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Retirement Savings – Determinants of Households' Behaviour

Abstract:

Within the last few years, the inefficiency of the pension systems is more and more often perceived as a global problem and there has been an increase in the interest in the issues of the systems which are to provide financial security in old age. Efficient and effective construction of social security systems, which lower or prevent the effects of the risk faced in old age has become an important goal of social policy in numerous countries. In-depth research of consumers behaviour in terms of retirement savings should form the basis for the further development of social policy and state instruments supporting individual provision for old age. Retirement savings equal consumption postponed to the final stage of human life. Hence, the estimate of the amount of money that would provide a dignified life for a retired person is very difficult, and thus – often wrong.

The aim of the article is to identify the determinants of the saving behaviour of households' representatives intended for retirement security. There are three kinds of factors analysed – demographic, social and economic, as well as the level of financial awareness and expectations as to the level of future consumption after retiring from work. The latter is the responsibility of state institutions.

The source of data includes statistics and the results of a representative questionnaire research carried out in 2012 among customers. The research has been conducted on 493 working individuals – Polish residents. With regard to its subject, the research concerned, among other aspects, the attitudes and opinions on saving for retirement. It has been conducted in the Department of Market Research and Services of Poznan University of Economics. The applied method was direct interviews involving interviewers, with a standardised questionnaire (PAPI) used.

The measures of descriptive statistics and correlation coefficients have been used in the analyses. The analysis of the relationship between demographic-economic features and attitudes towards saving for retirement has been also conducted with the use of the classification trees of the IBM SPSS Statistics package.

Keywords: Saving, Voluntary Pension Scheme, Customer's Behaviour.

JEL Classification: J26, D14

1. Introduction – Retirement savings in literature

The behaviours of household representatives with regard to creating retirement savings constitute an integral part of attitudes toward saving and saving decisions in general. It is worth mentioning here that theoretical foundations on the subject of household savings have been created, among others, by J.M. Keynes (1936), F. Modigliani and R. Brumberg (1954) as well as M. Friedman (1957).

In the first case (Keynes's absolute income hypothesis) it has been assumed that the consumption level depends on current income, and therefore savings are derived from consumption. Among eight

subjective factors influencing cutting down on current consumption and not spending one's entire income, Keynes mentions two motives for creating savings intended for old age. First of all, there is thrift (including the awareness of the relation of income vs. expenditure different from that of the present moment, resulting from the inability to work), and, to a lesser extent, the wish to leave an inheritance (Keynes 1936).

Secondly, there is the so called Life-Cycle Hypothesis (LCH) by Modigliani and Brumberg, whose authors have tried to explain the regularities of forming individual savings. In this case it has been assumed that individuals and households throughout their entire life aim at balancing their consumption. Therefore, the primary motive for saving is to maintain the same level of life standard till death. According to this theory, young people presently not only accumulate no retirement assets, but they even do not have any savings as well. Therefore, achieving the desired level of life standard in many cases requires from them taking on loans, and their saving rate is negative. The decisions and actions taken with regard to saving for old age do not start until middle age. Finally, after finishing their professional career, in the old age period, people live on the savings accumulated before (Ando, Modigliani, 1957, pp. 99-124). Due to its simplifying assumptions, the theory has met with a lot of criticism, but it has also served as the grounds for many researchers for conducting further research on the economic aspects of saving (Warneryd, 2004, pp. 533-536).

M. Friedman has extended the Life-Cycle Hypothesis to the Permanent Income Hypothesis. Similarly to the LCH theory, it has been assumed that individuals plan their consumption throughout their entire life, and therefore the aim of saving is to level this consumption in time. However, M. Friedman divided a consumer's income into two parts: permanent (understood as the average lifetime income), and temporary (transitory, occurring by chance). Savings are first of all created by temporary income, whereas permanent income determines the consumption level.

Modigliani and Brumberg's as well as Friedman's hypotheses in the following years served as the foundation for research expanding these theories with elements they had omitted (for example uncertainty about the amount of income, see Hall 1978) and revoking their unrealistic assumptions (e.g. the even distribution of consumption expenditure throughout one's lifetime, accumulating savings adequate to life expectancy after retirement, lack of retirement savings in the young age period, negative savings at the old age stage, or households not leaving inheritance in the form of assets). What can be found interesting, among other aspects, is the research on household savings, conducted in the USA between 1970-1990 (Browning, Lusardi 1996). It was observed in this research that models based on the LCH did not explicitly explain consumers' saving behaviour, therefore psychological factors should be considered in the analyses as well. These factors served as the foundation for Kahneman and Tversky's theory of perspectives (1979). These authors pointed out that individuals taking decisions use simple rational rules (heuristics), they do not always act reasonably, and they do not comply with the axioms of expected utility theory (mainly the principle of coherency and unchanging preferences, while the final choice depends on the way of presenting a decision situation).

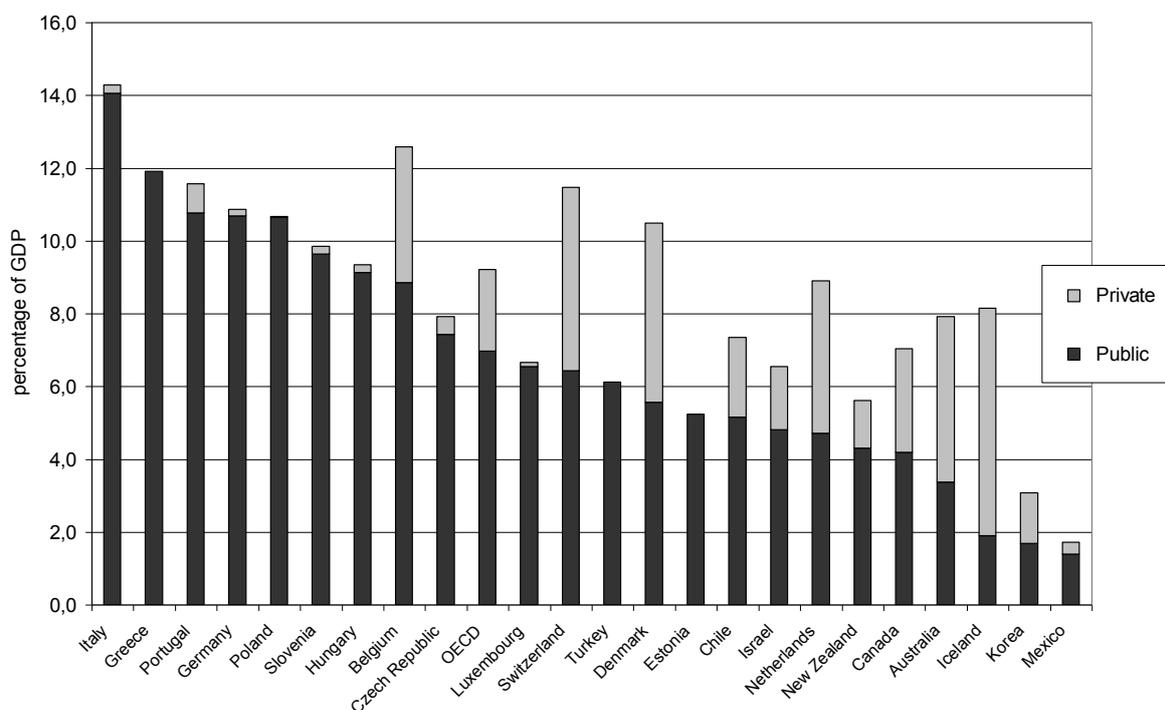
Another significant theory explaining consumers' saving behaviours is Shefrin and Thaler's (1981) Behavioural Life Cycle Hypothesis (BLCH). This theory assumes that the key elements in the saving process are self-control and the mental accounts system. In every individual human being there are two personalities: a doer – a short-sighted hedonist focused on current consumption – and a planner – a long-sighted strategist thinking about the future and saving in the long term. Meanwhile, it is essential and difficult to assure the balance between both personalities in achieving

these short- and long-term goals. This is encouraged by the so-called mental accounts system. The system consists of: the I account, with current income financing current expenditure; the A account, with current assets and savings for purposes other than retirement; and the F account, related to retirement savings – income and expenditure considered in the long-term perspective. Creating retirement savings (the F account), particularly those of a voluntary character, is put off „for later” – in the unspecified future – and therefore, in the contemporary world it is supported by institutional compulsory forms, in most cases managed by the state.

2. Significance of voluntary pension security schemes – background to research

In recent years the inefficiency of retirement systems has been a problem in numerous countries, not only in Europe. The crisis is more and more perceptible in the pay-as-you-go parts of the retirement security systems (of a public character), as well as the capital-based ones. In the case of the PAYG systems the problems are caused, among others, by negative demographic changes (falling fertility rate – e.g. in the OECD countries, on average, from 2.26 in 1975-1980 to 1.69 in 2005-2010), and by higher longevity – where the smaller number of young people work on pensions drawn by pensioners living longer and longer. It is also significant that in many countries the effective age of retirement is as a rule lower than the official age resulting from the legal regulations of the retirement system. For example, in 2006-2007, out of 34 OECD countries, a lower-than-official effective retirement age was observed in 20 countries in the case of men, and in 23 countries in the case of women (OECD 2011); while in the case of capital-based systems the problems arise, among others, from the shortening of economic cycles, which cause, among other things, crises on the capital market. This situation has an impact on the low solvency of retirement systems, a reduction in the value of disbursed pensions, and a decreasing replacement rate.

Figure 1. Public and private expenditure on pensions in selected OECD countries, 2011 (or latest year available) as a percentage of GDP



Source: OECD Global Pension Statistics and OECD Social Expenditure database.

The share of the state budget expenditure on pension security varies between individual countries, which results from their social-economic development. However, in all of them it is limited to granting their citizens social security (benefit on a socially acceptable level) at the most. For example, in 2011 the expenditure on pension systems in the OECD countries amounted to an average of 9.2 percent of GDP (compared to 7.4 percent in 2000), with the highest in Italy (14.3% GDP), Greece (11.9% GDP) and Portugal (11.6% GDP), and the lowest in Mexico (1.7% GDP) and Korea (3.1% GDP). It is interesting that the highest share of private expenditure on pensions occurs in the countries with a very high GDP per capita (e.g. in Switzerland, Australia, Netherlands or Canada) (Fig. 1).

Pensions disbursed by state institutions in more and more cases are insufficient to maintain the same level of life standard by people who are retiring. Therefore, the governments of numerous countries take certain actions, so that individuals during their professional activity period additionally and voluntarily accumulate savings for satisfying their needs in retirement age. The multi-pillar system of accumulating savings for old age, that is, combining public and private elements of the pension system, has also an impact on better risk diversification and promises a higher standard of living upon retirement (Holzmann, 2003).

Voluntary retirement savings in the OECD countries in most cases constitute the so-called third pillar of the pension system. They are created by various forms of saving, such as individual pension accounts, life insurance, investment funds, employee pension plans, reverse mortgage, etc. However, this part of the pension system is still relatively little developed with regard to legal regulations, the product offer, as well as the citizens' interest in the first place. These forms of accumulating savings for old age are mainly used by more affluent people with higher retirement awareness and thrift.

In Poland the pension system reform started in 1999. The previously existing defined benefit system was then replaced by the three-pillar defined contribution system: the first two elements are compulsory, with the first pillar on the pay-as-you-go basis managed by the state, and the second – capital-based, with retirement assets managed by private institutions – pension fund societies; while the third part of the pension system is voluntary. It covers the assets accumulated in:

- employee pension plans, introduced in 1999,
- individual pension accounts, introduced in 2004,
- individual pension security accounts, introduced in 2012.

As the forecasts for the replacement rate (i.e. the relation between the average amount of a drawn pension and the average (or last) salary) of pensions obtained from the compulsory part of the pension security system (the 1st and the 2nd pillar combined) are very pessimistic (the future pensioners will draw about 30 percent of the amount of their last salary), therefore in order to maintain the adequate standard of living of future pensioners, the significance of additional, voluntary, individually accumulated savings is pointed out. In addition, the essential thing in the case of such savings is to start their regular accumulation as early as possible, and for as long as possible (Szumlicz, Żukowski, 2004, p. 19). Creating such assets may depend on numerous factors. The following part of the article attempts to identify their impact on working individuals' behaviours with regard to saving for retirement.

3. Determinants of saving behaviour – research results

The behaviour of household representatives in terms of creating voluntary savings for retirement security can be influenced by numerous factors – related to either the characteristics of a working person or a household, or macroeconomic factors (particularly those resulting from the legal and organizational regulations of the pension system existing in a given country). The former include demographic, social, and economic factors, as well as the level of financial pension awareness and expectations concerning the level of consumption after retiring in the future. In the latter case, creating voluntary retirement savings may be influenced, among other elements, by the GDP growth rate, expected replacement rate (relation between the last salary before retirement and the received pension), or by the amount of compulsory pension contributions (taxes) intended for retirement security, where, according to M. Feldstein's hypothesis, the higher they are, the more working people tend to limit their voluntary savings (Feldstein 1979; Barr, Diamond, 2006, p. 15-39)

3.1 Microeconomic factors

The majority of research conducted on this subject focuses on demographic and economic factors – saving for retirement depends mostly on age, education, gender, income, and marital status (Petkoska, Earl 2009; Jacobs-Lawson, Hershey 2005). Also the research carried out in Poland (and it is worth pointing out that in this country this is a relatively new financial market segment) confirm the impact of these variables on consumer behaviour. An excerpt from the results of the questionnaire research on this subject has been presented on this point.

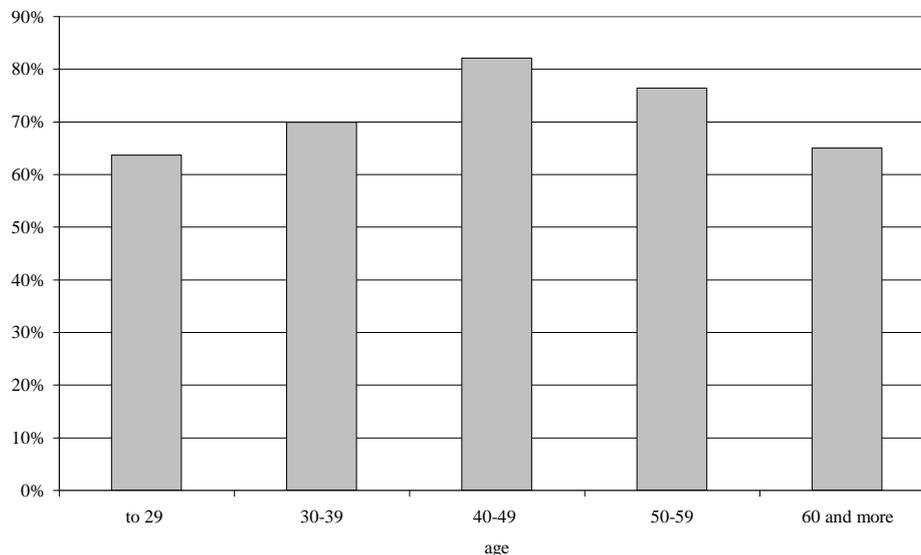
Among the demographic factors it is age that has a significant impact on saving behaviour. As aforementioned, Modigliani, as early as in his life cycle hypothesis assumed a negative savings rate in the young age period. Then, with getting older, the savings tend to rise, until the time of stopping professional activity, when income falls and benefiting from collected assets begins. However, the example of the research by Avery and Kennickell (1991) shows that in the US the households of elderly people do not benefit from the capital accumulated in the productive period as much as the LCH assume. Also the results of the research on British households show that the savings rate increases in the old age period (Demery, Duck, 2006).

Therefore, analysing the impact of age on the behaviour of household representatives in terms of retirement savings in Poland, what results from the research is that as much as 73 percent of working people create such savings, and this is done most of all by the 40-49 years old age group (82 percent). It is an interesting fact that also people starting their professional career make additional savings for their retirement – among working people aged up to 29 years old it amounts to 64 percent (see Fig. 2 and Fig. 3). The mentioned relations confirm what has been observed far back by Adam Smith: the shorter the period of time to a given event (here: reaching the retirement age), the more the concern about the future increases. However, the approval of saving for retirement, rising with age, in many cases will not grant accumulating enough capital anyway.

It has to be explained here that what the respondents have assumed as „retirement savings” is any broadly understood forms of accumulating assets for the old age period. Therefore, they also include the ways beyond the formal retirement system, e.g. investing in bringing up and educating children, who „will be the support in the future”, opening bank deposit accounts, or purchasing a property for rent; It has to be noticed here that the interest of working people in institutional solutions offered within the third pillar pension funds is very low. It must be pointed out that it is

not only the problem of Poland, but of many other countries as well. For example, in the US an average working person aged 55-64 has accumulated retirement assets equalling merely one annual salary (Samwick 2006, pp. 21-27).

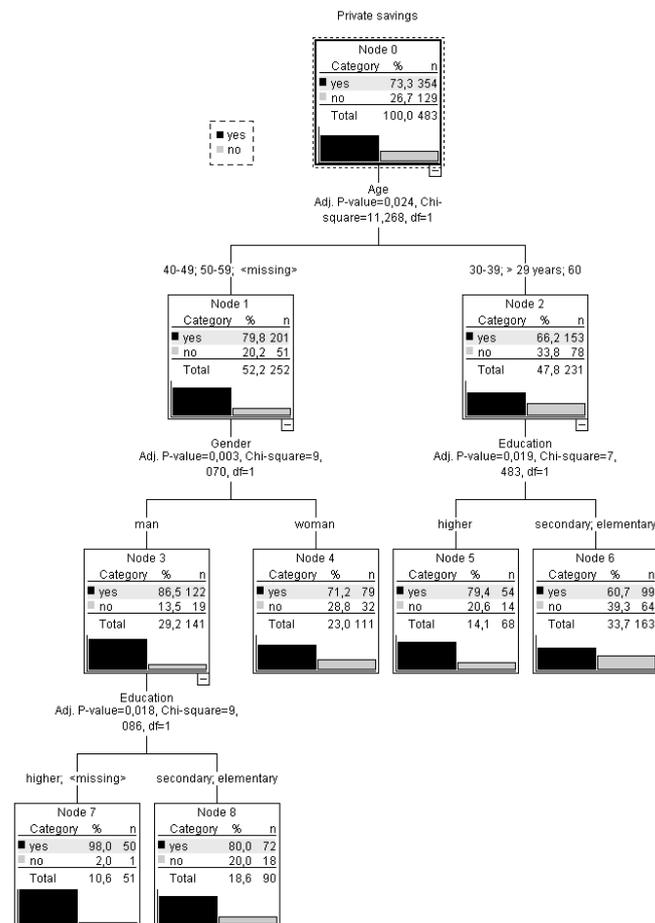
Figure 2. Percentage of households making additional savings for future retirement by age groups



Source: own study based on conducted questionnaire research

In Poland at the end of 2012 the value of assets accumulated within the employee pension schemes amounted to merely about 1.95 bn euros, and the assets belonged to 358.7 thousand people (that is 2.29 percent of the total number of working people). In contrast, 813.7 thousand people had the Individual Pension Account (i.e. 5.2 percent of professionally active people, and the value of accumulated assets amounted to about 833 mln euros. In this background the situation of the interest in the Individual Pension Security Accounts seems a lot better – in the first year only of their availability, this solution was taken up by 496.8 thousand people (3.2 percent of the total number of working people), accumulating assets of about 2.6 mln euros. This confirms that retirement saving schemes in order to be attractive for working people, should offer, among others, an instant profit opportunity. In this particular case a tax preference has been applied, so that payments into such accounts can be deducted from the personal income tax base.

Besides age, the analysis of tendencies to save for retirement uses also such demographic variables as education, gender, and the size of a household (measured by the number of people). On the basis of the calculated classification tree (Fig. 3), it can be noticed that if the head of a household is between 40 and 59 years old, has a higher education degree and is a man, in 98 percent of cases he has savings for retirement. As for younger people – under 40 years old, a variable which considerably influences creating additional savings for retirement is a higher education degree (79 percent of households in this group have savings for retirement). Another statistically important demographic variable (not included in the graph) which has an impact on having savings for retirement is the number of people in a household – in this case the Spearman's rank correlation coefficient equals 0.14 (where $p=0.002$)

Figure 3. Saving for retirement and demographic variables – classification tree

Note: the model has accurately classified 73 percent of cases

Source: own calculations

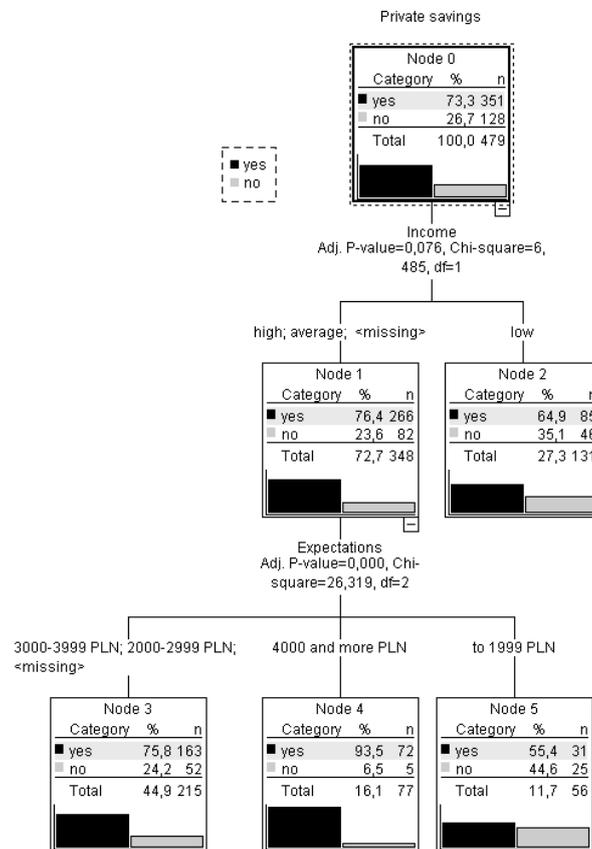
A determinant that significantly influences the saving behaviour of households is their income, which, when rising, causes an increasing tendency to save in general. This is confirmed by numerous research (Schmidt-Hebbel and others 1992, Beer and others 2006, Rószkiewicz 2008, Loayza and others 2000, Białowas 2013). Therefore it is very important to determine the relation between income and creating savings intended strictly for old age security.

The results of research conducted on Polish households show that with rising income the percentage of households saving for retirement increases – from 65 percent among the lowest-income households to 82 percent among those of the highest-income (the Spearman's rank correlation coefficient equals 0.22, $p=0.000$). What is interesting, creating savings for retirement is even more influenced by the expectations of household representatives towards the real amount of future retirement pension (Fig. 4). As can be seen, the higher the expectations are, the more often households save for the additional retirement pension. Moreover, if a household draws an average or high income at present and expects the future retirement pension to be high, the tendency to make additional savings is very high (94 percent of households).

Identifying the reasons for the higher or lower concern of the Poles about additional financial retirement security, the research has also determined the impact of saving attitudes on savings for retirement. These attitudes, which are an inherent element of consumer research, are understood

here as: knowledge (its authenticity and extensiveness), emotional feelings, as well as the tendency to behave in a certain way.

Figure 4. Saving for retirement in relation to present income and expected retirement income in a household – classification tree



Note: the model has accurately classified 73 percent of cases

Source: own calculations

Global research confirm that there is relationship between caring about one's future pension and financial knowledge – the deeper one's knowledge, the more often one thinks about one's future retirement. This relationship is also confirmed by the results of research conducted on the Polish market. A statistically significant correlation has been observed between the self-assessment of respondents' knowledge of the pension system and the actual money savings in the Individual Pension Accounts (the Spearman's rank correlation coefficient equalled +0.16 (where $p=0.000$))

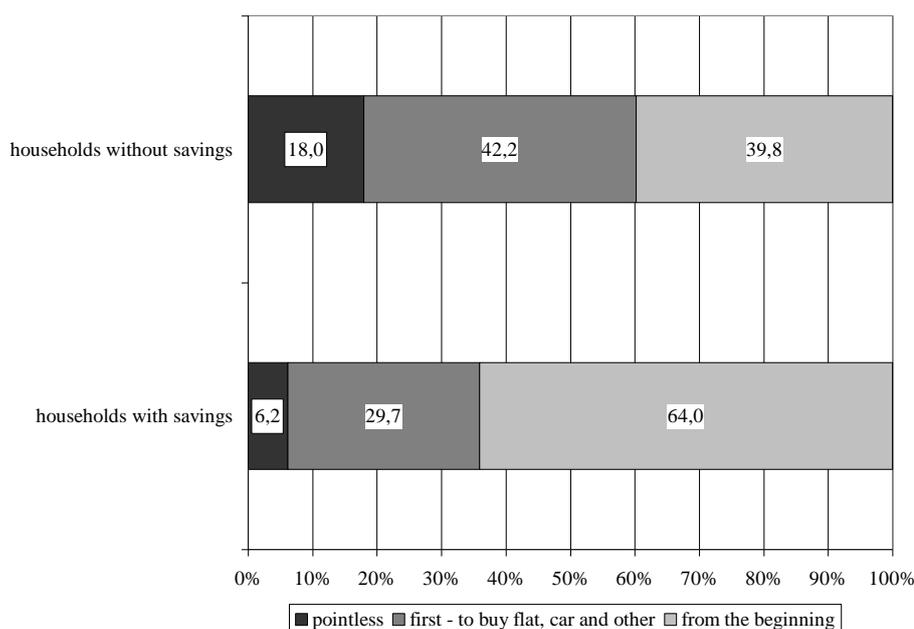
Identifying the attitudes towards voluntary and individual savings intended for old age security, the respondents also expressed their attitudes in the area of emotional feelings, referring themselves among other factors, to the following statements (the statements have been presented in a 5-degree Likert scale):

- there is no point in making additional savings for retirement, as one never knows what will happen in such a remote future anyway,
- additional saving for retirement should start from the moment of starting a professional career,

- the first priorities are to buy a flat, its furnishings, a car, save some money in a bank deposit account, and so on, and only after that one can start making additional savings for retirement,
- I am a financially responsible person,
- I still have time to start saving for retirement,
- continuing to save money when on a retirement pension is pointless,
- I manage my home budget wisely,
- children should provide financial help for their retired parents.

What results from the conducted research is that in the opinion of 58 percent of respondents additional saving for retirement should start from the moment of starting one's professional career. Therefore, according to Sherfin and Thaler's theory of Life Cycle Behavioral Hypothesis (Thaler, Shefrin 1981, pp. 392-406), it can be claimed that the dominating attitude within this group is that of a „strategist”. In contrast, among the other 42 percent a hedonistic attitude prevails and three quarters of people in this segment declare that they are going to start saving for retirement after they have satisfied other needs (for example buying a flat and furnishing it, buying a car, etc.). The rest are of the opinion that there is no point at all in accumulating assets for these purposes, as this is a too remote future (Fig. 5)

Figure 5. Attitudes towards retirement savings and owned retirement assets



Source: own calculations

What is more, having additional savings for retirement security is statistically in a significant way:

- positively correlated with seeing oneself as a „financially responsible person” (correlation coefficient amounts to +0.18), where in a group of people considering themselves „fully financially responsible” 47 percent have retirement savings, and 29 percent do not.
- negatively correlated with the feeling that there is still time left to start saving for retirement (correlation coefficient amounting to – 14), and with claiming that „continuing to save money when on retirement pension is pointless” (correlation coefficient amounts to –0.14). It is worth adding that the life cycle hypothesis assumes that after retiring savings start to

melt in order to maintain the previous level of living. However, psychological supplements to this theory in terms of retirement savings indicate the significance of the so-called saving habit. This means that people who saved for retirement throughout their professional career period continue to save after it has finished. It is driven by the need to feel secure in case of a long life, the need to avoid poverty, or the wish to leave an inheritance. Analysing the perception of saving after retiring, it can be found interesting that the larger percentage of pensioners (54 percent) are in favour of a continuation of saving in comparison to working people (49 percent). The phenomenon of the saving habit is also confirmed by the relationship between both analysed attitudes. In this case there is a positive and statistically significant correlation – the more people agree with the claim that there still is a lot of time left to start saving for retirement, the more often their opinion is that saving after retiring is pointless (Spearman's rank correlation coefficient equals 0.18, $p=0.000$).

In the research no relationship, however, has been found between creating voluntary retirement savings and opinions on „wise home budget management”, or expectations of financial support provided to pensioners by their children.

3.2 The role of state institutions

According to M. Feldstein's aforementioned hypothesis above (Feldstein 1979), in those countries with a generous pension system, working people save for their old age period to a lesser extent than in the countries with a low replacement rate. This theory has been the subject of a lot of research (a review has been for example done by Euwals 2000), in which it has been verified positively (e.g. Kotlikoff 1979), but negatively as well (Koskela, Viren 1983; Euwals 2000). It is worth adding here that pension system reforms, implemented in numerous countries in recent years, have limited the role of state institutions in providing material security for the period of old age. Hence, this is another factor influencing the increase in the significance of voluntary retirement savings.

With respect to this, in research conducted in Poland the opinions of household representatives has been identified regarding the entities responsible for the amount of the retirement pension. Thus, 62 percent of respondents declare that „they would save for retirement more effectively on their own than the relevant institutions”; however, there is no statistically significant correlation between such opinions and making actual savings for this purpose. What is more, the wish to be able to choose the form of saving does not mean the total elimination of state institutions' tasks from the pension system at the same time. Identifying the entities that should „take care” of future pensions, the Poles granted the most points to „the state” (45.5 out of 100). Yet the second position in the hierarchy of entities responsible for the amount of future retirement pensions is taken by „each working individual” (36.2 points out of 100), and the third – by an employer (18.4 points).

Also the analysis of the relationship between the significance attributed to the respective entities on which the amount of the retirement pension should depend has proved that such a statistically significant (amounting to 0.01) relationship exists. As it results from the conducted research, the greater the role working people attribute to the state institutions, the less often they create retirement savings (Spearman's rank correlation coefficient amounts to -0.17), while the greater the role they attribute to individual thrift, the more often they actually create such savings (Spearman's rank correlation coefficient amounts to +0.22). What is interesting, no relationship has been observed between the individual accumulation of retirement capital and possible employer's participation in

this respect (note: the opportunity to accumulate retirement savings through employer has been available in Poland since 1999).

4. Conclusion

Voluntary saving for retirement security by working individuals depends on numerous factors. As has been shown in the article, besides demographic and economic factors, the other significant ones include attitudes towards saving and the perception of the role of both the state and the individuals in securing an adequate standard of living in the retirement period. To sum up, the segment of people interested in creating savings for retirement in Poland is represented mostly by individuals aged 40-49, with a university degree, more often male. A significant determinant of household representatives' behaviours is their household's income, both their present as well as their expected income (for the period after retiring). According to theoretical assumptions, the higher the income (present or expected), the more often a household saves for the period of old age. Moreover, the research confirms a statistically significant relationship between saving for old age and the attitudes, among others, towards the horizon, i.e. when one should start making such savings. Finally, an important factor influencing saving behaviours is contained within the perception of the role of the state in this respect, as well as the actual „generosity” level of a given pension system. It has been found that the greater the role working individuals attribute to the state, the less often they tend to start voluntarily saving for their retirement period.

Meanwhile, continuously low interest in the institutional and voluntary forms of saving for old age bears a question about the causes of such a state. It appears that a few reasons for this condition can be indicated. Firstly, it results from the material situation of working individuals. As it has been shown, the increasing income is reflected in higher acceptance of the necessity of voluntary retirement savings, as well as in actual decisions taken in this respect. Secondly, the following attitudes towards the necessity of accumulating such capital pose a serious obstacle to saving for old age, namely a low level of knowledge, as well as emotions related to the necessity of cutting down on current consumption, or inclinations towards benefiting from the services which are to bring results in a very remote time horizon; and, what is more, doubts about the results of such saving.

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