The role of cooperative banks in increasing the banking penetration ratio of rural areas in Poland

Monika Szafrańska¹, Renata Matysik-Pejas²
University of Agriculture in Krakow¹,²
Institute of Economics and Enterprises Management
Al. Mickiewicza 21, 31-120 Krakow
Krakow, Poland
e-mail¹,²: m.szafranska@ur.krakow.pl, rrmatysi@cyf-kr.edu.pl

Abstract
The objective of the study is to assess the number of households in rural areas which use banking services offered by cooperative banks in Poland and to identify factors determining and differentiating the level of penetration ratio. Primary and secondary sources have been used to obtain the results. Empirical material has been evaluated using indicators of structure and non-parametric "Chi" square (χ²) test. The results confirm the key role of cooperative banks in increasing banking services usage in rural areas in Poland. Almost 70% of residents of rural areas use banking services offered by cooperative banks. Studies have shown that the factors determining the level of banking services usage of residents of non-urbanized areas are: gender, level of education, professional status and financial situation. Apart from traditional channels of access to a bank account, residents of rural areas also use online banking services (50% of respondents) offered by cooperative banks.

Keywords: cooperative bank, rate of usage of banking services, rural dwellers

JEL Classification: D12, G21, R22

1. Introduction
The current account is a basic banking product. This type of account enables cash settlements, depositing savings and taking out a loan in the form of a debit. Current accounts offered by banks for individual customers differ significantly from those offered several years ago. The current account offers have been expanded and additional services like credit cards, automatic deposits, overnight deposits and insurance products have been added.

According to Eurobarometer 282 Report, nearly one in ten Poles does not have a personal bank account; moreover accounts of a part of the population remain inactive. The number of bank customers in Poland compared to other EU countries is low. The penetration ratio stands at 89%, ranking Poland 19th alongside the Czech Republic (Flash Eurobarometer 282, 2013). The lowest ratios are among the elderly (over 59 years) with a primary/secondary education level, low-skilled employees, the unemployed, and rural residents. The low ratio of banking services usage in Poland results from many factors: attachment of Poles to cash payments, negative demand with respect to financial institutions, as well as unequal access to bank branches, especially in rural areas (Beck, Demirguc-Kent and Martinez-Peria, 2007). Although the number of bank customers in non-urban areas in 2006-2009 increased significantly (from 38% in 1996 to 72% in 2009), Polish rural areas still have the lowest penetration ratio (Koźliński, 2009).

The objective of the study is to assess the number of households in rural areas which use banking services offered by cooperative banks, which in non-urbanized areas are often the only financial institutions within a radius of several kilometers, and to identify factors determining and differentiating the level of penetration ratio. The main reason for taking the issue into consideration was the importance of the subject in question. A high ratio of banking services usage among householders in addition to benefits to the individual customer also brings about
economic benefits by increasing non-cash transactions, which, in turn, can reduce the costs resulting from money issuance and management, favors the development of banking services, reduces losses associated with cash crime as well as enhances convenience of settlement of transactions in economic and social activity (Wurgler, 2000).

2. Data and Methods

For the purposes of the objective, field research using personal interview technique was implemented (survey). The interview questionnaire contained several closed questions. Questions were divided into two groups: demographic questions and proper survey questions. The research was carried out in the Malopolskie Province. The study was conducted in 2015 on a group of 400 people residing in rural areas. Respondents were randomly selected. The sample size was determined according to the prospective specificity of cross classification analysis of tabular data (Bazarnik, Grabiński, Kąciak, Mynarski, and Sagan, 1992). After data reduction process, 382 questionnaires were selected for further analysis.

55% of respondents were female and 45% male. The study involved adults only (over 18 years). Almost 50% of respondents were aged 18 to 35 years, 35% of from 36 years to 55 years. The remaining respondents were over 55 years. The largest group of respondents had a secondary education (45%). 26% of all the respondents had a higher education. The remaining respondents declared a vocational education (23%) and a basic/lower secondary (6%). The high participation rate of respondents with higher education resulted from the fact that they were more willing to participate in the survey. The dominant group of respondents was employed (65%). Pensioners accounted for 19% of the study population. Farmers (9%) and college or university students (7%) participated in the survey as well.

The study of empirical material used indicators of structure and non-parametric test "Chi" square (\(\chi^2\)) (survey).

\[
\chi^2 = \sum_{i=1}^{r} \sum_{j=1}^{s} \frac{(n_{ij} - np_{ij})^2}{np_{ij}}
\]

where,

- n - sample size, 
- r - the number of quality characteristics X, 
- s - the number of quality characteristics Y, 
- p_{ij} - hypothetical probability, 
- n_{ij} - the number of sample elements having the i-th number of quality characteristics X and j-th number of quality characteristics Y.

The null hypothesis \(H_0\) was formulated thereby assuming the independence of the studied characteristics. If an inequality \(\chi^2 \geq \chi^2\alpha\) was observed after carrying out the test, the \(H_0\) hypothesis, assuming independence, was rejected in favor of the \(H_1\) hypothesis which assumed the dependence of the characteristics considered. All null hypotheses were verified at a significance level of \(p=0,05\). In addition to primary sources, secondary sources such as: trade literature and reports of the National Bank of Poland were employed in the analysis. The results of the analysis are presented in a descriptive and graphical form.
3. The nature of cooperative banks' activity in Poland

The shape of the financial infrastructure and agriculture in rural areas in Poland, including banking services, is a consequence of specific historical and political circumstances as well as the tendency of the banks themselves to initiate and carry out activities in this area (Kata, 2011). The cooperative banking sector plays the key role in supplying financial services in Poland's rural areas.

By the end of 2014 there were 565 cooperative banks in Poland, which except for one were associated in two bank associations. Although the sector has the largest network of bank branches in the country (1/3 of all branches), the share of these entities in the Polish banking system is relatively small, less than 7% of banking sector assets (Table 1).

Table 1: Basic information about the cooperative banking sector in Poland in 2010-2014

<table>
<thead>
<tr>
<th>Specification</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>The number of cooperative banks in Poland (items)</td>
<td>576</td>
<td>574</td>
<td>572</td>
<td>571</td>
<td>565</td>
</tr>
<tr>
<td>Share of cooperative banks in the banking sector assets (%)</td>
<td>6.1</td>
<td>6.1</td>
<td>6.4</td>
<td>6.9</td>
<td>6.9</td>
</tr>
<tr>
<td>Interest income of cooperative banks (% profit on banking operations)</td>
<td>72.4</td>
<td>75.0</td>
<td>77.1</td>
<td>75.3</td>
<td>75.9</td>
</tr>
<tr>
<td>Operating expenses (% of net banking income)</td>
<td>65.0</td>
<td>63.0</td>
<td>62.6</td>
<td>67.4</td>
<td>65.2</td>
</tr>
<tr>
<td>Gross profit (% of basic average funds)</td>
<td>15.1</td>
<td>16.2</td>
<td>15.7</td>
<td>10.8</td>
<td>10.8</td>
</tr>
<tr>
<td>Net financial result (% of basic average funds)</td>
<td>11.8</td>
<td>12.7</td>
<td>12.2</td>
<td>8.4</td>
<td>8.3</td>
</tr>
</tbody>
</table>


Cooperative banks in Poland constitute a diverse group of stakeholders, both in terms of size, main areas of activity and achieved profitability. The Minimum Capital Requirement for cooperative banks should be the equivalent of EUR 1 million. Such banks are allowed to operate only in their own district and province. These types of banks comprise the largest group of cooperative banks in Poland. Banks with capital higher than the equivalent of EUR 5 million may operate throughout the entire country. At the end of 2014, 123 cooperative banks, whose capital exceeded that amount, operated in Poland.

The structure of cooperative banks' assets is different from commercial banks. Maintaining significant investments in affiliated banks resulted in the bank debt of cooperative banks to the financial sector. The figures were three times higher than the average in the banking system. The structure of financing cooperative banks is different from the structure of financing commercial banks. The assets of cooperative banks come mostly from deposits of households rather than companies. A characteristic feature of cooperative banks' activity in Poland is a high proportion of liabilities to the local government sector institutions. This is due to the fact that smaller municipalities maintain bank accounts almost exclusively in cooperative banks.

The structure of cooperative banks' activities shows that these banks are mainly focused on providing traditional banking products. In 2014, net interest income accounted for over 75% banking income, and the dominant part of the non-interest income came from commissions and fees. The high proportion of operating expenses of cooperative banks shows their relatively low efficiency (C/I ratio at the end of 2014 amounted to 70%). It results from limited opportunities
to conduct economies of scale and the fact that the level of ICT development is lower than in commercial banks (Rozwój systemu finansowego w Polsce w 2014, 2015).

4. Factors determining the usage of banking services offered by cooperative banks by rural areas' residents

Over the last 10 years the number of bank customers in Poland has been growing steadily. Although the fastest growth has been observed in rural areas, they still have the lowest penetration ratio (72%) (Koźliński, 2009). The undertaken study shows that the ratio of usage of banking services offered by cooperative banks in rural areas in Poland amounts almost to 70%. Comparing the overall number of banking services users in rural areas of Poland with the rate for cooperative banks, it can be stated that the vast majority of residents of non-urbanized areas use mainly the services offered by cooperative banks (the difference by 2 percentage points). The factors determining the choice of a cooperative bank were: gender, education level, the main source of income and financial situation of the respondents. The services offered by a cooperative bank are used mostly by women with higher education who declare their financial situation as good and by farm holders (Table 2).

Table 2: Factors determining the usage of banking services by rural areas' residents (the results of the test of independence $\chi^2$, $p=0.05$)

<table>
<thead>
<tr>
<th>Specification</th>
<th>The value of the test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>$\chi^2=21.06; df=1$</td>
</tr>
<tr>
<td>Education</td>
<td>$\chi^2=26.94; df=3$</td>
</tr>
<tr>
<td>Financial situation</td>
<td>$\chi^2=15.48; df=4$</td>
</tr>
<tr>
<td>The main source of income</td>
<td>$\chi^2=10.58; df=3$</td>
</tr>
<tr>
<td>Age</td>
<td>$\chi^2=6.03; df=3$ (negative test)</td>
</tr>
</tbody>
</table>

Source: own research

The analysis shows (Figure 1) that women living in rural areas who use banking services, more often than men have an account in a cooperative bank. These results are consistent with previously conducted studies (Szafranska, 2010), which show that banking services usage rate is higher for men who also more often than women have a current account in a commercial bank.

Figure 1: The rate of usage of banking services offered by cooperative banks according to gender (customers of cooperative banks)

The next determinant for the usage of banking services rate is the level of education. This factor is of particular importance in the financial services market, because the majority of services require extensive knowledge. Consumers with higher education are able to determine the
benefits of using an individual account. According to Figure 2, with the increase of the level of education, the rate of people who have an account in a cooperative bank grows. The rate of banking services users increases from 33% in the group of respondents with primary/secondary education to 84% in the group of respondents with higher education. Such correlation is also confirmed by the results of research conducted by the Central Bank of Poland (Koźliński, 2009).

Figure 2: The rate of usage of banking services according to education (customers of cooperative banks)

![Figure 2: The rate of usage of banking services according to education (customers of cooperative banks)](image)

Source: own research, n=382

In the investigated sample, respondents who do not have an account are usually those with primary and secondary education (66%). Mostly they were the oldest respondents. On the other hand, the highest rate of usage of banking services offered by cooperative banks was for respondents aged 35-54 years. However, as shown by statistical analysis (Table 2), the age of consumers is not a determining factor in the use of services offered by cooperative banks by rural area residents. In this case, the test of independence $\chi^2$ was negative. A detailed distribution of respondents is presented in Figure 3. The results are consistent with the results of tests carried out by other authors.

Figure 3: The rate of usage of banking services according to age (customers of cooperative banks)

![Figure 3: The rate of usage of banking services according to age (customers of cooperative banks)](image)

Source: own research, n=382

According to Figure 4, possessing a bank account in a cooperative bank is also dependent on the main source of income in the household. Farm holders constitute a group that most often have a bank account in a cooperative bank. The rate of banking services users is the lowest for pensioners (55%). This is due to their attachment to cash payments.

Figure 4: The rate of usage of banking services according to the main source of income (customers of cooperative banks)
The services of a cooperative bank as the main financial institution are mostly used by respondents assessing their financial situation as good (80% of respondents from this group have an account in a cooperative bank). 60% of remaining respondents were interested in using cooperative banks.

Apart from traditional access to a bank account one in two respondents used internet banking services (i.e. 2/3 of rural residents using banking services). The statistical analysis indicates (Table 3) that the factors determining the use of internet banking services by rural resident are: age, education level, financial situation and the main source of income of respondents. The internet banking services are used mostly by respondents up to 44 years of age. Almost 65% of respondents from this age group had internet access to their account, while only one in five consumers uses this service in other age groups.

Table 3: Factors determining the rate of banking services usage by rural residents (the results of the test of independence $\chi^2$, $p=0.05$)

<table>
<thead>
<tr>
<th>Specification</th>
<th>The value of the test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>$\chi^2=61,20$; $df=3$</td>
</tr>
<tr>
<td>Education</td>
<td>$\chi^2=60,10$; $df=3$</td>
</tr>
<tr>
<td>Financial situation</td>
<td>$\chi^2=34,9$; $df=4$</td>
</tr>
<tr>
<td>The main source of income</td>
<td>$\chi^2=48,06$; $df=3$</td>
</tr>
<tr>
<td>Gender</td>
<td>$\chi^2=3,46$; $df=1$ (negative test)</td>
</tr>
</tbody>
</table>

Another factor determining the use of internet banking services is education level. According to the survey, the higher the level of education, the more respondents use electronic banking. In the group of respondents with higher education, almost 80% opted for this service, while in the group with the lowest education, the rate did not exceed 10%. This correlation is also observed regarding commercial banks and credit unions.

Taking the main source of income into account, groups that usually use e-banking were farmers (87.5%) and employed persons (51.1%), as these two groups of people are the main customers of the cooperative banks. While taking the financial situation of the respondents into account, most respondents assessed their situation as good or average. A factor not influencing the use of internet banking amongst rural population is gender. Women and men equally benefit from this service in cooperative banks.

5. Conclusion

The results of the study confirm the key role of cooperative banks in increasing banking services usage by residents of rural areas in Poland. The rate of usage of banking services offered by cooperative banks by rural residents is lower by only a few percentage points than the overall
rate of banking services usage in rural areas in Poland. This ranking results from the local nature of the activity. Studies have shown that the factors determining the level of banking services usage of residents of non-urbanized areas are: gender, level of education, professional status and financial situation. A factor which does not influence the financial behavior of customers of cooperative banks is age. Apart from traditional channels of access to a bank account, residents of rural areas also use online banking services (50% of respondents). The factors shaping these attitudes are: age, education, professional status and financial situation of clients. A lower level of access to the Internet than in urban areas, a lack of computer skills among the elderly and less educated, and the high operating costs of the internet, resulted in the fact that older and less educated customers are less likely to use online banking in cooperative banks.

References

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