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## Introduction

One of the fastest growing areas in the economic sciences is broadly defined area of finance, with particular emphasis on the financial markets, financial institutions and risk management. Real world challenges stimulate the development of new theories and methods. A large part of the theoretical research concerns the analysis of the risk of not only economic entities, but also households.

The first Wrocław Conference in Finance WROFIN was held in Wrocław between 22nd and 24th of September 2015. The participants of the conference were the leading representatives of academia, practitioners at corporate finance, financial and insurance markets. The conference is a continuation of the two long-standing conferences: INVEST (Financial Investments and Insurance) and ZAFIN (Financial Management – Theory and Practice).

The Conference constitutes a vibrant forum for presenting scientific ideas and results of new research in the areas of investment theory, financial markets, banking, corporate finance, insurance and risk management. Much emphasis is put on practical issues within the fields of finance and insurance. The conference was organized by Finance Management Institute of the Wrocław University of Economics. Scientific Committee of the conference consisted of prof. Diarmuid Bradley, prof. dr hab. Jan Czekaj, prof. dr hab. Andrzej Gospodarowicz, prof. dr hab. Krzysztof Jajuga, prof. dr hab. Adam Kopiński, prof. dr. Hermann Locarek-Junge, prof. dr hab. Monika Marcinkowska, prof. dr hab. Paweł Miłobędzki, prof. dr hab. Jan Monkiewicz, prof. dr Lucjan T. Orłowski, prof. dr hab. Stanisław Owsiak, prof. dr hab. Wanda Ronka-Chmielowiec, prof. dr hab. Jerzy Różański, prof. dr hab. Andrzej Sławiński, dr hab. Tomasz Słoński, prof. Karsten Staehr, prof. dr hab. Jerzy Węcławski, prof. dr hab. Małgorzata Zaleska and prof. dr hab. Dariusz Zarzecki. The Committee on Financial Sciences of Polish Academy of Sciences held the patronage of content and the Rector of the University of Economics in Wroclaw, Prof. Andrzej Gospodarowicz, held the honorary patronage.

The conference was attended by about 120 persons representing the academic, financial and insurance sector, including several people from abroad. During the conference 45 papers on finance and insurance, all in English, were presented. There were also 26 posters.

This publication contains 27 articles. They are listed in alphabetical order. The editors of the book on behalf of the authors and themselves express their deep gratitude to the reviewers of articles – Professors: Jacek Batóg, Joanna Bruzda, Katarzyna Byrka-Kita, Jerzy Dzieża, Teresa Famulska, Piotr Fiszeder, Jerzy Gajdka, Marek Gruszczyński, Magdalena Jerzemowska, Jarosław Kubiak, Tadeusz Kufel, Jacek Li-

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*Wanda Ronka-Chmielowiec, Krzysztof Jajuga*

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# CONFIDENCE IN LONG-TERM FINANCIAL DECISION MAKING – CASE OF PENSION SYSTEM REFORM IN POLAND

# PEWNOŚĆ W PODEJMOWANIU DŁUGOTERMINOWYCH DECYZJI FINANSOWYCH NA PRZYKŁADZIE REFORMY SYSTEMU EMERYTALNEGO W POLSCE

DOI: 10.15611/pn.2016.428.10
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**Abstract:** Due to the 2014 reform of the Polish pension system, Poles were faced with an important decision regarding continued saving for retirement. Based on results of a survey administered in June 2014 to employees of the Maria Curie-Skłodowska University, it was demonstrated that there were differences in confidence between those who had made early decision and those who had procrastinated in deciding. Confidence was also dependent on the decision pattern they followed: higher confidence was indicated in the case of individuals making decisions themselves, or with supporting financial advisors, and lower confidence appeared in those making decisions with the help of family, friends and other informal experts, as well as those left without any support. Confidence also rose strongly with better self-assessment of expected retirement status and amongst those saving for retirement with voluntary instruments, actively calculating their future needs. Men were also much more confident than women.

**Keywords:** behavioural finance, personal finance, pension savings, confidence, decision making.

**Streszczenie:** W związku z reformą systemu emerytalnego w 2014 roku Polacy stanęli przed koniecznością podjęcia decyzji o dalszym sposobie gromadzenia zabezpieczenia emerytalnego. Na podstawie wyników ankiety przeprowadzonej w czerwcu 2014 roku wśród pracowników Uniwersytetu Marii Curie-Skłodowskiej wskazano na różnice w pewności pomiędzy osobami, które podjęły wcześnie decyzję i tymi, którzy zwlekali z jej podjęciem. Pewność decyzji zależała od sposobu jej podjęcia: wyższą cechowały się osoby, które deklarowały, że podjęły decyzję samodzielnie, następnie osoby, które skorzystały z opinii ekspertów, najniższą osoby korzystające z opinii znajomych i rodziny i te, które nie wierzyły, że decyzja cokolwiek zmieni. Pewność silnie rosła z lepszą oceną siebie na emeryturze oraz w przypadku osób aktywnych w zakresie oszczędności emerytalnych: oszczędzających w III filarze lub tych, które przynajmniej oszacowały swoje potrzeby emerytalne. Mężczyźni byli też bardziej pewni swoich decyzji niż kobiety.

**Słowa kluczowe:** finanse behawioralne, finanse osobiste, oszczędności emerytalne, pewność decyzji, podejmowanie decyzji.

## 1. Introduction

Between 1981 and 2004, more than 30 countries in the world introduced changes to their pension scheme construction paradigm that lead to partial or full replacement of publicly administrated pension schemes (PAYG, pay-as-you-go) with systems based on individual retirement accounts [Orenstein 2013]. In Poland, the reformed pension scheme in its full shape has been in motion since April 1999 until May 2011, when, due to a deepening government budget deficit as an indirect consequence of the financial crisis from 2008-2009, another reform of the system began. The critical moment was reached in the middle of 2014, when every adult saving for retirement had the possibility to decide whether he or she wanted to keep saving in mixed 2-tier schemes or place contributions exclusively within the 1-tier public scheme.

The reform of the Polish pension system, and in particular the possibility of a decision in circumstances crafted for this occasion, created an environment for research which is interesting from a scientific point of view regarding decision-making by individuals in relation to future ways of saving for retirement and the conditions that may have affected their final decision. The main subject of this article is the analysis of factors that might influence confidence in an individuals' decision. What must be noted at this point is that this article does not focus on changes in the pension scheme in Poland or how it affected the economy or future pensioners.

The study is motivated by the consequences of 2009-2014 reform of the Polish pension system that resulted in new challenge Poles will face each 4 years. Namely, it will be possible to switch between 1-tier (public only) or 2-tier (public-private) saving scheme as long as the system operates in the current shape. If drivers of individual behaviours and beliefs are better discovered, there will be better understanding of the system dynamics and perspectives.

## 2. Literature review

Decisions of individuals operating in complex and uncertain situations are subject to bounded rationality rather than classical omniscient rationality [Simon 1979]. Research on confidence is part of growing literature on psychological aspects of individual judgement and decision making. The construct of confidence falls into category of self-awareness about one's own cognition that has been referred to generally as "metacognitive experience" [Flavell 1979].

In financial decision-making, self-confidence determines investment behaviour: from avoiding opportunities and conservatism caused by low confidence, to excessive risk and reckless actions with overconfidence [Estes, Hosseini 2001]. Due to usually a complex nature of retirement systems and uncertainty that accompanies long-term decisions, behaviours in saving for retirement can be particularly sensitive to the confidence level. These decisions are also limited by bounded willpower because saving for retirement is difficult both, cognitively and in terms of self-control [Mullainathan, Thaler 2000]. Empirical evidence indicates that most people do not plan well for retirement [Brucker, Leppel 2013].

Individuals are usually passive and show low levels of motivation when it comes to designing their pension plan [Benartzi, Thaler 1999; Hedesström et al. 2007]. They usually agree with default suggested options [Johnson et al. 1992], procrastinating their decisions to the very last moment [Choi et al. 2001, 2003] or even trying to avoid making a decision regarding their pension plans [Iyengar, Lepper 2000]. Even economists are lazy and poorly motivated when it comes to formulating their own pension plans, although they usually spend more time making decisions and are more satisfied with them than non-professionals [Kogut, Dahan 2012]. With so many uncertain factors about pension savings, including the often expected instability of pension systems over the long term, thinking about retirement without detailed planning to assure the future may often end in retirement anxiety [Hayslip et al. 1997].

Selnow [2004] provided a general explanation for why people tend not to plan well for retirement. Firstly, the payoff for retirement saving is uncertain and distant. Secondly, the cost of retirement saving is "foregone by current consumption" and, thus, failure to save yields instant gain. Furthermore, there is no immediate reward for doing the right thing, and no immediate penalty for not doing it. Lastly, there are no clear deadlines before which one is fine and after which one is in trouble.

On the other hand, financial literacy is one of the most indicated factors determining, with positive correlation, the confidence of decisions about retirement and pension savings [Lusardi, Mitchell 2008]. Knowledge errors in defining retirement plans are sizeable, especially for those with less education and those who are further away from retirement. These errors also matter in developing retirement plans, such as the retirement age allowed by law. Clark, Morrill and Allen [2012] found that employees who think that benefits can only be obtained at later age plan to retire at older age.

Research also indicates that the effect of financial literacy on retirement confidence may be complicated, indirect, and fully mediated by financial management practices of individuals [Braunstein, Welch 2002; Hilgert et al. 2003; Sabri et al., 2015]. The results show that providing financial information, and even financial education, may not be as important in ensuring retirement confidence as healthy management of an individual's personal finance. In other words, improvement of financial literacy will increase confidence and encourage individuals to practise better financial management, which will further enhance retirement confidence, as well allowing them to gain a sense of preparedness and perception of future retirement as a welcoming event.

Some mediating factors were also found. Women consistently show lower retirement confidence when compared with men. The gender gap in financial knowledge and confidence persists even after taking into account education, income, and labour market participation. Women and those with low financial net wealth are less heavily represented among individuals who have well-articulated retirement plans. More heavily represented are the self-employed, those with high financial net wealth, and those who have spoken to a professional financial planner [Brucker, Leppel 2013].

Howlett, Kees and Kemp [2008] suggest that individuals who express higher levels of future orientation are more likely to participate in a retirement plan, an effect moderated by a self-regulatory state. Their results also suggest that financial knowledge and orientation towards the future can interact to influence the likelihood of voluntary plan participation. Among individuals with a basic level of financial knowledge, those who are future-oriented expressed a greater likelihood to participate in a retirement plan than less future-oriented individuals. However, in the absence of knowledge, consumer orientation toward the future did not influence the likelihood of voluntary plan participation.

Individuals who lack knowledge in interest and inflation rates are expected to be more prone to suffer a fall into overconfidence when assessing their expected retirement income [Sabri et al. 2015]. Financial planning and consistent implementation of financial management practices make individuals more optimistic about their retirement, increasing their confidence as they most probably perceive themselves as being well-prepared and confident in their ability to achieve retirement goals [Taylor-Carter et al. 1997].

## 3. Data and methodology

### 3.1. Participants and procedure

The study sample comprised 168 employees of the Maria Curie-Skłodowska University. An online questionnaire was made available to all university employees between 12-27 June 2014, over one month prior to closing of the first transfer window for those who wished to switch from the 2-tier pension saving scheme and 1-tier public only scheme. 105 respondents (experimental group or Group I) declared that they had already made a decision about their contribution saving scheme. The remaining 63 undecided respondents (37.5%) were considered as a control group for comparisons (Group II).

The mean age of all respondents was 42.9 years (SD =11.206). In the experimental group there were 2 subgroups:

- Group IA: respondents who decided to continue saving in 2-tier scheme; N = 61 or 36.3% of all respondents with average age 40.0 years (SD = 8.047),
- Group IB: respondents who decided to continue saving in 1-tier scheme; N = 44 or 26.2% of all respondents with average age 46.6 years (SD = 12.987).

The difference between averages in Group IA and Group IB was statistically significant ($t = –3.208$, $p < 0.01$; Levene test: $F = 25.573$, $p = 0.000$) showing that younger respondents more often decided to keep saving in the 2-tier scheme.

### 3.2. Measures

There were three sections in the survey. The first consisted of 5 questions related to the process of making a decision about continued options for saving for retirement. The respondents were asked whether they had already made their decisions and if they had provided the necessary declaration (if required), how confident they were in making their decision (declaration of confidence value between 1-lowest and 10-highest), what was the pattern of decision-making (own decision, advice from family or friends, advice from financial expert, passiveness due to lack of knowledge, passiveness due to lack of belief in the meaning of decision making for further saving for retirement).

The second section consisted of 3 questions related to general beliefs and behaviours in the case of pension saving. The respondents were asked to imagine themselves as pensioners and assess how they felt about all aspects of their retirement. They also declared whether they had estimated their future retirement needs and calculated the annuity payment required to achieve that value (i.e. whether they have a rational retirement plan under control), and whether they save for retirement using voluntary instruments (being any kind of individual retirement account or “IRA”), separate from any obligatory system.

The last section described the respondent’s profile (age, gender, marital status, employment group: academic teacher, technical employee, administration, support services; university structure: one of 11 faculties or rector’s department).

### 3.3. Research questions and hypotheses

The main question of the research refers to finding behaviours and beliefs that can mediate the level of confidence when individuals make decisions regarding their pension saving. Having in mind the literature reviewed and already known effects, the following hypotheses are tested:

**Hypothesis 1.** Individuals with higher financial practice (i.e. voluntary saving for retirement and those who at least calculated their future needs and established a rational retirement saving plan) make decisions related to retirement savings with higher confidence than passive individuals.

**Hypothesis 2.** Individuals declaring that they made the decision themselves (i.e. without advice of professional or informal experts) are more confident than those following any expert's opinion.

**Hypothesis 3.** Individuals who postpone their decision to the very last moment are less confident when making decisions related to retirement saving than those who made a decision earlier.

**Hypothesis 4.** Men are more confident than women in making decisions related to retirement saving.

**Hypothesis 5.** Individuals who better assess their future as pensioners (optimism above median) are more confident than those who assess it worse (optimism below median).

## 4. Results and discussion

Only correlations between four of the variables and confidence of the decision were found to be significant. The direction of relationships initially confirmed the hypotheses, showing that higher levels of declared confidence were observed in the case of men, those who already made their decision rather than asking experts, and better assessed their future as pensioners.

**Table 1.** Significant correlations between confidence and variables

| Variable | Confidence of decision |
|---|---|
| Declared option of continued pension saving | –0.465** |
| Pattern of decision-making | –0.372** |
| Assessment of own future as pensioner | 0.237** |
| Gender | –0.189* |

Note: * Statistically significant at p = 0.05. ** Statistically significant at p = 0.01.

Source: Author's own study.

Detailed analysis of the significance of variables as possible mediators explaining different levels of confidence is presented in Tables 2-6.

**Table 2.** Confidence of decisions vs. retirement financial assurance activity

| Retirement assurance activity | | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Confidence of decision | No IRA and no estimation | 88 | 5.648 | 3.002 | 0.320 |
| | IRA or estimation | 71 | 6.676 | 2.633 | 0.312 |

Source: Author's own study.

Differences between the groups were distributed normally (Z = 1.132, p > 0.1) with homogenous variances (Levene: F = 2.154, p > 0.1). On average, active participants who saved via an IRA for retirement, or at least calculated their need for retirement savings, declared significantly higher confidence of decisions (M = 6.676, SE = 0.312) than passive participants (M = 5.648, SE = 0.320), t(157) = –2.267, p = 0.025, r = 0.18. Yet, although higher financial activity may lead to higher confidence of financial decisions, the scale of the effect is quite low as it explains only 3.2% of the variance.

**Table 3.** Confidence of decisions vs. expert-following behaviour

| Expert-following behaviour | | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Confidence of decision | Formal or informal expert | 81 | 5.132 | 2.817 | 0.313 |
| | Himself / herself | 57 | 7.128 | 2.590 | 0.293 |

Source: Author's own study.

Distribution of differences between the groups was non-normal (Z = 1.993, p = 0.001) and the Mann-Whitney test was provided instead of a t-test. Participants who made decisions themselves (M = 7.128) were significantly more confident of their decision than those who followed any expert (M = 5.132), U = 1886.00, z = −4.419, p < 0.001, r = −0.35. The scale of the effect is medium but much stronger than in the case of financial activity. Moreover, respondents who followed formal experts (N = 43) were more confident (M = 6.047) than those who considered family and friends as experts (N = 10, M = 4.600), normal distribution (Z = 1.106, p > 0.1), homogenous variance (F = 1.631, p > 0.1), t(157) = –1.681, p < 0.1, r = 0.23.

**Table 4.** Confidence of decisions vs. procrastination

| Decision 1 month or more before deadline | | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Confidence of decision | No (late decision) | 54 | 4.130 | 2.518 | 0.343 |
| | Yes (early decision) | 105 | 7.124 | 2.510 | 0.245 |

Source: Author's own study.

Distribution of differences between groups were non-normal (Z = 2.869, p < 0.001) and the Mann-Whitney test was provided instead of t-test. Participants who made their decision over one month before the deadline (M = 7.124) were significantly more confident of their decision than those who procrastinated (M = 5.132), U = 1149.50, z = −6.176, p < 0.001, r = −0.49. The scale of the effect was medium, but strongest when compared to all previously analysed factors and as initially indicated by correlation analysis.

**Table 5.** Confidence of decisions vs. gender

| | Gender | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Confidence of decision | Male | 63 | 6.778 | 2.893 | 0.364 |
| | Female | 96 | 5.667 | 2.801 | 0.286 |

Source: Author's own study.

Distribution of observed differences between groups can be assumed to be normal ($Z = 1.407$, $p < 0.05$) and t-test was used to verify hypothesis 4. Results confirmed significantly higher confidence in men ($M = 6.778$) than in women ($M = 5.667$), homogenous variance ($F = 0.406$, $p > 0.1$), $t(157) = -2.415$, $p = 0.017$, $r = 0.19$. This was confirmed by the Mann-Whitney test assuming non-normal distribution ($Z = 1.407$, $p > 0.01$), $U = 2335.0$, $Z = -2.444$, $p = 0.015$, $r = -0.194$.

**Table 6.** Confidence of decisions vs. self-assessment of himself/herself as retiree

| | Self-assessment of own retirement prospect | N | Mean | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Confidence of decision | Median or above | 88 | 6.739 | 2.562 | 0.273 |
| | Below median | 71 | 5.324 | 3.074 | 0.365 |

Source: Author's own study.

Distribution of differences between the groups was non-normal ($Z = 5.071$, $p < 0.001$) and the Mann-Whitney test was provided. The results show significantly higher confidence of decisions made by participants who better assess themselves as retirees ($M = 6.739$) compared to those who presented the lowest opinions ($M = 5.324$), $U = 0.000$, $Z = -8.900$, $r = 0.87$. The scale of the effect can be considered as strong, explaining almost 87% of the variance between two extreme groups.

Finally, logistic regression analysis was applied as a method of predicting which of two categories of observations is likely to belong to given certain other information [Field 2009]. In this case the method allowed the prediction of which two categories of decision confidence (lowest or highest) a participant was likely to belong to, given information on his or her behaviour regarding pension saving and the way of making decisions about continued saving. There were four variables introduced into the model to explain the chances of higher confidence:

- DEC – discrete variable describing whether one made decision or not,
- ACT – discrete variable describing one's pension saving activities (saving with IRA, or at least calculating future needs, or passiveness),
- EXP – discrete variable describing whether one made decisions oneself or followed formal or informal experts,
- RET – variable describing self-assessment of one's future prospects during retirement (from 1 to 10).

Results are presented in Table 7.

**Table 7.** Variables introduced in logistic regression model of decision confidence

| Variable | B (SE) | 95% CI for Odds Ratio | | |
|---|---|---|---|---|
| | | Lower | Odds Ratio | Higher |
| Constant** | 2.513 (1.265) | | | |
| DEC*** | –1.585 (0.474) | 0.081 | 0.205 | 0.519 |
| ACT** | 1.057 (0.487) | 1.107 | 2.879 | 7.483 |
| EXP*** | –1.294 (0.493) | 0.104 | 0.274 | 0.721 |
| RET* | 0.193 (0.099) | 1.000 | 1.213 | 1.472 |

Note: $R^2 = 0.305$ (Cox&Snell), 0.412 (Nagelkerke). Model: $\chi^2(4) = 41.413$, $p < 0.001$. * $p = 0.05$, ** $p < 0.05$, *** $p < 0.01$.

Source: Author's own study.

The introduced variables explained over 41% of confidence variance (Nagelkerke) and confirmed previously discovered relationships. Odds for being the most confident with decisions are almost 3 times higher for those respondents who are active in financially securing their retirement and 1.2 times higher in the case of those who anticipated their retirement as a good time overall. Standard error was the lowest in the latter case, making the 95% confidence interval quite narrow and the effect size reliable. Conversely, the odds of being confident for those who followed experts in their decisions were almost 75% lower than for those who declared they made the decisions themselves, without expert advice. An even stronger fall of odds (80%) was observed for all participants who postponed their decision compared to those deciding earlier.

## 5. Conclusion

Results of the research show that the most confident decision-makers for retirement saving options were men, especially those active in financially securing their retirement, positively assessing their future, and making early decisions without the help of any experts. All initial hypotheses were thereby confirmed.

The effect of higher confidence, to some extent, can be explained by acquired financial experience and additionally strengthened by expectations of a good situation during retirement, arising from a subjective assessment. Both variables were strong predictors in explaining higher confidence in decision making. At the same time, the results confirm other research indicating that financial experience may be more important for financial confidence than knowledge itself [Braunstein, Welch 2002; Hilgert et al. 2003; Sabri et al. 2015].

Although the problem of pension saving is rather complicated even for economists, quite large numbers of participants (over 41%) made decisions ignoring the opinion of experts, even though the employees from the Faculty of Economics accounted for only 11.9% of the sample. Results are also in line with many discoveries presenting generally higher confidence in men regarding financial matters. This can be explained by a common overconfidence of individuals making financial decisions. Segura and Strehlau [2012] discovered similar behaviour in the case of investment advisory clients, called 'confident investors'. They need advisor support to refine their investment behaviour, but normally they evaluate their abilities as above average, overestimate their knowledge, tend to ignore analytical reports and views that contradict their own. They also have difficulty in envisaging their investments as organised portfolios. 'Confident investors' accounted for 21.5% of the sample explored by Segura and Strehlau.

Decreasing the confidence of decision-making is also associated with procrastination of decision which, on the other hand, is also a common effect in the case of designing pension plans, as Benartzi and Thaler [1999], Hedesström et al. [2007], Choi et al. [2001, 2003], and Iyengar and Lepper have all proved [2000]. This research explains that procrastination in decision-making can lead to lower confidence of decisions, even if they are finally taken with the help of professionals.

## References

Benartzi S., Thaler R.H., 1999, *Risk aversion or myopia? Choices in repeated gambles and retire-ment investments*, Management Science, No. 45, pp. 364-381.

Braunstein S., Welch C., 2002, *Financial Literacy: An Overview of Practice, Research, and Policy*, Federal Reserve Bulletin, Vol. 88 (11), pp. 445-458.

Brucker E., Leppel K., 2013, *Retirement Plans: Planners and Nonplanners*, Educational Gerontology, No. 39 (1), p. 1–11. http://doi.org/10.1080/03601277.2012.660859 (2015.10.12).

Choi J.J., Laibson D., Madrian B.C., Metrick A., 2003, *Passive decisions and potent defaults*, National Bureau of Economic Research Working Paper No. 9917.

Choi J.J., Laibson D., Madrian, B.C., Metrick A., 2001, *Defined contribution pensions: plan rules, participant decisions, and the path of least resistance*, National Bureau of Economic Research Working Paper No. 8655.

Clark R.L., Morrill M.S., Allen S.G., 2012, *The Role of Financial Literacy in Determining Retirement Plans*, Economic Inquiry, Vol. 50, No. 4, pp. 851-866.

Estes R., Hosseini J., 2001, *The Gender Gap on Wall Street: An Empirical Analysis of Confidence in Investment Decision Making*, The Journal of Psychology, 122(6), pp. 577-590.

Field A., 2009, *Discovering Statistics Using SPSS3*, Sage Publications Ltd.

Flavell J.H., 1979, *Metacognition and cognitive monitoring: A new area of cognitive development inquiry*, American Psychologist, 34, pp. 906-911.

Hayslip B., Bezerlein M., Nichols S., 1997, *Assessing anxiety about retirement: the case of academicians*, International Journal of Aging and Human Development, No. 44, pp. 15-36.

Hedesström T.M., Svedsäter H., Gärling T., 2007, *Determinants of the use of heuristic choice rules in the Swedish Premium Pension Scheme: An Internet-based survey*. Journal of Economic Psychology, No. 28, pp. 113-126.

Hilgert M.A., Hogarth J.M., Beverly S.G., 2003, *Household financial management: The connection between knowledge and behavior*, Federal Reserve Bulletin, No. 87, pp. 309-322.

Howlett E., Kees J., Kemp E., 2008, *The Role of Self-Regulation, Future Orientation, and Financial Knowledge in Long Term Financial Decisions*, Journal of Consumer Affairs, No. 42 (2), pp. 223-242.

Iyengar S.S., Lepper M.R., 2000, *When choices are demotivating: Can one desire too much of a good thing?*, Journal of Personality and Social Psychology, No. 79, pp. 995-1006.

Johnson E.J., Hershey J., Meszaros J., Kuhnreuther H., 1992, *Framing, probability distortions, and insurance decisions*, Journal of Risk and Uncertainty, No. 7, pp. 35-51.

Kogut T., Dahan M., 2012, *Do you look forward to retirement? Motivational biases in pension decisions*, Judgment and Decision Making, Vol. 7, No. 3, pp. 282-291.

Lusardi A., Mitchell O.S., 2008, *Planning and Financial Literacy: How Do Women Fare?*, American Economic Review, No. 98, pp. 413-417.

Mullainathan S., Thaler R., 2000, *Behavioral economics*, Massachusetts Institute of Technology Department of Economics Working Paper 00-27, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=245828 (2015.10.12).

Orenstein M.A., 2013, *Pension Privatization: Evolution of a Paradigm*, Governance: An International Journal of Policy, Administration, and Institutions, No. 26 (2), pp. 259-281.

Sabri M.F., Juen T.T., Othman M.A., Rahim H.A., 2015, *Financial Literacy, Financial Management Practices, and Retirement Confidence among Women Working in Government Agencies: A Mediation Model*, The Journal of Developing Areas, No. 49 (6), pp. 405-412.

Segura A.C., Strehlau S., 2012, *Personality-Based Segmentation of Brazilian Private Banking Clients*, Latin American Business Review, No. 13, pp. 289-309.

Selnow G.W., 2004, *Motivating retirement planning: Problems and solutions*, [in:] O.S. Mitchell, S.P. Utkus (eds.), *Pension design and structure: New lessons from behavioral finance*, Oxford University Press, Oxford, pp. 43-52.

Simon H.A., 1979, *Rational decision making in business organizations*, American Economic Review, Vol. 69, pp. 493-513.

Taylor-Carter M.A., Cook K., Weinberg C., 1997, *Planning and expectations of the retirement experience*, Educational Gerontology: An International Quarterly, Vol. 23, No. 3, pp. 273-288.