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The Determinants of Cooperative Banks' Community Service—Empirical Study from Poland

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Received: 21 January 2020; Accepted: 26 February 2020; Published: 2 March 2020

Abstract: This research concentrated on the socio-financial qualities of Poland's co-op banking. The study's results enabled answering the question of whether the cooperative banks (co-op banks) are exclusively focused on maximum financial effectiveness or faithful to the idea of cooperation, which basically means supporting its membership and community development. The main objective of the study was to determine the influence of internal factors on initiated support to the community within the framework defining the activities pertaining to a business's social responsibility, as seen for Poland's co-op banks. A seven-year study period was adopted, i.e., 2011–2017, inclusive. The research indicated that the co-op banks decide about a sum of contributions for community initiatives based on their current condition—according to current profits, current credits volume, total accounts number and considering financial security as expressed by the level of the solvency coefficient of the previous year.

Keywords: corporate social responsibility; cooperative bank; financial effectiveness; sustainability

1. Introduction and Literature Review

How cooperative banks function is based on complex theoretical fundamentals, and their identification requires consideration of at least two aspects, i.e., financial and social [1]. The cooperative theory holds that cooperatives, as organizational units, should generate social effects in the local community. Cooperative banks (Co-op banks) operate based on self-help and mutual support combined with activity for the benefit of its members, markets and community. They reflect the generally understood concept of corporate social responsibility, currently so appealing to commercial banks endeavoring to increase their market share. As a financial entity belonging to its membership, who are both owners and clients at the same time, cooperative banks are institutions of manifold characteristics, and their functions, including cooperation, have an essential impact on their conduct and activity [2]. The substance of cooperatives in certain countries continues to develop or to disappear [3]. Cooperatives in Poland show continued low activity. However, recent experience shows that this status quo needs to change. It is highly probable that in the relatively near future, Poland's cooperative banks will either develop or simply disappear from economic life [4]. It is also worth stressing that the problem of financial exclusion is widespread, especially after the socialistic period that has occurred

in Poland; this particularly affects rural and urban–rural areas, i.e., the areas of operation in which cooperative banks cannot fully fulfill their roles due to legal, organizational and business constraints. It must be emphasized that cooperative banks aim mainly to promote markets and local communities. Thus, their activity is directly linked to local development and the social and economic development of the country. In addition, the community services offered by cooperative banks for their clients is part of the main policy document of the Polish Government, the Strategy for Responsible Development; primarily in the area of capital for development, support for small and medium enterprises and the activation and strengthening of economic and social functions of rural areas (pact for rural areas) [5]. A well-functioning cooperative banking sector is a part of the ecosystem of social and economic activity, primarily in rural and small-town areas, and supports sustainable development initiatives.

This approach is particularly important because cooperative banks in the Polish banking system perform essential functions that commercial banks are unable to fulfil [6]. The proposed activity will also enable the sustainable development strategy to be implemented by the effective cooperative banking sector, which may ensure the introduction of and support for local, sustainable development initiatives [7]. At the end of 2019, 545 cooperative banks were operating in Poland, and the total co-op banking sector possessed close to 9.5% of the total assets of Poland's banking sector, close to 7.0% of total loans and close to 10.0% of total savings. Interestingly, Poland's cooperative banks employ close to 21% of personnel working in the banking sector, which is approximately 32.100 individuals working in 4740 offices, which is 40% of banking offices in Poland. Another fact worth mentioning is that 80% of the co-op bank offices are located in rural and suburban areas. As a result, the co-op banks are thus key players in the commercial development of those areas, especially when commercial banks are not interested in those locations [8].

How to take advantage of the essence of cooperation in the development of the banking sector is an interesting consideration. This concept may be an uncomfortable relic or a strong basis for the development of this banking sector. In connection with this, the exploration of a cooperative bank's community service may be an important social and economic issue. It is worth noting that up to now, there has been little research pertaining to cooperative banks' community service [9]. Most of the research regarding cooperative banking in Poland has generally concentrated on financial effectiveness without any reference to the said banks' community input [10]. Furthermore, parts of the studies have had a segmental character, and they have usually referred to literature reviews about that segment [11,12]. There is little empirical research combining the financial and social spheres, especially in the areas of differential levels and range of cooperative banks' community service, as dictated by its financial effectiveness [13–16]. Therefore, research pertaining to establishing the relationship between community service and the financial effectiveness of co-op banks seems justified. The current examination will allow insight into whether co-op banks continue to serve community goals associated with cooperatives, and will also help to establish the financial and economic factors that condition that service.

Exploring the community service of co-op banks may be equally important for the banks themselves as one of the potential alternatives to conditioning their market advantage. The cooperative theory holds that cooperatives, as organizational units, should generate social effects in the local community. It seems that this requirement should apply equally to co-op banks as collaborative financial institutions [17]. One of the conditions for undertaking this proposed study is an appreciation of the specific nature of co-op banks, which, on the one hand, are an inseparable part of the contemporary financial market, and on the other, an important element in local financial systems [17,18]. Co-op banks operate on the basis of self-help and mutual support combined with activity for the benefit of its members, markets and community, reflecting the generally understood concept of corporate social responsibility so appealing to commercial banks endeavoring to increase their market share [19]. An essential element of this issue is the definition standpoint of a co-op bank, which regards the bank as a financial entity belonging to its membership and them being at the same time its owners and clients [20]. The idea of cooperativeness and co-op banks is deeply rooted in the consciousness of the community where the co-op banks,

in essence, support and participate in sustainable local development [3]. Frequently, thanks to co-op banks, many residents have avoided social exclusion through the fact that they had access to bank services [21]. Above all, co-op banks contribute to the familiarization of the population with banking in the areas where they function, which is an important benefit to the local community.

The research concentrated on the sociofinancial qualities of Poland's co-op banking. The study's results will answer the question of whether the co-op banks are exclusively focused on maximum financial effectiveness, or faithful to the idea of cooperation, which means supporting its membership and community development. The answer to this question will fill the research gap in this area, as there is very limited research in the literature combining the assessment of the efficiency of cooperative banks with their social activities in dynamic terms. In addition, the research results will bring a deeper understanding of the cooperative form of operation and the mechanisms associated with it.

2. Materials and Methods

The main objective of the study was to determine the internal factors that have an impact on the realization of double bottom line goals of cooperative banks in Poland, including time lags of the factors. A seven-year study period was adopted i.e., 2011–2017, inclusively, to give time to effectively penetrate the issue. The study period was chosen to avoid the impact of the last financial crisis. Also, the data were collected through meeting reporting standards [18] and integrated reporting practices [22,23]. Furthermore, for the purposes of this study, primary and secondary data were used.

The primary data were collected from electronic surveys of co-op bank management. The survey was focused on social issues, like the number of accounts (thousands), number of bank members, total sum contributed by a bank for prosocial activities (thousands; Polish zloty; PLN), the number of supported prosocial initiatives and the relationship of funds contributed to prosocial activities with the bank's net profits (%). The study was conducted in the second half of 2018 on a group of 549 Polish cooperative banks. Completed surveys were received from 62 co-op banks; however, six banks returned incomplete questionnaires, which were automatically eliminated from the study. In effect, data from 56 co-op banks was utilized, which was almost 10.2% of the total number of co-op banks in Poland. After collecting the primary data, secondary data were gathered from financial statements and data from the Polish Financial Supervision Authority (KNF), the Central Statistical Office of Poland (GUS), compiled statistics pertaining to the European Union and Poland, as well as numerical data from the banks under study, announced in their yearly statements. During this time, the following information was gathered: net profits (thousands PLN), return on assets (ROA; %), return on equity (ROE; %), cost to income (C/I), nonperforming loans (NPL; %), total capital ratio (TRC; %), balance totals (thousands PLN), total own funds (thousands PLN), total deposits (thousands PLN) and total credits (thousands PLN). This set of variables was important in the case of assessing the banks' performance and its stability [24].

To meet the research goal, the first phase of the study determined the correlational dependence between selected factors associated with co-op banks and their social activities. In order to express the relation between selected variables, Pearson's linear correlation coefficient was applied [25]. It should be mentioned that for the assessment of the linear regression model, the correlation coefficient over 0.2 was significant [26].

Next, to define the significance of the individual variables, panel models were used. The study took advantage of balanced data panels sourced from 56 co-op banks from 2011–2017, reflecting 11 independent variables. Indexation—$(i) = 1, \ldots, N$ identifies the next objects, indexation $(t) = 1, ; \ldots, T$, however, indicates the unit of time. Therefore, the estimated panel model, with the application of the least square methods has the form [27],

$$y_{it} = x_{it}\beta + v_{it} \quad (1)$$

where

y_{it}—dependent variable,

x_{it}—independent variable,
β—vector length N structural parameters of the model,
v_{it}—total random error, composed of strictly random parts of ε_{it} and individual effect of μ_i referring to the specific i panel unit.

The panel estimation model may be generated with the help of classic methods of least squares [28], in the case where the condition of the estimator compatibility for the classic least square methods for total error was fulfilled, $E(v_{it}) = 0$, $Cov(V_{it}, x_{it}) = 0$, and for pure random error $E(\varepsilon_{it}) = 0$, $Cov(\varepsilon_{it}, x_{it}) = 0$, $i = 1, \ldots, N$, $t = 1, \ldots, T$, as well where correlation did not occur between individual effect μ_i and the independent variable x_{it}. To accurately confirm whether a given panel model can be estimated with the help of the classic least square method, the hypothesis was verified by proving that the individual effect was present. In this case, the Breusch–Pagan test was applied with the following hypotheses [29],

$$H_0 : \sigma_u^2 = 0 \tag{2}$$

$$H_0 : \sigma_u^2 \neq 0 \tag{3}$$

If an additional random component had a normal distribution and a large number of observations were available, the statistical Breusch–Pagan test was as follows:

$$= \frac{NT}{2(T-1)}\left(\frac{S_1}{S_2} - 1\right)^2 \tag{4}$$

and had a distribution of χ^2 with 1 degree of variation. Lacking a base for rejecting the zero hypotheses indicated an irrelevant variation change when introducing individual effects, therefore adding these effects was needless, yet accepting an alternative hypothesis would indicate the justification for introducing individual effects [29].

In the case where an individual effect was to occur, it would be prudent to examine two cases, i.e., for foreseen and random effects. If foreseen effects occur in the model, the model would then appear as such [25],

$$y_{it} = x_{it}\beta + u_i + \varepsilon_{it} \tag{5}$$

where
u_i—individual effect,
ε_{it}—clear random error.

The foreseen individual errors are eliminated through averaging the model relative to time; ergo, the above equation becomes modified to:

$$\frac{1}{T}\sum_{t=1}^{T} y_{it} = \frac{1}{T}\sum_{t=1}^{T} x_{it}\beta + \frac{1}{T}\sum_{t=1}^{T} u_i + \frac{1}{T}\sum_{t=1}^{T} \varepsilon_{it} \tag{6}$$

which equivalency may be written as

$$\overline{y}_i = \overline{x}_i\beta + u_i + \overline{\varepsilon}_i \tag{7}$$

Reducing the above two equations produces

$$y_{it} - \overline{y}_i = (x_{it} - \overline{x}_i)\beta + (\varepsilon_{it} - \overline{\varepsilon}_i) \tag{8}$$

It is worth emphasizing that in this situation, the constant individual effect u_i has been eliminated. Assuming, $\widetilde{y}_{it} = y_{it} - \overline{y}_i$, $\widetilde{x}_{it} = x_{it} - \overline{x}_i$ and $\widetilde{\varepsilon}_{it} = \varepsilon_{it} - \overline{\varepsilon}_i$, the model now reads $\widetilde{y}_{it} = \widetilde{x}_{it}\beta + \widetilde{\varepsilon}_{it}$, which after estimation with the use of the classic least square method gave the estimator structural parameters as follows,

$$\hat{\beta}_{FE} = \left(\widetilde{X}^T\widetilde{X}\right)^{-1}\widetilde{X}^T\widetilde{y} \tag{9}$$

where
$\widetilde{X}$—the modified independent variables matrix $\widetilde{x}_{it}$,
$\widetilde{y}$—the modified dependent variables vector.

It remains to stress that in such a case, the strictly exogenous situation is avoided, and the values of variables for all units of the panel are constant in time. Next, the test for the variable free expression was done; its purpose was to justify the use of the estimation panel model with foreseen effects.

The other type of individual effects are random effects [30]. Assuming that individual effects ui are random variables and knowing that they are not correlated with pure random error $Cov(u_i, \varepsilon_{it}) = 0$, for $t = 1, \ldots, T$, the collective random error, composed of an individual effect and pure random error, $v_{it} = u_i + \varepsilon_{it}$, is characterized by the correlation on the same object, wherein it is assumed that there is no correlation for various objects. This situation then requires the application of the generalized least square method [31]. At the same time, the generalized least square estimator of the structural parameters $\hat{\beta}_{RE}$ has the form

$$\hat{\beta}_{RE} = (X^T \Omega X)^{-1} X^T \Omega^{-1} y \quad (10)$$

where
X—independent variable matrix,
Y—dependent variable vector,
Ω—reversible variance matrix and combined random error covariance.

An important aspect of the performed study was the appropriate choice between foreseen and random effects. The correlation occurrence between independent variables and random effects was tested by the Hausman test, which was very helpful in making the right choice [32]. This test allows verification of whether the estimator for foreseen and random effects was concurrent in terms of the same point. For the null hypothesis, the estimator of the generalized least square method is compatible and effective. The adopted hypothesis takes the form: $H_0 : Cov(u_i x_{it}) = 0$, against $H_1 : Cov(u_i x_{it}) \neq 0$. The statistics serving verification takes on the form $q = \hat{\beta}_{FE} - \hat{\beta}_{RE}$, and is concurrent to the distribution X^2 of k degrees latitude, where k is the number of independent variables. Lack of support for rejecting the null hypothesis indicates the compatibility of both estimators, foreseen and random effects, where the estimator for random effects was more effective. Rejecting the null hypothesis pointed to the choice of foreseen effects [33].

3. Results and Discussion

Having the main objective in mind, an effort was made to establish the influence of selected factors on how much support is given by co-op banks to local communities based on activities associated with their business responsibility towards the community. To that end, the correlation between selected factors characterizing co-op banks, such as net profits (thousands PLN), ROA (%), ROE (%), C/I, NPL (%), TRC (%), total assets (thousands PLN), total own funds (thousands PLN), total deposits (thousands PLN), total credits (thousands PLN), number of accounts and number of bank members, on the one hand, and on the other, the total sum contributed by a bank for prosocial activities (thousands PLN), the number of supported prosocial initiatives and relation of funds contributed to prosocial activities to the bank's net profits (%).

Through the performed study it appears that the relationship of contributed sums to prosocial activities to cooperative bank's profits was significantly correlated to their own funds (−0.27), total assets (−0.262), total deposits (−0.264), total credits (−0.258) and net profit (−0.266)—see Table 1. It is worthwhile noting that in all cases, the correlation coefficient was negative, which may indicate that as a bank grew, as expressed through total assets, total own funds, total deposits, total credits and net profits, the percentage of funds earmarked for community activity in net profits, fell. To be clear, this does not mean contributions to community activities fell, because they rose, but it does mean that the contribution dynamics were lower than the profit dynamics. For the remaining variables, the correlation levels were statistically insignificant.

Table 1. Pearson's linear correlation between selected characteristics.

Specifications	Relation of Funds Contributed to Prosocial Activities to the Bank's Net Profits (%)	Number of Supported Prosocial Initiatives	Total Sum Contributed by a Bank for Prosocial Activities (Thousands PLN)
Total assets (t)	−0.262	−0.044	0.191
Total own funds (t)	−0.270	−0.056	0.193
Total deposits (t)	−0.264	−0.035	0.188
Total credits (t)	−0.258	−0.053	0.214
Number of accounts (t)	−0.131	0.076	0.301
Number of bank members (t)	−0.157	−0.028	0.045
Net profit (t)	−0.266	0.042	−0.269
ROA (t)	−0.080	−0.021	−0.033
ROE (t)	−0.142	0.237	0.109
C/I (t)	−0.128	−0.104	−0.049
NPL (t)	−0.041	−0.019	0.083
TCR (t)	0.074	−0.128	−0.270

Abbreviations: PLN, Polish zloty; ROA, return on assets; ROE, return on equity; C/I, cost to income; NPL, nonperforming loans; TRC, total capital ratio.

When it comes to the number of initiatives supported by a bank, there was one significant variable, which was ROE. In this case, the correlation coefficient was positive, which means that with the growth of the profitability of a bank's own funds, the number of supported community initiatives also increased. Furthermore, the highest levels of ROE generally occurred in smaller banks located in rural communities. In the case of the remaining variables, the correlation relationship was low.

An interesting issue was the relationship between the sum of contributions and selected traits of co-op banks. In this case, significant correlation levels were observed in variables such as total client accounts (0.301), net profit (−0.269), total credits (0.214) and solvency level coefficient (−0.270). The highest correlation level was noted against total client accounts in a bank, which indicates that the more clientele the bank has, the more funds are earmarked for community purposes by the cooperative bank. This situation may be related to the efforts of attracting new clients and retaining existing ones. It was also linked to the second variable, total credits, while the number of clients was strictly connected to the number of the bank's clients, meaning that the more credits the bank granted, the more funds were spent on the social activities.

In the case of total sum contributed by a bank for prosocial activities, the correlation coefficient was negative for net profits and TCR; this may indicate that co-op banks, which attained higher financial results, were more forthcoming in sharing with the community in various areas of activity. Regarding TCR, the suggestion is that with a higher cumulative capital coefficient, banks earmarked lower sums for prosocial activities, which may be a result of the fact that a higher cumulative capital coefficient is partially responsible for lowering the profitability of bank activity, which normally results in lowering activities for community benefit.

The next research stage concerned the evaluation of correlation relationships between selected features with the assumptions of t-1 and t-2 delays, which meant testing the correlation relationship between the contribution share in net profits, total contribution count and total contributions per selected year (t) with descriptive traits of the studied banks within the previous year (t-1) and the previous two years (t-2). The purpose was to show whether the activity undertaken by a co-op bank was the result of the bank's current or past situation. The results are presented in Tables 2 and 3.

Table 2. Pearson's linear correlation between selected characteristics with one year lag (t-1).

Specifications	Relation of Funds Contributed to Prosocial Activities to the Bank's Net Profits (%)	Number of Supported Prosocial Initiatives	Total Sum Contributed by a Bank for Prosocial Activities (Thousands PLN)
Total assets (t-1)	−0.270	−0.127	0.092
Total own funds (t-1)	−0.276	−0.148	0.089
Total deposits (t-1)	−0.266	−0.115	0.095
Total credits (t-1)	−0.277	−0.144	0.108
Number of accounts (t-1)	−0.198	−0.032	0.128
Number of bank members (t-1)	−0.201	−0.135	−0.119
Net profit (t-1)	−0.271	−0.051	0.191
ROA (t-1)	−0.119	−0.038	−0.003
ROE (t-1)	−0.103	0.243	0.149
C/I (t-1)	−0.151	−0.077	−0.134
NPL (t-1)	−0.213	−0.079	0.028
TCR (t-1)	−0,009	−0.204	−0.353

Table 3. Pearson's linear correlation between selected characteristics with two years lag (t-2).

Specifications	Relation of Funds Contributed to Prosocial Activities to the Bank's Net Profits (%)	Number of Supported Prosocial Initiatives	Total Sum Contributed by a Bank for Prosocial Activities (Thousand PLN)
Total assets (t-2)	−0.274	−0.145	0.073
Total own funds (t-2)	−0.278	−0.175	0.066
Total deposits (t-2)	−0.283	−0.145	0.057
Total credits (t-2)	−0.280	−0.157	0.104
Number of accounts (t-2)	−0.187	−0.090	0.129
Number of bank members (t-2)	−0.225	−0.109	−0.101
Net profit (t-2)	−0.276	−0.093	0.218
ROA (t-2)	−0.065	−0.053	0.014
ROE (t-2)	−0.077	0.114	0.083
C/I (t-2)	−0.113	−0.131	−0.117
NPL (t-2)	−0.132	−0.278	0.018
TCR (t-2)	0.070	−0.191	−0.317

Taking into account the results presented in Tables 2 and 3, we can see that in the case of the relationship of funds contributed to prosocial activities with the bank's net profits with one and two-year lags, statistical significance was found. Almost the same variables were found when it comes to total assets, total own funds, total deposits, total credits and number of bank members. Additionally, the analyses of t-1 and t-2 periods demonstrated variable significance regarding bank membership; this may indicate that the cooperative bank's size was one of the most important issues, which indicates the level of support passing to the local community by the cooperative bank. Results shown in Tables 2 and 3 indicate that the absolute value of the correlation coefficient between essential features and the analyzed variable, contribution share in net profits, increased with the lag period, meaning that the highest correlation coefficient level was noted for the two-year lag (t-2). It should be stressed that in the analysis of one year lag, the NPL indicator was also significant because of its high impact on the bank's profitability, which could indicate that co-op banks consciously manage their business responsibilities and responsibly form their strategy in this area.

In the case of results pertaining to the factors most highly correlated with a number of banks supporting prosocial initiatives, it was confirmed that three variables were fundamental. The first of them concerned ROE, which reached the highest correlation coefficient level with one-year lag (24.3%), possibly indicating that co-op banks subordinate the number of supported initiatives to the profitability of own funds from the past year. The second variable which was connected with a significant level of correlation coefficient was the NLP (nonperforming loans) indicator, indirectly specifying risk levels

undertaken by the bank in credit activity. Of importance here is the fact that the coefficient was essential in the case of a two-year lag with a negative value; this could be a signal that as a result of faulty credit decisions in the past and problems with covering these debts by the bank's clients, the banks were forced to establish additional reserves for this purpose and therefore restrict procommunity activities in its market area. The third variable tied to explaining the variability count of co-op bank supported community initiatives was the TCR with one year lag (t-1); this situation may be indicated by the banks' objective to assure financial security to their clientele, therefore supporting a large number of community initiatives. The correlation between the total sum contributed by a bank for prosocial activities and the chosen factor was estimated. It appears that three variables were significant: TCR with one year lag, net profit with two years lag and TCR with two years lag, which showed that the total spend on prosocial activities was dependent on its safeness and the possibility of creating profit in the context of increasing the TCR to the safe level.

A further phase of the study regarded dynamic estimation of panel models enabling the assessment of influence by selected economic–financial data tied to the relationship of funds contributed to prosocial activities to the bank's net profits (%), number of banks supporting prosocial initiatives and the total sum contributed by a bank for prosocial activities (thousands PLN). Table 4 shows the estimation results for total contributions taking into account the two years (t-2) delay of the independent variables.

Table 4. Panel model for total sum contributed by a bank for prosocial activities (thousands PLN) regarding time lags of independent variables.

Variable	Coefficient	Std. Error	t-Ratio	*p* Value	Relevance
const	−2293.98	793.658	−2.8904	0.01470	**
NPL (t)	−2732.54	1441.4	−1.8958	0.08456	*
Total own funds (t)	−0.0257402	0.00946425	−2.7197	0.01994	**
Total own funds (t-1)	−0.0117605	0.00566892	−2.0746	0.06228	*
Total own funds (t-2)	−0.0454506	0.0106228	−4.2786	0.00130	***
Net profit (t-1)	0.0153377	0.00608458	2.5207	0.02844	**
TCR (t)	6038.79	2577.31	2.3431	0.03896	**
TCR (t-2)	6927.47	2651.55	2.6126	0.02414	**
Number of bank members (t)	0.00863161	0.00323345	2.6695	0.02181	**
Number of bank members (t-1)	0.00469135	0.00248434	1.8884	0.08562	*

R-squared: 0.941353; statistical significant at: 1% level: *** p value < 0.01; 5% level ** p value < 0.05; 10% level * p value < 0.1.

The results presented in Table 4 indicate that the following variables were significant to explain the total sum contributed by a bank for prosocial activities: NPL (t), total own funds (t), total own funds (t-1), total own funds (t-2), net profit (t-1), TCR (t), TCR (t-2), number of bank members (t) and number of bank members (t-1). The research shows that the most significant factors contributing to the sums given by the selected co-op banks for community initiatives were own funds, which had a negative regression coefficient indicating that the higher the value of co-op banks' own funds, the lower total value contributed.

This may be caused by the fact that larger co-op banks have a higher demand for capital for credit activity, and also that banks with greater capital are active in larger geographical areas, and as such, they may be less attached to local markets and communities and be more oriented on profit generation. Confirmation was found in the correlation coefficient for the solvency coefficient level (TCR), which for periods 't' and 't-1' was positive (indicating that if the bank secured an appropriate level of financial security for its activities and fulfilled the requirements of oversight authorities, it was inclined to contribute greater funds for community initiatives). In the case of the NLP indicator, it was observed that it had an important influence only on the current year and was negative, indicating that the greater its value, the lower the contributed funds for community initiatives. This resulted from a high level of defaulted credits, which negatively affected the financial position of the bank and disabled the said bank's community contributions, since the bank had to first secure its solvency and then consider how it could assist the community.

An important element was the number of bank members whose number for the current period and the previous year was statistically significant; this may have been caused by a bank's effort to fulfill the expectations of its members by contributing greater funds for community initiatives in the bank's area of activity, and since many of the bank's clients were also bank members, the members endorsed a higher distribution of funds. What was interesting among the independent variables pertaining to the amount of contributed funds by the studied co-op banks, was that a variable appeared which specified the result for net profit (t-1), which could indicate that a bank undertakes decisions regarding financing various community initiatives, not on the basis of current levels of financial effectiveness, but on the previous year's levels.

The study indicated that while explaining the variability in the number of bank supported prosocial initiatives by the selected banks, the relevant variables were: total credits (t), NPL (t), own fund (t), own funds (t-1), own funds (t-2), net profit (t-1) and the TCR (t-1). Table 5 exhibits that the most important variable in explaining the count of supported community initiatives was own funds, meaning that while making decisions regarding contributions, co-op banks took into account how high their operating costs were for the current and previous years. The overheads negatively influenced the number of supported initiatives, as higher costs restricted the financial potential of the selected banks. Similarly, in the case of contributed funds, the negative regression coefficient was evident in the co-op banks' own funds. This confirms that large co-op banks commit less effort to community service and concentrate on generating the highest possible profits, much like other commercial concerns. Concurrently, when banks were earmarking funds for local markets and community, they were observant of financial security; the model included variables such as NPL and TCR. Additional variables that appeared in this model showed the bank's credit volume, which demonstrated that in the actual procommunity activity, banks primarily focussed attention on the previous year's effectiveness and current credit activity, which will generate bank's future financial results.

Table 5. Panel model for a number of bank supported prosocial initiatives regarding time lags of independent variables.

Variable	Coefficient	Std. Error	t-Ratio	*p*-Value	Relevance
Total credits (t)	0.00200055	0.00106402	1.8802	0.08681	*
NPL (t)	−3860.37	1608.1	−2.4006	0.03520	**
Total own funds (t)	−0.019573	0.0105588	−1.8537	0.09077	*
Total own funds (t-1)	−0.0191896	0.00632454	−3.0342	0.01136	**
Total own funds (t-2)	−0.0242664	0.0118513	−2.0476	0.06525	*
Net profit (t-1)	0.0458134	0.0251974	1.8182	0.09634	*
TCR (t-1)	593.918	1567.84	0.3788	0.071204	*

R-squared = 0.934194; statistical significant at: 1% level: *** p-value < 0.01; 5% level ** p value < 0.05; 10% level * p value < 0.1.

The next phase of the study concerned evaluating the influence of the analyzed variables on the relation of funds contributed to prosocial activities to the bank's net profits (%)—see Table 6. The study indicated that two variables were important in the model, own funds for the previous year and current total accounts. Both coefficients had positive regressive coefficient values in the model, indicating that the level of own funds for the previous year and current total accounts equally exert a positive influence on contribution participation in net profits.

This may be the result of banks having good standing in the classification of own funds and the requirements associated thereof and, as such, they were able to earmark higher sums of their net profits for community initiatives. If a bank was to incur problems in assuring security to its clientele, it would then be forced to increase its own capital and thus reduce funds for community initiatives. Additionally, total accounts, established by a bank's clientele, also had a positive influence on the discussed indicator, which may be caused by a bank's desire to satisfy as many of its clients' expectations as possible, and as such, redistribute some part of the deposits to local markets and communities.

Table 6. Panel model relation of funds contributed to prosocial activities to the bank's net profits (%) regarding time lags of independent variables.

Variable	Coefficient	Std. Error	t-Ratio	*p*-Value	Relevance
Total own funds (t-1)	0.000109464	0.000535472	2.0443	0.06562	*
Number of account (t)	0.000343805	0.000162991	2.1093	0.05864	*

R-squared = 0.921129; statistical significant at: 1% level: *** p value < 0.01; 5% level ** p value < 0.05; 10% level * p value < 0.1.

The prosocial activity of cooperative banks in Poland is a particularly important factor, both in economic and social, as well as sociological terms. Direct, positive relations of bank clients with the employees and decision-makers of these banks, their mutual kindness, and understanding of the needs in the common area of operation are particularly valuable values. They generate faster development of the local community and qualitative development of the concept of "locality" in a modern sense.

The results entitle us to stress that Poland's banking sector is operating with a close attention paid to the cooperative banking sector from the context of corporate social responsibility. This work stresses that cooperative banks' foremost objective is acting in the interests of market development and community. Thus, their operations are directly tied to local development and national socioeconomic development. The effective operation of Poland's cooperative banking sector may enhance the accomplishment of Poland's policy in resisting financial efforts to exclude rural and or subrural areas from consideration. The research has also shown that cooperative bank operations have a complex theoretical base, and efforts to understand the way banks operate requires consideration of the banks' deliberations through a matrix of two aspects: financial and social. In this context, the article relates to assessing cooperative bank effectiveness, including the social aspects, which appears to be significantly most important in light of the current economic situation and local development strategy. Furthermore, the results exposed key factors conditioning the range and scale of procommunity activity undertaken by Poland's cooperative banks. To be additionally noted, the results also indicate practical solutions that can improve the operations of the cooperative banking sector in Poland.

4. Conclusions

The main purpose of this study was to determine the internal factors characterizing the degree of support being contributed to local communities, within the activity framework associated with a social responsibility of business by Poland's co-op banks. The research was carried out among a group of 56 co-op banks, which was about 10% of the total of active co-op banks in Poland. The requirements of random choice were not observed, therefore, the study results cannot be generally applied to all co-op banks operating in Poland. Nevertheless, the results and observations can be a valuable source of information for management and membership of co-op banks when undertaking decisions regarding supporting community initiatives under local conditions.

The contributing participation of social activity in net profits was determined by total assets, own funds, total deposits, total credits and level of net profits, meaning that the social aspects of Polish cooperative bank activities depended on the bank's size and profitability. This indicates that the realization of the double bottom line goals by cooperative banks in Poland depends on its financial performance and financial security. In this context, it can be stated that the realization of the cooperative bank's social goals needs an adequate level of its financial performance, because without it, the cooperative banks can not undertake social activities.

The results can be used as a roadmap for developing the Polish banking sector in the future. Continuation of social activities by the Polish cooperative banking sector will improve its stability and safety against commercial banks, and will make its contribution to increasing the financing of the Polish economy by cooperative banks greater, in particular locally, to farmers and micro-entrepreneurs who are often outside the target group of the commercial banks. Consequently, better stability and safety

of the cooperative banking sector will help to limit financial exclusion and to increase the banking penetration ratio within Polish society.

In addition, the local character of cooperative bank activity hinders their growth, thus widening the gap between the cooperative banking sector and the commercial banking sector. Moreover, the profit-maximizing approach of commercial banks intentionally renounces rural and urban–rural areas, which exacerbates the problem of financial exclusion in Poland. In spite of significant outlays, the issue of low penetration ratio and digitization of Polish society also has become more apparent. Therefore, part of society remains excluded, which makes the full implementation of sustainable development activities in Poland impossible. Achieving this requires support for the cooperative banking sector at a central level by offering cooperative banks a universal tool that will ensure stable and safe growth for the Polish cooperative banking sector so that it could carry out its mission to a much greater extent.

Author Contributions: Conceptualization: M.I.-B. and R.B.; methodology, M.I.-B., R.B. and N.A.A.; software, R.B.; formal analysis, M.I.-B., R.B. and N.A.A; investigation, M.I.-B., R.B. and N.A.A; resources, M.I.-B. and R.B.; data curation, M.I.-B., R.B. and N.A.A.; writing—original draft preparation, M.I.-B., R.B. and N.A.A; writing—review and editing, M.I.-B., R.B., N.A.A., I.B. and G.C.-J.; visualization, R.B.; supervision, M.I.-B.; project administration, M.I.-B. and R.B. All authors have read and agreed to the published version of the manuscript.

Funding: This work was supported by the Internal program of WULS-SGGW, financing outbound mobility of young academic staff and Ph.D. students for the purpose of research or studies and Erasmus + Program.

Conflicts of Interest: The authors declare no conflict of interests.

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