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Does the Gender of a Bank's President Have an Effect on Financial Performance? A Case Study of Poland's Cooperative Bank Sector

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Abstract: This study endeavours to determine Poland's cooperative banking sector's effectiveness based on the board of directors' president's gender. The examination indicated that in the case of Polish co-op banks, women fulfilled the function of bank president in smaller banks than did men. The volume of clients, members, general assets and equity in banks managed by men were generally more than double than the same values in banks managed by women. However, the effectiveness of the examined co-op banks managed by women was decidedly better with regard to ROA, ROE, net profits, cost/income ratio and non-performing loans indicator, than those banks under male management. In addition, by applying advanced statistical modelling, confirmed was that the gender of a co-op bank board of directors' president had significant influence on the bank's effectiveness and when that position was held by a woman, this circumstance had a positive effect on the bank's condition.

Keywords: gender, board of directors' president, cooperative bank, effectiveness.

1. Introduction

In recent years the issue of differentiating statutory entities – in this case financial entities – with regard to gender and the performance of said financial institutions has become relatively popular in Poland. One of the reasons for this attention is the widely considered observation regarding the low membership of women in the highest statutory corporate entities. In many countries around the world, the participation of women in high management positions in corporations continues to lag behind the numbers of men (Amin and Islam, 2014). Over the years this condition has incurred change as more women were appointed to management positions. This change has been a result of certain societal shifts which encouraged modifying women's status in the contemporary world. Additionally it also results from efforts made by various institutions to increase women's engagement in corporate management. Norway, as one of the first to declare by law, requires that corporate management be made to be at least 40% women (Ahern and Dittmar, 2012).

Similarly, Spain required an increase of women in management boards and management to a level at least 40% (Adams and Ferreira, 2009). Sweden warned its business community that if corporate management was not at least 25% women, business would feel the legislative consequences. Following Norway, Spain and Sweden were other European states encouraging their business community to increase women's engagement in important management bodies. For example, Poland already has a "Code of Best Practices for WSE Listed Companies" (2010), which encourages raising women's presence in the statutory bodies of corporations. A similar mechanism was introduced by the Netherlands, France and Germany (Holst and Schimeta, 2011; Böhren and Ström, 2010; GCGC, 2010). These changes are introduced on the conviction that women's presence in corporate management will have a positive influence on management operations (Adams and Ferreira, 2009). Others indicate that women's presence in key positions will lead to a better understanding of markets and clientele (Robinson and Dechant, 1997). They further indicate that corporations will also experience greater creativity and innovation. Smith, Smith and Verner (2006) point to the gains in efficient problem solving, and above all, point out that with women in management, the corporate image improves in the eyes of clientele and stakeholders (Ryan and Haslam, 2007).

Besides the benefits of women's participation in management, literature shows there is a detrimental aspect of this condition. Earley and Mosakowski (2000) point out that one-gender bodies tend to communicate in straight-forward fashion and agree to a consensus more quickly – a most important quality when making decisions. Furthermore, we can observe that 'male only' groups are more inclined to cooperation and less frequently suffer conflicts. Many studies show that balanced gender make-up of corporate bodies generates higher friction (Goodstein, Gautam and Boeker, 1994), extends decision making and significantly interferes with reaching compromise (Knight et al., 1999), and probably induce into higher corporate costs (Cox and Blake, 1991). Lau and Murnighan (1998) show that mixed corporate bodies have a negative impact on performance – a result of procrastination during decision-making.

Not less frequent are benefit/liability studies of women statutory corporate bodies and literature abounds with studies considering gender-varied management and boards of directors' impact on financial performance where contrasting voices find their venue. A number of studies point to a positive correlation gender-varied corporate management and financial performance. Erhardt, Werbel and Shrader (2003) determined that those American corporations where decision making is dominated by women show better ROA and ROI performance than those dominated by men. A study on the group of the largest American corporations (638) indicated a positive correlation between women's presence in management and profitability of total assets, and Tobin's 'q' indicator. Campbell and Minguez-Vera (2008) confirmed the positive correlation between women's management membership and corporate performance measured Tobin's 'q' for corporations in Spain. In 2011, Lindstaedt, Wolff and Fehre (2011) demonstrated a significant positive correlation between ROE, ROA, the corporation's book value and the percentage of women in corporate management in 160 German corporations. Mahadeo, Soobaroyen and Hanuman (2012) also demonstrated that women in corporate management positively influence return on assets (ROA). In Poland, Bohdanowicz (2011), among others, identified a correlation between gender-varied statutory entities and levels of ROA and ROE. Other studies indicate a negative relation between women's participation in corporate management and the level of performance. For example, Ahern and Dittmar (2012), Böhren and Ström (2010), and Adams and Ferreira (2009) demonstrated a negative correlation

between women in corporate management and Tobins 'q' indicator. Furthermore, Sharader, Blackburn and Iles (1997) also demonstrated a negative relation between women in American corporate management and levels of ROE, ROA, ROI and return on sales (ROS). Still other studies indicate absolutely no correlation between corporate performance and gender ratios in management, as in Randøy, Oxelheim and Thomsen (2006), Rose (2007), Miller and del Carmen Triana (2009), and Kochan, Bezrukova, Ely, Jackson, Joshi, Jehn, Leonard, Levine and Thomas (2003).

What becomes apparent when reviewing the referred to international studies is differentiation with regard to sample size, country where the study is carried out, and the commercial activity of selected corporations. Noticeable is that there are few studies examining the financial sector – especially banks – which is a fundamental element of modern economies as confirmed by many studies (Owoputi, 2014; Yilmaz, 2013; Rachdi, 2013). The strong connection between the banking sector and economy exists as well in Poland.

Poland's banking sector is divided into two categories – commercial and cooperative (co-op) where, because of its charter, co-op banks have an independent function in Poland's economy. Poland's co-op banks are an integral part of the banking sector. As is confirmed from the Polish Financial Supervision Authority data, at the end of 2015, of 598 functioning banks 560 were cooperative. More importantly, the total co-op banking sector possesses close to 8.5% of the total assets of Poland's banking sector, close to 7.5% of total borrowing, and close to 9.5% of total savings. Interestingly, Poland's co-op banks employ close to 20% of personnel working in the banking sector i.e. approximately 32.100 individuals working in 4.740 offices – 40% of all banking offices in Poland.

Another important element is that 80% of the co-op bank offices are located in smaller communities in rural and suburban areas. In result, the co-op banks are thus key players in commercial development in rural areas since commercial banks are little interested in these areas (Balina, 2015). Further, in many cases co-op banks counter tendencies of financial exclusion of less urbanized area residents. Nevertheless, co-op banks operate under a manifold theoretical basis and their identification requires examination of at least two aspects: first, they are cooperatives structured on the basis of a commercial interest; second, they are banks ergo credit institutions. This means that co-op banks

are entities of a complex structure and the services they perform have significant impact on their behaviour and activity. This complexity has influence on co-op banks' performance. An important condition that any co-op bank should fulfil is effective performance (Flejterski, 2008). For the bank to be effective, positive indicators and high profitability do not suffice; an effective co-op bank also accrues, over an extended period of time, assets and earned profits which should be properly exploited to insure the safety of its operation (Balina, 2013).

The analysis of international material for this article indicates that the issue of women in bank management and their influence on a bank's performance is an issue that has seen scant attention. That is why the main purpose of this paper is to examine if there is any relationship between gender of the president of the board and the performance of Polish cooperative banks.

For the purposes of this examination, a number of pertinent questions were generated which this article attempts to answer:

1. Are the co-op banks managed by women and men comparable with regard to client volume, membership, total assets and total equity?
2. Do Polish co-op banks managed by women gain higher performance levels than banks managed by men?
3. If the president of a co-op bank is a woman, is there an effect on bank performance?

2. Study methodology

The concept of performance can be variously defined e.g. attaining the highest possible result with limited outlay or attaining expected result with lowest outlay (Jaworski and Zawadzka, 2006). Taking into account the unique character of cooperative banking and the usefulness of the analysis to bank management and other interested groups, for this study the definition of 'performance' shall be (Kwiatkowska, 2012; Szustak, 2009):

- percentage of return on equity (ROE), net income/shareholder equity;
- percentage of return on assets (ROA), net income/total assets;
- efficiency ratio (C/I) as the operating costs including amortization to bank income adjusted by other operation income.

Applying these measurements enables the presentation of co-op bank operations from the perspective of income performance (ROE, ROA), and cost efficiency i.e. C/I. In the interest of establishing the inclination to undertake risk by women and men who manage co-op banks, an additional indicator has been employed – nonperforming loan (NPL), or contrasting defaulted loans to total loans (Kozak, 2010).

The study took advantage of balanced data panels for the years 2010 to 2014, of 40 operating co-op banks in Poland in municipalities of populations less than 50,000 residents. The data was collected in the second half of 2015, during direct interviews with the presidents of the selected banks. Gained information from the interviews was incorporated into the published bank reports in open-access data banks so as to avoid errors and missing data. To test the relationship between the gender of the board of directors' president and the performance of a co-op bank, the following data was used:

- gender of president (0 – male, 1 – female);
- net profit (thousands PLN);
- result of bank activity (thousands PLN);
- total balance (thousands PLN);
- non-financial sector total deposits (thousands PLN);
- non-financial sector total loans (thousands PLN);
- total own funds (thousands PLN);
- number of clients;
- number of bank membership;
- ROE (%);
- ROA (%);
- C/I (%);
- NPL (%).

In order to determine the differential significance between average co-op bank performance levels relative to president of the board's gender, the 't' test was applied to independent groups (Zimmerman, 1997; Box, Hunter and Hunter, 2005). In the subsequent phase of the study, panel models were evaluated to determine the correlation between the gender of the co-op bank president and levels of net profit, ROE, ROA, NPL, and C/I (Madala, 2006).

3. Study results and discussion

Initially, there was conducted a differentiation assessment regarding the sizes of the studied co-op banks in terms of the gender of the person filling the function of president of the board. The results of the analysis showed that women managed decidedly smaller institutions e.g. the total average balance for a bank managed by a woman was close to 211 mln PLN in contrast to 451 mln PLN in a bank managed by a man. The same tendency is observed with regard to amounts of deposits and credits for the non-financial sector in the considered banks i.e. banks managed by women, on average, over 176 million PLN in deposits and 158 million in credits where banks managed by men showed 390+ million PLN and 293 million PLN, respectively. Furthermore, women filled the most important statutory positions in banks that had only 40% the clientele or membership than banks managed by men. It bears noticing that not only the average values describing the bank aggregate varied, but also the minimum and maximum levels of the discussed characteristics were higher for banks managed by men and lower for women (see Table 1). The differentiation relevance regarding the sizes of banks managed by women and men was also confirmed by the t-test which indicates the validity of average differences in the two populations. Comparing the empirical values of the 't' statistics referenced against critical values, it was apparent that in the cases of total balances, non-financial sector deposits, non-financial sector credits, and clientele and membership numbers, the critical values were lower than the empirical values for the 't' statistics, which allowed rejection of the null hypothesis. Therefore it remains to accept as valid the notion that the size of the bank dictates the gender of the person managing said bank. This may be a consequence of the still functioning stereotype that only men are predestined to fill the highest functions in financial institutions.

Nevertheless, regardless of the study results of Poland's co-op banks that women manage smaller banks, the question remains regarding the performance of banks managed by men, and women. Reviewing the relative values which allow establishing bank performance, it was found that women, in comparison to men, attained higher average return (almost one percentage point) on equity capital, and higher average return (in total 0.45 percentage point) on total assets. The 't' test was carried out to determine the statistical significance of these differences, and regarding ROA, the difference was found to be significant; whereas

Table 1. Characteristics of the Research Data for Co-op Banks

Specification	Women				Men				't' statistics
	Average	Minimum	Maximum	Standard Deviation	Average	Minimum	Maximum	Standard Deviation	
Net profit (thou. PLN)	**2,731.8**	895.0	6,971.5	1,721.6	**4,368.8**	895.0	23,363.0	4,009.9	-6.67
Result for bank activity (thou. PLN)	**10,509.6**	2,967.0	23,019.5	5,907.1	**20,414.9**	5,848.0	105,118.5	19,777.8	-12.22
Total assets (thou. PLN)	**211,830.1**	41,069.0	583,779.5	15,479.5	**451,166.9**	114,447.3	2,451,051.0	50,388.0	-8.02
Total deposits non-financial sector (thou. PLN)	**176,746.3**	29,424.0	500,425.5	137,561.3	**390,057.1**	98,734.3	2,079,873.0	43,872.0	-8.94
Total credits non-financial sector (thou. PLN)	**158,213.9**	31,986.0	509,003.0	123,801.2	**293,170.6**	64,609.0	1,523,954.5	32,580.4	-7.27
Total own funds (thou. PLN)	**20,644.4**	5,784.0	48,833.5	12,325.7	**37,108.6**	9,406.0	177,964.0	39,627.5	-3.6
Client count	**18,232.6**	6,154.0	35,979.0	9,542.4	**42,126.7**	14,849.7	176,410.0	36,096.5	-12.23
Membership count	**1,444.0**	487.0	2,698.0	701.3	**3,823.6**	391.0	34,573.5	7,895.9	-94.40
ROE (%)	**16.12%**	6.23%	23.95%	3.32%	**15.18%**	6.87%	27.30%	4.43%	1.3
ROA (%)	**1.75%**	0.80%	3.00%	0.50%	**1.30%**	0.65%	2.21%	0.34%	7.54
C/I (%)	**60.95**	52.90	67.56	3.73	**63.49**	45.04	80.38	8.70	-3.25
NPL (%)	**1.84%**	0.08%	6.56%	1.60%	**3.98%**	0.31%	10.56%	2.77%	-5.08

Source: own research. Critical value for Student's t-test, degree of freedom – 8, significance $\alpha=0.05$ $t^*= 3.8325$

in the case of ROE, insignificant. Nevertheless, the study results indicate that women managers, considering bank performance, managed banks more efficiently as 'their' average returns were generally higher than those banks managed by men.

Analysing cost effectiveness in the studied banks, the difference in the C/I indicator for banks managed on the basis of the bank president's gender was not great – it was 2.54 percentage points. The 't' test indicated that this difference had no statistical significance. This may have been the consequence of requirements of administrative entities, oversight entities and demands of clientele regardless of management gender. In connection with this, even though the banks managed by women had better performance results, fulfilling these requirements, the women led banks were burdened with substantial expenditures which, in turn, lowered cost efficiency. Be that as it may, the average value of the C/I indicator for the studied banks led by women gained higher cost efficiency levels than the banks led by men. The last of the factors analyzed was the level of non-performing loans (NPL), which to a certain degree may be treated as a risk assessment and its effectiveness as an index. The analysis results – presented in Table 1 – indicate that banks led by women had a markedly lower NPL index (1.84%) as compared to men led banks (3.98). Further analysis confirming these results were of statistical significance indicating that the banks led by women generated notably lower levels of risk associated with credit operations than the banks led by men. What is important to note is that the lower risk index of the women led banks did not affect the bank's performance index since the average values of ROE, ROA, and C/I in said banks were all higher than those led by men (Table 1).

Pursuing further analysis, the following variables were retained: total assets (thou. PLN), total non-financial sector deposits (thou. PLN), total non-financial sector credits (thou. PLN), NPL (%), total own funds (thou. PLN), client count, membership count, and gender of bank president (0, 1). Next, keeping in mind the specificity of the data used and tools, an estimation panel model was generated for the individual explanatory variables i.e. net profit, ROA, ROE, C/I, and NPL. Table 2 presents that estimation using a generalized least squares method. In the case of the net profit model, five variables were relevant in determining values: total assets, total own funds, client count, membership count, and gender of bank president.

Table 2. Panel Models for Net Profits (thou. PLN), ROE (%), ROA (%), C/I (%) and NPL (%)

Specification	Net profit model			ROA model			ROE model			C/I model			NPL model		
	Regression coefficient	p-value	Variable significance	Regression coefficient	p-value	Variable significance	Regression coefficient	p-value	Variable significance	Regression coefficient	p-value	Variable significance	Regression coefficient	p-value	Variable significance
Constant	568.62500	0.0055	***	0.014393900	<0.00001	***	0.164003000	<0.00001	***	0.665288000	<0.00001	***	0.024034300	<0.00001	***
Total assets (thou. PLN)	0.0200733	<0.00001	***	0.000000009	0.43282		0.000000389	0.10123		-0.000000213	0.35895		0.000000236	0.00054	***
Total non-financial sector credits (thou. PLN)	-0,0025121	0,37098		-0,000000016	0,00109	***	-0,000000285	0,00578	***	0,000000282	0,006217	***	-0,000000261	<0,00001	***
NPL (%)	-1 781,5600	0,62096		-0,006561400	0,61689		-0,342735000	0,00988	***	-0,573188000	0,02759	**			
Total own funds (thou. PLN)	-0.1474830	<0.00001	***	-0.000000014	0.86269		-0.000003343	0.00007	***	0.000000900	0.57834		0.000000021	0.96458	
Client count	0.0218176	0.00231	***	-0.000000035	0.17513		0.000000202	0.43396		-0.000001059	0.03766	**	0.000000212	0.15834	
Membership count	-0.2288870	<0.00001	***	-0.000000103	0.41309		-0.000005723	0.00001	***	0.000004686	0.06088	*	-0.000002843	0.00009	***
Gender of bank president	1 051.41000	<0.00001	***	0.003969840	<0.00001	***	0.020169300	0.00946	***	-0.042735200	0.00519	***	-0.009519490	0.03346	**
R-squared	0.937847			0.450108			0.379544			0.307271			0.482513		
F(51, 168)	49.70599			2.696359			2.015071			1.461157			3.151571		

Source: own study. Critical statistical value F =1.42339, Significance level p-value: *** α<0.01; ** α<0.05, * α<0.1

In the case of the ROA model, two variables were relevant: total non-financial sector credits and gender of bank president. In the ROE model, five variables were relevant: total credits, non-performing loans coefficient, total own funds, membership count and gender of bank president. For the C/I model estimation, five variable were also relevant: total non-financial credits, NPL, client count, membership count, and gender of bank president. The last estimation model generated was for non-performing loans where three variables were relevant: total non-financial sector credits, membership count, and gender of bank president.

It is interesting to note that in all panel estimation models, the variable for gender of bank president is relevant for all. The variables for membership count and total non-financial sector credits were relevant for four estimation panels. The remaining variables were relevant for two or less estimation models. This means that the fundamental element influencing the performance of selected banks, for the years 2010–2014, was total non-financial sector credits granted. This may have been a result of the fact that in the case of Poland's co-op banks, savings, and loans are their primary activity which frequently is the sole source of revenue. In the case of the other variable – gender of bank president – it is exceptionally significant. This may be caused by the fact that personal character and predisposition are important for the management of a co-op bank and gender plays a role here.

4. Conclusions

This study's objective was to assess the performance of Poland's cooperative banks based on the bank president's gender. In the course of the study it became apparent that in co-op banks, where the president was a woman, those banks had a higher average performance level than those banks managed by men. The differential was especially noted in total return on assets, net profits, and non-performing loans indicator where the differential between analyzed groups was statistically significant. In case of profits generated by own funds and the C/I indicator, the nominal terms between banks managed by men or women, the differences were statistically insignificant. The study nevertheless confirmed that a differential in bank performance exists in the selected co-op banks regarding the gender of a bank's president.

Additionally confirmed was that in Poland's sector of cooperative banking, the banks managed by women are decidedly smaller than the banks managed by men. These differences were evident across the board – from total assets, through total deposits and ending with total membership and clientele.

Also noticed in the course of the study, the gender of the bank's president was a significant factor differentiating performance levels in the selected banks; clearly shown in the panel estimation models. The position of bank president, filled by a woman, had a positive influence on the performance level attained by a bank, because where performance indexes were used, such as net profits, ROE and ROA, the woman led bank experienced growth in these indices when certain factors remained constant. In the case of C/I indicator and NPL, the banks led by women returned negative values, *ceteris paribus*, which pointed to increased bank performance.

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