (70%). Almost 7% had two cards. None of the respondents had more than two cards. Comparing the obtained results with the national results, differences were noted. First of all, the percentage of one-card owners in the studied group was higher (by almost 10%) and the percentage of owners of two cards was lower. In all-Polish studies, 3% of the population had 3 cards (Kozłiński, 2013).

Almost 80% of all cards were debit cards. One in five cards was a credit card. Pre-paid cards were the rarest. In case of the studied group, pre-paid and credit cards were the second cards owned. Almost two thirds of the cards were Visa cards; the remaining part was MasterCard.

Figure 5 presents the frequency of card use. 6% of card owners (4% of all the respondents) did not use their cards (level 1 of  $WL_{SWKP}$ ). The majority of them pertained to the youngest group and to the group of women whose main source of income was their own agricultural holding or who chose “other income sources.”



**Fig. 5.** The structure of the frequency of using cards in a group of respondents (%)

**Ryc. 5.** Struktura częstotliwości korzystania z kart w grupie badanych respondentek (%)

Source: Own research, n = 152

Źródło: Opracowanie własne, n = 152

The majority of card owners used their card several times a week (54%). One in five respondents used their card every day. 11% of the women used their card once a week and almost 10% once a month.

Card fees concerned both debit cards (67% of all such cards) and credit cards (57% of all such cards). Currently, in many banks, the card fee only applies if the card is not used. This mechanism was observed also in case of the studied group. The more often the respondents used their cards, the lower was the percentage of persons paying card fee.

The next level of the funnel indicator is level 2, characterising persons who own a payment card, but use it only in cash circulation (ATMs/cash deposit machines). In the study, such persons represented 7% of all respondents (9% of card owners). They were usually over 55 years old and received pension or pensions.

Another group consists of persons who use their card both for cash and non-cash transactions, however cash transactions are dominant (26% of all respondents). In this case, age-related differences in financial behaviours were not observed. However, these behaviours differed in relation to source of income. This attitude was shown mostly by working persons.

The highest level of the indicator (level 4) is characteristic for persons who use their card mostly in cashless transactions. It applied to almost 40% of all respondents

(51% of all card owners). Cashless transactions included mostly payments in commercial and service outlets that accept payment cards. They were the most popular among persons between 36 and 55 years old and working persons. Half of this group used they cards to pay for items purchased on-line.

In the study, the correlation between the level of the funnel indicator of card penetration ratio and the use of electronic banking was evaluated. The analysis shown that the higher the card penetration, the more the respondents are willing to use electronic banking. None of the women on the 0 level of the funnel indicator used electronic banking.

## Conclusion

The study allowed a preliminary description of selected aspects of financial behaviours of women from rural areas on the payment cards market and the determination of their level of use of payment cards (five levels were defined). The demographic and economic factors determining the consumers' behaviours are age and main source of income. The percentage of card owners was the lowest among the oldest respondents, respondents receiving pension or pensions or with "other income sources." The main reason for not owning a card was not feeling the need to. In relation to the above, persons who do not own a payment card, but own a bank account, should be covered by special promotional actions of financial institutions, i.e. a free card connected to the account should be issued to them for a limited period to show them the advantages of such solution. These actions should include elderly people in particular.

Women owning a payment card (76%) usually have one card. In the majority of cases, it is a debit card. Credit and pre-paid cards are usually the second card they own.

The research shows that 5% of card owners do not use it. Another 7% of card owners have a card connected to an account, but use it only for cash payments (level 1  $WL_{SWKP}$ ). In a specific study on this subject, discovering motives for use of this financial instrument of the consumers should be an important research task.

Women from rural areas on the highest level of payment cards use (level 4  $WL_{SWKP}$ ) are workers between 36 and 55 years old. They prefer non-cash circulation. Banks should offer them mobile payment services.

Taking the high volatility of consumers' behaviours on the financial market and the their susceptibility to various factors, not only the chosen demographic and economic ones into account, research aiming to determine the remaining factors affecting the behaviours of women on the card market as well as the dynamics and directions of the changes would be interesting.

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