Gender Differences in Financial Behaviours

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The assessment of the impact of gender on financial decision-making was based on a representative survey 'Social Diagnosis 2015' conducted on a sample of over 34 thousand Polish citizens. When realising the research objective, a logistic regression model was applied – both with and without interaction effects.
The study has shown that the financial behaviours of men and women differ significantly. Men more frequently use the products and services available on the financial market such as, for instance, a debit card, or invest funds in shares or bonds. They are also more willing to take risks. However, as has been shown in the study, gender is not the only important variable influencing financial decisions. Equally important are age, social and professional status, education, or place of residence. This indicates that analysing behaviours on the financial market based solely on one variable may not be appropriate.

Keywords: *Gender; Financial Decisions; Financial Behaviour; Banking; Rrisk Perception.*

Introduction

Every person, family, or household makes certain financial decisions relative to its activity. Currently, also due to societal or legal obligations, we are often obliged to use offers of the financial market. However, not every person is willing to use the relevant products or services in the same way. Moreover, the market for financial services is becoming increasingly complex and complicated, and the responsibility for taking financial decisions rests solely on the individual making choices in this regard (Vyvyan *et al.*, 2014). Meanwhile, a number of studies have shown that the state of personal finances, economic prosperity and financial behaviours differ significantly between men and women (Fisher, 2010; Theodos *et al.*, 2014; Chen & Volpe, 2002; Lusardi & Mitchell, 2008). In addition, people's behaviour on the financial market is determined and conditioned also by other factors, such as, for instance, age, employment status, place of residence, education, income, number of people in the household, or experience in financial management (Borden *et al.*, 2008; Robb & Wooydyard, 2011; Agarwal *et al.*, 2009; Shivapour, 2012; Carter *et al.*, 2007). These variables affect actions taken by men and women. Also, experience gained in the use of financial services affects decisions about financial planning. Understanding the relationship between the knowledge of personal finance and specific behaviours in the financial market among women and men constitutes an increasingly important research problem, in particular, taking into consideration the fact that the level of this specific knowledge has been found to be generally low, especially among women (Lusardi & Mitchell, 2008; Lusardi & Tufano, 2015; Fonseca *et al.*, 2010).

The research objective of the article is to present and assess the impact of gender on making financial decisions. The study also identifies the variables significantly differentiating the scope and degree of the use of selected financial services by men and women. The present article strives to emphasise the impact of particular variables on financial decisions made in Poland by certain groups of people. The issue of proper behaviours on the financial market is essential from the perspective of individual interest as well as for the economy of the whole country. Such behaviours have impact not only on the financial status and wealth level of household members, but also on the economic growth and well-being of the society (Ciegis *et al*., 2017; Debski & Swiderski, 2016). At this point it is important to refer to the research conducted by other authors worldwide regarding financial decisions of men and women. The results of these analyses, particularly those conducted in the countries with more established economies, might be helpful in analysing and drawing conclusions from the research conducted in Poland, itself recognised as a developed country only recently. Such analysis is essential as the level of savings as well as the level of economic knowledge among Poles remains low (Debski & Swiderski, 2016; Kolasa & Liberda, 2015). Nonetheless, without establishing traits and factors which determine a willingness to undertake financial decisions by men and women, it is not possible to influence their attitudes regarding conscious financial decisions that could have a positive impact on their financial status. Therefore, both the subject of this article and the scope of the research undertaken seem to be important and worthy of note.

The article consists of five parts. Following this introduction, a review of literature provides an overview of the theory and research on the behaviour of men and women on the financial market depending on certain factors which play a significant role in determining this behaviour. The article then proceeds to inform readers about the data collection approach and explains the research method. The next chapter presents the outcome of the empirical research conducted using the method of logistic regression, both with and without interaction effects, and then this is followed by the concluding section.

Literature Review

Financial decisions are an important part of human activity and behaviour and exert an undeniable impact on current and future prosperity. This applies to both men and women and the latter, unlike in the past, are increasingly active in the financial market and the scope of their activity is on the increase. However, many aspects of their behaviours in this regard, differ from those of men (Brokesová, 2013). For instance, the use of banking services is dependent on gender, which affects in a multifaceted way the use of these services. Yiu *et al.* (2007), and Polasik and Wisniewski (2009) stress that women have a much lower adoption of Internet banking, as do less educated and lower earners. Men use online banking more often than women and this does not result solely from their preferences for this form of contact with the bank, but also from the fact that they feel more at ease with computers. In contrast, new functions in online banking are less attractive to women (Safeena *et al.*, 2014). Riquelme and Rios (2010) emphasise that when choosing the form of banking it is not only gender and age that are of importance, but also the roles played by the perception of risk, the perceived ease of use of the device for banking transactions, and the relative advantage in decision-making concerning the use of particular forms of banking. Referring to the purchase of financial services, Richard *et al.* (2010) emphasise that gender has an impact on the decision in terms of web behaviour that is the use of a specific service offered on the internet. Borzekowski *et al.* (2008) indicate, however, that gender is not a factor determining the frequency of possessing a debit card. What counts is age and education. Elderly people are far less likely to possess debit cards, as are those with lower education. The authors emphasise at the same time that the fact of possessing a debit card is probably due to the differences in the underlying desire to use a debit card. Mottola (2013) notes that women, on the one hand, are more likely to carry a balance on their cards, while on the other hand, they pay the balance in full less frequently.

The authors of this article are aware of the multitude of features and the needs of households that impact behaviours of their individual members which are displayed on the financial market, for example, in the area of taking out loans or investing surplus funds. However, also in this case, personal factors such as, for instance, gender and age are important (Shivapour *et al.*, 2012). Women are less likely than men to deposit or invest financial resources. That is because they buy food and other basic household items more frequently than men,

which limits their financial resources (Johnson, 2004). Differences in the scope of financial behaviours dependent on gender are also subject to change with the passage of time (Marlow & Swail, 2014).

Men have a higher self-perceived knowledge of investment than women and, equally important, on average women know less about personal finance than men. Also, as follows from the research conducted by Prudential on women's financial experience, women have less knowledge of financial products and are more risk averse than men (Prudential, 2012–2013). Undoubtedly, this fact affects their behaviour on the financial market (Chen & Volpe, 2002). As already mentioned, women are definitely more prescient and avoid making investments with increased risk; however, they often generate higher rates of return (McDonald, 1997; Kahn, 1996; Bellemare & Kroger, 2007).

Croson and Gneezy (2009) point to the gender differences in risk preferences, social preferences, and competitive preferences. Powell and Ansic (1997) and Fisher (2010) indicate the occurrence of risk aversion among women, since they are more likely than men to have at least one insurance policy. However, Gandolfi and Miners (1996) stressed that the impact on making informed financial decisions about the future, including the purchase of insurance by women and men, is determined by many factors – not just by gender. Other factors include the level of their education, financial literacy, the price of the insurance, and the level of income (Lusardi & Mitchell, 2008; Fisher, 2010; Ward & Zurbruegg, 2002).

With regard to attachment to money and making one's happiness in life dependent on possessing money, gender differences in money behaviours, as shown by Furnham *et al.* (2015), could have a biological and evolutionary basis. It could also be a product of socialisation and social structure and can therefore be relearned. The research conducted by Kahneman and Deaton (2010) led to making a generalisation that having more money does not translate into achieving greater happiness in life, but less money is associated with emotional pain. Yet men tend to consider pay as more important than women do, especially during their career peaks when their expectations have been found to be almost 50 % higher (Tang, 2007; Major & Konar, 1984). Women, by contrast, perceive non-financial elements of their work to be more significant, and these elements are, for example, 'job security' or 'task ease' (Major & Konar, 1984). Women are more likely than men to say that money is not important to be happy in life (38 % − 35 %), but the proportion of women holding this attitude generally increases with age and decreases with household income (Financial Literacy Foundation Advisory Board, 2008). This does not mean, however, that women are not emotionally connected to money. On the contrary, money is a more emotionally loaded topic for women than it is for men. Spending money, on the one hand, gives them pleasure, while on the other hand, it leads to long-term regret (Pine, 2009).

Furthermore, research shows that women are characterised not only by a rational approach to taking direct financial decisions, but also display this characteristic when making decisions related to possible later financial problems. Women decidedly less frequently

have outstanding commitments that should be collected by a collection agency (Wiltshire *et al.*, 2011). Women are also less likely to have a revolving loan account than men (Wang *et al.*, 2014). In terms of financial decisions, women exhibit debt aversion (Carter *et al.*, 2007). As indicated by Fungacova and Weill (2014), this unfortunately has its drawbacks. Women borrow from their families and acquaintances less frequently than men do. However, since their earnings are lower and their creditworthiness is lower too, they more often decide to use shadow banking.

Methodology and Data

The article uses data obtained from individual interviews conducted with respondents of the 'Social Diagnosis 2015' study with a sample of 34.9 thousand Poles aged 16 and over [1]. 'Social Diagnosis' is a comprehensive study of the conditions and quality of lives of Poles as assessed by themselves. The study has been conducted on a regular basis since 2000.

For the purpose of the study, respondents aged 18-64 were selected (respondents in the study were actually aged 16-105). The age restriction resulted from the fact that the research focus was on financial decisions. Taking into account only adults is determined by the fact that only such persons have the capacity to make independent decisions. The limit to people aged under 64 is the result of the reduction in the numbers of people aged over 65 who remain professionally active in Poland. For example, the proportion of women aged 55–59 who are professionally active is 54.4 % (men 70.9 %), for those aged 60–64 it is 17.2 % (men 42.2 %), and for women aged 65 and over only 2.9 % (men 7.9 %) (data obtained from the Central Statistical Office, CSO, 2015). In addition, the group referred to as '65 or over' is very heterogeneous, since it covers both individuals who work and are socially active as well as those that are socially inactive and physically non self-reliant pensioners. Both of the indicated factors affect behaviours observed on the financial market.

This work verified the following research hypotheses:
H1: Females and males show different financial behaviours.
H2: Men are more active in the financial market.
H3: The differences in the behaviours of women and men displayed in the financial market are also affected by variables other than gender.

During the realisation of the research objective the logistic regression method was employed (Cramer, 2003), both with and without interaction effects. This method was used since the impact of predictors on the individual explanatory variables may depend on the interactions between them.

The dependent variables in individual models were dichotomous variables, *i.e.*, dummy variables. They took the following form:

$$Y = \begin{cases} 1, & \text{if it occurred} \\ 0, & \text{if it did not occur} \end{cases}$$

While constructing individual logistic regression models in the article, the following dependent variables were adopted: Y_1 – the use of banking services (M1), Y_2 – possession of a debit card (M2), Y_3 – investing in production, trade or services during the past year, (M3), Y_4 – possession of private life insurance (M4), Y_5 – considering money as a condition for having a happy life (M5), Y_6 – returns from stocks, bonds or from participation units held in an investment fund in the past year (M6), Y_7 – taking out a loan or credit in a non-banking institution in the last year (M7).

Due to the fact that financial decision-making is very complex, and the corresponding research needs to take into account many variables (Roa Garcia, 2013), the present work apart from the gender variable (a female - 0, a male - 1) includes also the following control variables, *i.e.*:
- age (aged 24 and under - 1, aged 25-34 - 2, aged 35-44 – 3, aged 35-44 - 4, aged 45-59 - 5, those aged 60-64 form a reference group - 0),
- social and professional status [2] (public sector employees - 1, private sector employees - 2, entrepreneurs - 3, farmers - 4, pensioners and retirees - 5, school and university students - 6, the unemployed and economically inactive form a reference group - 0),
- place of residence (cities with over 500 thousand residents - 1, cities with 200-500 thousand - 2, cities with 100-200 thousand - 3, cities with 20-100 thousand - 4, cities with less than 20 thousand residents - 5, rural areas form a reference group - 0),
- education (primary and lower - 1, lower secondary and basic vocational – 2, secondary - 3, higher and post-secondary education form a reference group - 0),
- being satisfied with your financial situation (the continuous variable is presented on the following scale: very satisfied - 1, satisfied - 2, fairly satisfied - 3, fairly dissatisfied - 4, dissatisfied - 5, and very dissatisfied - 6),
- number of persons in the household (a continuous variable),
- being satisfied with the past year (yes - 1, no - 0).

The choice of variables for each logistic regression model was made using Wald's backward elimination method, *i.e.*, stepwise regression. Individual logistic regression models were estimated in a way that all statistically insignificant variables were removed.

The verification of the validity of the models examined in the article was performed using the Hosmer-Lemeshow test. The chi-square value of individual tests proved to be statistically insignificant, which means that these models are a good fit to the data. The Cox and Snell pseudo R-squared coefficients are generally low; however, the high values of the Hosmer-Lemeshow test and the fact that the variables were statistically significant allow the conclusion

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[1] This is a panel survey and its concept was developed by the Council for Social Monitoring. In the years 2000-2015 a total of eight rounds of surveys were conducted with a total of 83.9 thousand individual interviews performed (Social Diagnosis, 2015).

[2] For this trait, in accordance with the study 'Social Diagnosis 2015', the division of subjects was made with respect to their main source of income, for instance, an entrepreneur is a person whose main source of income is their self-owned business operated outside farming, or with regard to their social status, e.g. students.

to be made that the models are correct, *i.e.*, they successfully went through verification and are reliable.

Appropriate calculations were performed using the IBM program SPSS Statistics 23.0.

Results
Logistic Regression Models Without Interactions

Data contained in Table 1 indicate that gender in almost all logistic regression models has a statistically significant effect on the dependent variables analysed. Differences between women and men were in fact not found; the only cases where differences occurred were taking out a loan or credit in a non-banking institution in the past year (M7) and possession of private life insurance (M4). This means that both women and men have equal opportunities to borrow money on the non-banking market, for instance, via the phone and both genders equally think about buying life insurance.

Table 1

Estimates of the Parameters of Logistic Regression Models (Exp (B) and Significance Symbol[a]) Without Interaction Effects

Variable	M1	M2	M3	M4	M5	M6	M7
Gender	0.801***	1.266***	1.653***	0.933	1.849***	1.678***	0.904
Aged 60-64 (base)	***	***	***	***	***	-	-
Aged 24 and under	0.392***	0.835	2.611***	0.646**	2.345***	-	-
Aged 25-34	0.726***	1.059	3.425***	0.568***	1.534***	-	-
Aged 35-44	1.267*	1.261**	2.625***	0.858	1.146	-	-
Aged 45-59	0.978	1.107	1.802**	0.919	0.964	-	-
Unemployed (base)	***	***	***	***	***	**	***
Public sector employees	12.346***	1.185*	1.383	0.091***	0.715***	2.336**	1.481*
Private sector employees	5.650***	1.282***	1.664**	0.158***	0.916	2.481***	1.295
Entrepreneurs	9.901***	1.745***	20.408***	0.709**	0.986	2.611**	0.909
Farmers	4.673***	0.664***	8.130***	0.634***	0.833*	1.080	0.541*
Pensioners and retirees	2.950***	1.001	1.238	1.258*	0.723***	1.773	0.907
School and university students	0.804*	1.577**	1.188	0.723*	0.657***	1.337	0.075***
Rural areas (base)	***	***	-	*	***	***	-
City >500k	1.992***	2.597***	-	1.196	0.701***	2.825***	-
City 200-500 k.	1.742***	2.165***	-	1.300**	0.880	2.331***	-
City 100-200 k.	2.123***	1.404***	-	1.174	0.895	2.488***	-
City 20-100 k.	1.312***	1.222***	-	1.011	1.072	1.883***	-
City < 20 k.	1.027	1.242**	-	1.076	1.114	0.926	-
Higher and post-secondary (base)	***	***	***	***	***	***	***
Primary and lower	0.103***	0.371***	0.373***	0.996	1.978***	0.222***	2.309***
Lower secondary and basic vocational	0.188***	0.409***	0.480***	0.730***	1.474***	0.201***	1.972***
Secondary	0.435***	0.576***	0.720**	0.831**	1.227***	0.467***	1.828***
The financial situation of your family	0.838***	-	0.876***	0.932***	1.176***	0.774***	1.318***
Number of people in the household	0.970*	-	-		-	-	-
Do you think the past year was a good one for you?	-	-	-	0,912***	0.734***	-	0.563***
Constant	11.364***	0.344***	0.014***	5.525***	0.177***	0.024***	0.009***
Cox–Snell's R-squared	0.226	0.078	0.065	0.200	0.066	0.024	0.014
Nagelkerke's R-squared	0.356	0.113	0.205	0.269	0.094	0.124	0.061
Hosmer-Lemeshow (*p*-value)	0.421	0.276	0.324	0.350	0.165	0.735	0.156
Log likelihood	12,094.785	13,029.192	4,760.273	10,593.114	17,105.337	2,875.674	3,551.169
N	16,127	11,846	15,207	9,351	14, 937	15,205	15,044

[a] *Note: Significant individual coefficients indicated by ***p<0.001; ** p<0.01; *p<0. 05*
Source: Own study based on (Social Diagnosis, 2015).

The study shows that men are generally more active in the financial market than women. Although they have lower odds (by 20 %) of using banking services than women (M1), they have higher odds (by 27 %) of possessing of a debit card (M2). In addition, they show a greater propensity to invest in production, trade or services (65 % higher odds) (M3) and to make profits from investments in stocks, bonds or in participation units of an investment fund (68 % higher odds) (M6). Besides, men report a far greater attachment to money than women do (85 % higher odds) (M5). The article also examined whether apart from the gender effect there are other predictors that determine behaviours on the financial market. It turns out that banking services (M1) are most frequently used by those aged 35–44, with higher education, living in cities of 100 up to 200 thousand residents, and by employees of the public sector. It was further observed that the lower the degree of satisfaction with the financial situation of one's own family and the larger the number of people in the household, the lower the propensity to use banking services. An increase in dissatisfaction with the financial situation, *e.g.*, from a

fairly dissatisfied level to dissatisfied, lowers the odds of using banking services, and an increase of one person per household also reduces these odds.

Using banking services is usually connected with possessing a debit card. Research shows that entrepreneurs display the highest odds (1.7 times higher compared to the unemployed) of possessing one, as do people with higher education and residents in cities with over 500 thousand people (M2).

People aged 25−34 with higher education, and primarily entrepreneurs, also show the greatest propensity to invest in production, trade or services. These odds are increased when they are satisfied with their financial situation (M3).

The research has also found that persons aged over 35 exhibit a significant increase in risk aversion, as shown by the fact that among those aged 35−59 and 60-64, there were no differences in the tendency to have personal life insurance (M4). These odds increase when one has higher education. It falls along with decreases in satisfaction with the financial situation (by 7 % when the degree of satisfaction lowers by one level). Also, individuals who consider the past year to be successful are less interested in having life insurance.

As a result of the study, significant differences between certain groups of individual explanatory variables were found, relative to money as a category conditioning a happy life (M5). It was found that men and the youngest people, *i.e.*, aged under 24, attached the greatest importance to money. School and university students attached the smallest importance to money (the odds are 34 % lower when compared to the unemployed and professionally inactive people) and people living in the largest cities, *i.e.*, with over 500 thousand residents (the odds are 30 % lower when compared to residents of rural areas and smaller towns). Attachment to money also decreases along with increasing education. People with primary education indicate that money brings happiness almost twice as frequently when compared to people with higher education. The study showed that with increasing dissatisfaction with the financial situation of their own family, the conviction that happiness in life depends on money increases. This is just the opposite in the case of people who consider the past year to be successful. Those satisfied with the past year to a lesser extent (27 % compared to those dissatisfied) tend to admit that money conditions the achievement of happiness. It can, therefore, be concluded that satisfaction with life to a greater extent is affected by factors other than financial issues.

The article also attempts to indicate which other variables, other than gender, affect the fact of generating returns from stocks, bonds or from participation units held in an investment fund (M6). It transpired that the odds are higher among those better educated (in the case of those with, at most, primary education, odds are 78 % lower than in the case of those with higher and post-secondary education) and those who are dependent on the place of residence. Among people living in cities with over 500 thousand residents the odds of obtaining benefits from an investment made are 2.8 times higher compared to the rural population.

As already mentioned, gender does not determine the propensity to borrow in non-banking institutions (M7). Similar conclusions can be drawn from the FINRA Investor Education Foundation's 2012 National Financial Capability Survey conducted on the US market. It shows that there is no statistically significant relationship between genders in the use of alternative financial services, such as payday loans or pawn shops (Theodos *et al*., 2014). With regard to our own research, other significant statistical predictors can be pointed to. It turns out that those who show the greatest interest in loans from non-banking institutions are public sector workers, and the least interested group are school and university students. The research finds that the odds definitely decrease along with increasing education.

Among people with, at most, primary education, the odds are approximately 2.3 times higher than among people with higher and post-secondary education. In addition, the lower the degree of satisfaction with the financial situation of one's own family, the odds are higher (they increase by approximately 32 % with satisfaction decreasing by one level). Persons that consider the past year to be successful also have lower odds of using services offered by non-banking institutions (approximately 44 % lower).

Logistic Regression Models with Interactions

So far, the authors have presented in a general way how gender and other qualitative and quantitative explanatory variables determine behaviour in the analysed areas of the financial market. In the next stage the results of the research were elaborated on by including in the logistic regression models the effects of interactions between a gender and individual predictors.

Table 2 presents models containing only those interaction effects which are statistically significant.

Table 2

Estimates of the Parameters of Logistic Regression Models (Exp (B) and Significance Symbol[a]) with Interaction Effects

Variable	M1	M2	M3	M4	M5	M6	M7
Gender	1.027	0.996	1.653***	1.144	1.604***	1.678***	1.272
Aged 60-64 (base)	***	-	***	***	***	-	-
Aged 24 and under	0.406***	-	2.611***	0.660**	1.923***	-	-
Aged 25-34	0.866	-	3.425***	0.587***	1.359**	-	-
Aged 35-44	1.366*	-	2.625***	0.857	1.015	-	-
Aged 45-59	0.898	-	1.802**	0.929	0.909	-	-
Unemployed (base)	***	***	***	***	***	**	***
Public sector employees	9.524***	1.161	1.383	0.087***	0.715***	2.336**	1.481*
Private sector employees	5.650***	1.269**	1.664**	0.150***	0.919	2.481***	1.295

Variable	M1	M2	M3	M4	M5	M6	M7
Entrepreneurs	5.848***	1.855***	20.408***	0.568***	0.996	2.611**	0.909
Farmers	3.460***	0.761	8.130***	0.702*	0.832*	1.080	0.541**
Pensioners and retirees	2.674***	0.939	1.238	1.406*	0.716***	1.773	0.907
School and university students	0.664**	0.970	1.188	0.691	0.660***	1.337	0.075***
Rural areas (base)	***	***	-	*	***	***	-
City > 500 k.	2.012***	2.604***	-	1.199	0.700***	2.825***	
City > 200-500 k.	1.748***	2.174***	-	1.309**	0.876	2.331***	-
City > 100-200 k.	2.110***	1.416***	-	1.172	0.892	2.448***	-
City > 20-100 k.	1.321***	1.229***	-	1.017	1.068	1.883***	-
City < 20 k.	1.034	1.253**	-	1.085	1.113	0.926	-
Higher and post-secondary (base)	***	***	***	*	***	***	***
Primary and lower	0.106***	0.357***	0.373***	1.383*	1.965***	0.222***	2.309***
Basic vocational and lower secondary	0.193***	0.467***	0.480***	0.846	1.472***	0.210***	1.972***
Secondary	0.446***	0.625***	0.720**	0.965	1.222***	0.467***	1.828***
The financial situation of your family	0.899***	-	0.876***	0.911***	1.176***	0.774***	1.318***
Number of people in household	0.966**	-	-	0.935***	-	-	-
Do you think the past year was a good one for you?	-	-	-	-	0.734***	-	0.563***
Gender*Aged under 24	0.948	0.883	-	-	1.458**	-	-
Gender*Aged 25-34	0.713*	1.255	-	-	1.244	-	-
Gender*Aged 35-44	0.848	1.587***	-	-	1.046	-	-
Gender*Aged 45-59	1.196	1.305*	-	-	1.109***	-	-
Gender* Public sector employees	1.976**	1.172	-	1.346*	-	-	-
Gender* Private sector employees	1.186	1.100	-	1.316**	-	-	-
Gender*Entrepreneurs	2.445*	0.995	-	1.706**	-	-	-
Gender*Farmers	2.016***	0.843	-	1.016	-	-	-
Gender* Pensioners and retirees	1.361*	1.202	-	0.903	-	-	-
Gender* School and university students	1.667**	2.646***	-	1.255	-	-	-
Gender*Primary and lower	-	1.095	-	0.474***	-	-	-
Gender* Basic vocational and lower secondary	-	0.765*	-	0.723**	-	-	-
Gender*Secondary	-	0.803*	-	0.685***	-	-	-
Gender* The financial situation of your family	0.870***	-	-	-	-	-	-
Constant	9.346***	0.368***	0.014***	5.128***	0.192***	0.024***	0.009***
Cox–Snell's R-squared	0.229	0.080	0.065	0.203	0.067	0.024	0.014
Nagelkerke's R-squared	0.361	0.115	0.205	0.273	0.095	0.124	0.061
Hosmer-Lemeshow (p-value)	0.346	0.380	0.324	0.681	0.619	0.735	0.156
Log likelihood	12,029.532	13,007.980	4,760.273	10,555.813	17,095.107	2,875.674	3,551.169
N	16,127	11,846	15,207	9,351	14,937	15,044	15,205

[a] Note: Significant individual coefficients indicated by *** p<0.001; ** p<0.01; * p<0.05
Source: Own study based on (Social Diagnosis, 2015).

The above data show that gender has a significant impact on behaviours on the financial market in almost all analysed areas of the market. However, this impact varies with respect to each model depending on age, social and professional status, educational level, and the degree of satisfaction with the financial situation of one's family. Only in the case of modelling the odds of taking out loans in non-banking financial institutions were differences between men and women not found. This applies to both genders as the main effect, and to gender interacting with other predictors. This implies that men and women have equal opportunities to borrow money on the non-banking institutions market.

The differences between men and women in activity on the financial market can usually be seen in relation to social and professional status. It is certainly the case in the use of banking services, debit cards and having private life

insurance, although these differences only apply to certain groups.

When analysing the odds of using banking services (M1), it can be noted that the gender effect in relation to this variable is the strongest among entrepreneurs, where men's odds are 2.4 times higher. Taking into account age, the gender effect is visible but only among persons aged 25–34, where men are 29 % less likely to use banking services. In other age groups, men and women do not differ in this regard. Cognitively interesting conclusions can be drawn from the study of the use of banking services relative to satisfaction with the financial situation of one's own family. It transpires that a decline in satisfaction with the financial situation by one level causes a decrease in the odds of using banking services among women (by 10 %), and among men (by 13 %). Financial dissatisfaction to a greater degree means greater financial exclusion for

'offended' men than for women, who, as mentioned previously, show more rational approaches.

The analysis of the tendency of men and women to use a debit card found that, as in the case of use of banking services, men and women generally have equal opportunities for activity. In this area of the financial market, some differences between genders can be noted depending on age, social and professional status, and educational background. As follows from the interaction effect, statistically significant differences occur among people aged 35–44, where men are 59 % more likely to use a debit card than women, and among people aged 45–59, where the effect is, however, weaker (odds are higher for men only by 31 %). In the other age groups, no differences between men and women were found. In addition, the gender effect can be noted in social and professional status, but only in the category of school and university students, where men are again more likely to use a debit card (by 165 %). With regards to education, women have higher odds, but only among persons with, at most, lower secondary and vocational education (by 23 % compared to men) and with secondary education (by 20 % compared to men). Among groups of people with, at most, primary education and higher and post-secondary education there were no differences found between men and women in the extent of the use of a debit card (M2). Among the most educated, statistically significant differences between genders regarding the possession of private life insurance (M4) were not found, either. These differences, however, are visible in the case of the lower levels of education, where odds for men, when compared to women, are the lowest among persons with, at most, primary education (53 %). It can be concluded that among people with education below the higher education level, women are more likely to have private life insurance. Moreover, statistically significant differences between genders occur relative to social and professional status. The largest difference between men and women occurs among entrepreneurs, where the odds for men of having personal life insurance are 71 % higher than among women. The second largest difference is found among public sector employees (35 % higher odds), followed by private sector employees (32 % higher odds). Within the remaining categories of social and professional status no differences between genders were found. Therefore, farmers, pensioners and retirees, students, the unemployed and the economically inactive exhibit the equal odds of using private life insurance.

In terms of the perception of money (M5), based on the main effect it could be indicated that men are approximately 60 % more likely to say that money is a condition for having a happy life. Meanwhile, the interaction effect shows that among people aged under 24 and 45–59, the situation looks different. While amongst persons aged under 24 the gender effect is increasingly powerful, *i.e.*, men have an approximately 130 % higher odds of perceiving happiness in life through the prism of money, in the case of people aged 45–59, this effect is weakening, *i.e.*, 78 % higher odds for men. In the case of other variables, no statistically significant interaction occurring between them and gender was found. This means that men, compared to women, regardless of personal characteristics (*e.g.*, the level of education, social and professional status, satisfaction with the financial situation of one's own family, the number of persons in the family) are characterised, as is apparent from the main effect, by a 60 % higher odds of making happiness in life dependent on money.

When analysing the differences between genders regarding opportunities to invest in production, trade, or services (M3) and gaining returns from investments in shares, bonds or participation units of a mutual fund (M6) in combination with other predictors, we can conclude that there exists no interaction between them. Thus, the estimates of the effects of the main logistic regression models that do not allow for interactions were confirmed. On the basis of the calculations made, it can be indicated that men have an approximately 65 % higher odds of investing in the business of manufacturing, trade, or services and gaining returns from equity investments (by 68 %) than women (however, it should probably be taken into account that 2015 saw an economic upturn, during which men were more effective investors. They make more risky investments and doing so on the bull market is more profitable). These differences are the same in all analysed categories of individual explanatory variables. In the case of taking out loans from non-banking institutions (M7), again, no differences between men and women were found.

Conclusion

The logistic regression analyses carried out in this article made it possible to find statistically significant predictors that determine behaviours in selected areas of the financial market. The study also defines the interactions between specific predictors in relation to gender. The estimates of the parameters of logistic regression models, with or without interactions, yielded similar results. The results obtained confirmed the hypothesis that males and females show different financial behaviours. The differences between men and women as regards behaviours on the financial market are, in fact, visible in most cases. The gender effect does not occur only in the case of taking out loans from non-banking financial institutions. This may mean that in the case of making a decision regarding a financial commitment, it is undertaken by the household as a whole rather than individually by the household members. Both genders differ primarily in their approaches to money considered as a category that conditions happiness. In this aspect men, in particular young ones, more frequently make their life happiness dependent on money. In other cases, men appear to be generally more active in the financial market. Thereby, the second hypothesis was verified positively. Men are not only more likely to have a debit card, but also to invest in production, trade, or services. Males more frequently also gain returns from investments made in capital market instruments.

The study also confirmed the third hypothesis posited in the article, that it is not only gender that is important as regards factors affecting financial decisions. The full analysis presented in the article required taking into account a number of other socio-economic variables that determine behaviours in this market. Age, education, social

and professional status, or place of residence are also significant and their impact varies regarding different questions. Groups of entrepreneurs, people living in cities, those satisfied with their financial situation, and the well-educated show a propensity to use services available in the financial market.

The results of the above study have broadened extant knowledge concerning the impact of particular factors on financial decisions in Poland, in both theoretical and practical terms. By including and paying special attention to the differences regarding financial decision-making processes between men and women, this article fills a research gap in relation to the extant research carried out on the Polish market.

In the light of these comments, firstly, the study is important for financial institutions that want to raise interest in relevant services in the financial market as they should address their offer adequately. Secondly, for the State, however, if it aims to limit the financial exclusion of women, it should not only increase the share of women using individual products, but also affect the individual variables that increase financial knowledge. The role of the State is still to take care of the education of its citizens, and educated people, as indicated in the study, use the services offered by the financial market more frequently and consciously. Thirdly, for households and their members, depending on who makes the financial decisions in the household, the way in which these decisions are taken is different, and therefore the financial situation of households may differ.

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