
Old-Age Savings Behaviour - Is Gender an Important Factor?

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Abstract:

Purpose: The purpose of this paper is to determine whether men and women exhibit different patterns of saving for old age outside the pension system and whether women's education and income determine their old-age savings behaviour.

Design/Methodology/Approach: The analyses presented in this paper derive from a representative study that covered 1,000 individuals and was conducted in Poland. The chi-square test of independence (χ^2 test) was used for each pair of characteristics.

Findings: The research confirmed that men and women exhibit different patterns of saving for old age. This discrepancy was confirmed in a study which concerned old-age savings and was conducted among men and women (general study) without considering the respondents' age. The general study did not prove the relationship between gender and the savings amount. In the case of the groups in which the respondents' age was taken into account, the relationship between gender and the possession of savings was confirmed in the group of respondents over 49 years of age. Women over 49 years of age save less frequently than their male peers. With regard to the relationship between gender and the savings amount in particular age groups covered in the study, our research showed that such a relationship exists in the group of respondents below 40 years of age. The analyses conducted in the women-only group demonstrate the existence of a relationship between education and the possession of old-age savings. We also confirmed that the possession of old-age savings among women depends on their personal income.

Practical Implications: In order to incentivise women to save for old age, the state should encourage them to display appropriate savings behaviour and strengthen the factors influencing this behaviour. It is also necessary that educational programmes and initiatives oriented at strengthening women's financial security should be provided.

Originality/Value: The studies discussed in this paper emphasise different approaches to saving for old age among men and women. This issue is becoming increasingly important from the social aspect as the non-saving women receive ever lower pensions, which can result in lack of women's financial security in inadequate pension systems.

Keywords: Old-age savings, savings, gender, income, education.

JEL Classifications: D1, G4, G5, J16.

Paper type: Research article.

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1. Introduction

For several dozen years savings and saving-related issues have been the subject of research in the fields of economics, sociology, and psychology. The significance of these issues is emphasised by the fact that scholars have considered them from various aspects and in the light of different theories. In respect of this, it is worth mentioning such researchers as Keynes (1978) who identified the savings motives, Friedman who formulated the Permanent Income Hypothesis (Devaney *et al.*, 2007), Modigliani and Brumberg (1954) who constructed the Life Cycle Hypothesis which was later applied to savings by Ando and Modigliani (1963), Kahneman and Tversky (1979) who were the authors of the prospect theory, Shefrin and Thaler (1988) who formed the Behavioural Life-Cycle Hypothesis (BLC) or Browning and Lusardi (1996) who conducted research into the precautionary savings motive.

The reasons why people build up savings are plentiful, for instance to provide for an anticipated future relationship between income and the needs of the individual. The life-cycle motive is recognised to be one of the savings motives (Browning and Lusardi, 1996). Saving for old age constitutes a vital aspect of saving. Combined with inefficient pension systems, the long-term effects of having too little or no savings by individuals are a particularly important problem in the face of population ageing. Voluntary saving should be distinguished from involuntary saving (Krupa *et al.*, 2012), an example of which may be saving within the framework of the pension system imposed by a given country. Saving for old age is one of the forms of ensuring old-age security (Vlaslov, 2017). The vital role of pre-retirement preparation was confirmed in research, such as the studies conducted by Noone *et al.* (2009) who additionally underline the existence of a reliable relationship between pre-retirement planning and well-being in later life.

2. Literature Review

According to Fernández-López *et al.* (2010), the decision to save for retirement is positively related to an individual's age, financial literacy, household income, and savings habits. Moreover, their research results suggest that country-level institutional factors also play a crucial role in shaping individuals' attitude towards retirement. Similar conclusions were drawn by Yilmazer and Scharff (2014) and Thalassinos *et al.* (2019) whose research showed that financial planning for retirement is a lifelong process which may be constrained by financial literacy and competing demands for resources across one's life course. Hauff *et al.* (2020) demonstrated that financial literacy potentially influences retirement financial behaviour entailing planning, saving, and investment management. This paper also considers other factors determining savings-related financial behaviour, including saving for old age.

Fisher and Patti (2010) concluded that the determinants of short-term and regular behaviour of the savers vary, depending on gender. Their studies showed that

women were less inclined to save in the short term if they were in poor health, while poor health did not significantly affect men's attitude towards short-term saving. According to these scholars, women and men differ with regard to how low risk tolerance, a medium saving horizon, poor health, and education are related to their propensity to save (Fisher and Patti, 2010).

Contrary to women, men earn more in general and thus tend to be wealthier and have more savings (Amari *et al.*, 2020). Vivel-Búa *et al.* (2019) proved that income plays an important role in financial planning for retirement and the effect of gender is related to the income stratum to which an individual belongs. The research conducted by Jacobs-Lawson *et al.* (2004) showed that women spent less time thinking about retirement than men and that gender was differentially related to the factors predictive of this activity. The studies conducted by Noone *et al.* (2010) indicated that perceptions of retirement and economic living standards were associated with financial preparedness. Women were still economically disadvantaged compared to men, which negatively impacted their financial planning. According to Osińska and Wasilewska (2020), the preferred forms of savings also depend on gender, which may indirectly amplify the differences in risk perception among men and women.

Tamborini and Purcell (2016) studied the relationship between family structure and economic preparation for retirement at earlier stages of the life course. They examined how the number of children and marital status translated into women's household retirement savings at young and mid-adulthood. Their analyses led to the conclusion that the financial preparation for retirement of the households of women at a young and middle age vary depending on the family context. They found that weak economic preparation for retirement is an additional economic disadvantage faced by single mothers in young and mid-adulthood, which may potentially have long-term implications for their financial security (Tamborini and Purcell, 2016).

Jianakoplos and Bernasek (1998) concluded that single women exhibit relatively more risk aversion to financial decision-making than single men. With wealth increasing, the proportion of wealth held as risky assets is growing by a smaller amount for single women than for single men and greater financial risk aversion may provide an explanation for lower levels of wealth among women in comparison to men. Gender differences in financial risk-taking are also influenced by age, race, and the number of children (Jianakoplos and Bernasek, 1998). Studies emphasise the significance of marital status and indicate that marriage exerts a major effect on reducing the risk of poverty and is associated with a higher probability of attaining affluence over the life course when compared with non-marriage (Grinstein-Weiss *et al.*, 2006). By the same token, Knoll *et al.* (2012) investigate the extent to which retirement savings behaviour differs among young persons depending on their marital status.

Contrary to all other groups, married young adults were more likely to perceive retirement as an important savings goal and to have an individual retirement account. The researchers confirmed that married persons were more inclined to participate in a defined contribution pension plan than their single counterparts and, additionally, that single women fared particularly poorly in terms of retirement savings outcomes (Knoll *et al.*, 2012).

Demirgüç-Kunt *et al.* (2016) underline that, on average, men are slightly more likely to save for old age than women, but the gender gap is larger in developing countries. Worldwide, saving for old age is more common among older and better educated adults who own accounts. Lusardi and Mitchell (2008) notice that less financially literate women are less likely to plan for retirement and be successful planners. The authors highlight the need for the development of educational programmes in financial planning and saving addressed directly to women and aimed at strengthening their financial security. Noone *et al.* (2010) also claim that various initiatives promoting retirement planning should be dedicated for women in order to support them in financial planning for the future.

3. Research Objective, Methodology and Data

The purpose of this paper is to identify the differences between the behaviour displayed by men and women in respect of saving for old age outside the pension system and to determine the influence of the level of education and the amount of income on women's saving for old age. In view of this, we undertake to test the following hypotheses:

Hypothesis 1: Old-age savings behaviour depends on gender.

Hypothesis 2: Women's old-age savings behaviour depends on individual characteristics.

The first stage of the research investigates the differences in saving for old age between men and women (herein referred to as the general study), whereas the second stage comprises a study conducted solely among women and focused on the influence of their education and personal income on their old-age savings behaviour. Old-age saving was studied in two categories: 1) the very fact of possessing any old-age savings, 2) the savings amount (among persons who declared to possess old-age savings).

The analyses presented in this paper come from a representative study which covered 1,000 individuals and was conducted in Poland. The quantitative study discussed in the paper was carried out with the use of the CATI (computer-assisted telephone interviewing) research method in May 2018 and was a part of a larger survey, so-called omnibus survey. The research sample included 1,000 adult Poles and considered the actual social differentiation in respect of the place of residence,

gender, and age. The research sample was selected in a proportional manner (Walczak, 2019).

In order to analyse the impact of gender on the possession of any old-age savings and on the savings amount, we used the chi-square test of independence (χ^2 test). In each test gender was compared with old-age savings or the savings amount (relevant calculations were made with the use of SPSS Statistics 25). In the research conducted among women, we use the same test to analyse the impact of the level of women's education and personal income on possessing any old-age savings and on the savings amount. In each test the level of women's education and personal income were compared with old-age savings or the savings amount.

For each pair of characteristics, a zero hypothesis H_0 was formed and assumed the compared characteristics to be independent, while hypothesis H_1 assumed these characteristics to be dependent. If the calculated χ^2 is greater than the critical value $\chi_{(df,\alpha)}^2$ (for degrees of freedom $df: (r-1)(s-1)$ and a presupposed level of significance $\alpha=0.05$), then H_0 should be rejected, otherwise the rejection of the null hypothesis is unfounded. This means that $\chi^2 \geq \chi_{(df,\alpha)}^2$ and we reject H_0 at the significance level α . Hence, we may suppose that the characteristics are dependent. If $\chi^2 < \chi_{(df,\alpha)}^2$, there is no reason to reject H_0 , assuming the characteristics are independent (Krupa and Walczak, 2016; Adegbite *et al.*, 2019). The description of particular variables studied in the paper is presented in Table 1.

Table 1. General presentation of survey participants

Variable	Variable description	N
Gender	Men	477
	Women	523
Possessing any old-age savings	Yes	377
	No	623
Savings amount	Less than the respondent's half-year income	198
	More than the respondent's half-year income	90
	Hard to say	89
Age	Under 40	400
	40-49	156
	More than 49	444

Source: Compiled by the authors on the basis of the research conducted.

As shown in Table 1, 477 men and 523 women participated in the survey. Of the entire group surveyed, 377 individuals reported to have accumulated any savings to save for old age on their own, outside the pension system. The respondents declared their savings amount to be smaller or greater than their six-month income. Of the 377 persons with savings, 90 reported having retirement savings larger than their six-month income, 198 had savings smaller than their six-month income, whereas 89 were unable to determine what the ratio of their savings to their six-month income was. The entire study group (general survey) was divided by age into three subgroups: respondents under 40, respondents aged 40 to 49, and respondents over

49. This type of age division allowed us to identify differences between old-age savings behaviour. In the second part of the study, the analysis included women only and examined the influence of two selected individual characteristics (education level and personal income) on the possession and amount of savings.

4. Research Results

4.1 Gender Relative to Possessing any Old-Age Savings and to the Savings Amount – A General Study

The first item to be determined was the gender relative dependence between possessing any old-age savings and the savings amount. Table 2 shows the results of the chi-square test of the dependence between gender and the possession of any savings and the savings amount.

As a result of the test of the dependence between gender and the possession of any old-age savings, the null hypothesis was rejected, thus indicating the dependence between gender and the possession of any old-age savings (34.2% women; 41.5% men). Secondly, the test of the dependence between gender and the savings amount provided no reason to reject the null hypothesis, which indicates the lack of dependence between gender and the savings amount.

Table 2. Results of testing the dependence between gender and the possession of any old-age savings and gender and the savings amount

Independent variable	χ^2	Degrees of freedom (df)	$\chi^2_{(df,\alpha)}$	Value- p	Decision
Possessing any old-age savings	5.635	1	3.8415	0.018	Rejection H₀
Savings amount	3.070	1	3.8415	0.080	No reason to reject H ₀

Source: Compiled by the authors on the basis of the research conducted.

Tables 3-5 reflect the relationships shown in Table 2, but for three different age groups (under 40, 40 to 49, and over 49).

It is worth emphasising that the dependence between age and the possession of old-age savings occurs only in one case. Namely, the dependence between gender and the possession of savings exists among persons aged 49 and above (Table 5). A more detailed analysis demonstrated that women over 49 years of age save less than men (32.2% women; 42.8% men).

Moreover, as the percentages show, this dependence is greater than in the case of the sample including all respondents presented in Table 2. In turn, as a result of the test of the dependence between gender and the savings amount, the null hypothesis was rejected in one case (Table 3), thus indicating the dependence between gender and the savings amount among persons under 40 years of age. Although no dependence

between gender and the possession of savings was identified among young persons, the dependence between gender and the savings amount exists and is due to the fact that men often have more savings.

Table 3. Results of testing the dependence between gender and the possession of any old-age savings and gender and the savings amount (for persons under 40)

Independent variable	χ^2	Degrees of freedom (df)	$\chi^2_{(df,\alpha)}$	Value- p	Decision
Possessing any old-age savings	0.125	1	3.8415	0.723	No reason to reject H ₀
Savings amount	6.489	1	3.8415	0.011	Rejection H₀

Source: Compiled by the authors on the basis of the research conducted.

Table 4. Results of testing the dependence between gender and the possession of any old-age savings and gender and the savings amount (for persons 40-49)

Independent variable	χ^2	Degrees of freedom (df)	$\chi^2_{(df,\alpha)}$	Value- p	Decision
Possessing any old-age savings	0,723	1	3.8415	0.125	No reason to reject H ₀
Savings amount	0.352	1	3.8415	0.553	No reason to reject H ₀

Source: Compiled by the authors on the basis of the research conducted.

Table 5. Results of testing the dependence between gender and the possession of any old-age savings and gender and the savings amount (for persons above 49)

Independent variable	χ^2	Degrees of freedom (df)	$\chi^2_{(df,\alpha)}$	Value- p	Decision
Possessing any old-age savings	5.280	1	3.8415	0.022	Rejection H₀
Savings amount	0.015	1	3.8415	0.901	No reason to reject H ₀

Source: Compiled by the authors on the basis of the research conducted.

4.2 The Level of Women’s Education and Women’s Personal Income with Regard to the Possession of any Old-Age Savings and the Savings Amount

At the next stage of research, we tried to determine whether there exists any dependence between the level of women’s education and the possession of any old-age savings or the amount of savings. We also investigated whether there exists any dependence between women’s personal income and the possession of any old-age savings or the amount of savings. Table 6 presents the results of the chi-square test of the relationship between women’s education and savings possession and amount. The sizes of the groups surveyed were shown in Table 7.

The test of the dependence between the level of women’s education and the possession of any old-age savings resulted in the rejection of the null hypothesis, thus indicating the relationship between the level of women’s education and the possession of any old-age savings. The test of the dependence between the level of women’s education and the amount of savings provided no reason to reject the null

hypothesis. This indicates the lack of a relationship between the level of women's education and the amount of savings.

Table 6. Results of testing the dependence between the level of women's education and the possession of any old-age savings and between education and the savings amount

Independent variable	χ^2	Degrees of freedom (df)	$\chi^2_{(df,\alpha)}$	Value- p	Decision
Possessing any old-age savings	14.001	3	7.815	0.003	Rejection H_0
Savings amount	4.523	3	7.815	0.210	No reason to reject H_0

Source: Compiled by the authors on the basis of the research conducted.

Table 7. The number of women depending on the level of education and the possession of any savings

Level of education	Possessing any old-age savings		Total
	No	Yes	
Primary	55	31	86
Vocational	80	38	118
Secondary	127	43	170
Higher	82	67	149
Total	344	179	523

Source: Compiled by the authors on the basis of the research conducted.

Table 8 shows the results of the chi-square test of the dependence between women's personal income and the possession and amount of savings. The sizes of the groups surveyed were presented in Table 9.

As a result of the test of the dependence between women's personal income and the possession of any old-age savings, the null hypothesis was rejected, thus indicating the relationship between women's personal income and the possession of any old-age savings. The test of the dependence between women's personal income and the amount of their savings provided no reason to reject the null hypothesis, which indicates the lack of relationship between women's personal income and the amount of their savings.

Table 8. Results of testing the dependence between women's personal income and the possession of any old-age savings and between women's personal income and the savings amount

Independent variable	χ^2	Degrees of freedom (df)	$\chi^2_{(df,\alpha)}$	Value- p	Decision
Possessing any old-age savings	22.009	3	7.815	0.000	Rejection H_0 Σφάλμα! Δεν έχει οριστεί σελιδοδείκτης.
Savings amount	3.263	3	7.815	0.353	No reason to reject H_0

Source: Compiled by the authors on the basis of the research conducted.

Table 9. The size of the women's group in respect of their personal income and the possession of any savings

Personal income	Possessing any old-age savings		Total
	No	Yes	
Lack of personal income	44	7	51
up to 1,500 PLN	97	41	138
1,500-3,000 PLN	160	86	246
above 3,000 PLN	43	45	88
Total	344	179	523

Source: Compiled by the authors on the basis of the research conducted.

5. Conclusions

The results of our analysis presented in this paper prove the existence of differences in old-age savings behaviour displayed by men and women. The dependence between savings and gender was confirmed in the general study that concerned the possession of old-age savings, but did not take into account the respondents' age. The general study did not corroborate the dependence between gender and the savings amount. In the case of the groups in which the respondents' age was considered, the dependence between gender and savings possession was confirmed in the group of persons aged over 49. Women over 49 years of age save more seldom than their male peers, which may result from the fact that women are more inclined to help their adult children; however, this issue requires further research.

With regard to the dependence between gender and the savings amount in the age groups studied, our research showed that it exists in the group of persons below 40 years of age and can be attributed to the fact that men often have more savings. The results obtained in the paper are similar to those found in other studies (Demirgüç-Kunt *et al.*, 2016) and thus confirm our hypothesis that old-age savings behaviour depends on gender.

The analyses conducted among women only demonstrated the existence of the relationship between the level of women's education and the possession of any old-age savings. They also confirmed that the occurrence of the relationship between women's personal income and the possession of any old-age savings. Consequently, the second hypothesis can be considered as proven. Nonetheless, the relationship between women's education and savings amount as well as the relationship between women's personal income and savings amount were not proven. Thus, propounded in expert literature (Lusardi and Mitchell, 2008; Noone *et al.*, 2010), the needs of developing educational programmes for women and initiatives aimed at strengthening women's financial security with regard to the planning saving for old age seem justified. The results presented above can be perceived in a positive light. With the growing level of education in Poland, educated women save more and

more frequently as demonstrated by research results. Although women over 49 years of age save rarely, the situation may improve slowly with the passage of time.

The authors of the paper are aware of the limitations of the studies conducted, which mostly derive from the nature of the data collected. More specific data including the respondents' marital status, the number of children and household members would improve the cognitive quality of the research conducted and allow the authors to indicate possible causes of differences in old-age savings behaviour displayed by men and women.

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