

Social insurance knowledge: implications for education

As the increasing impact of financialization on our lives, an extensive awareness of insurance – an integral part of financial knowledge, proves ever more important. A conducted in Poland survey shows that Poles, especially women, the less educated and those living in rural areas, have very limited knowledge about insurance. In order to increase this knowledge and financial awareness, the state should not only strive to provide a proper education, but also take actions to broaden the actual level of this knowledge and foster informed financial behaviour on the part of individuals.

Key words: financial awareness, gender, pension system, state policy

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Introduction

A financial education has recently been shown to be increasingly important for the financial security of an average household in relation to deciding on how to budget, and here not only during the economically active periods, but also during retirement.¹ Financial knowledge is essential when it comes to the systematic management of personal finance in different kinds of situations.² Financial comfort and stability are determined by our decisions and actions, which need to be based on at least some level of knowledge as to the operating mode of financial markets, including those of insurance.³

The increasing role of financial markets has an impact on everyone's lives.⁴ Thus, financial knowledge is also increasingly important, as people tend to conduct more and more financial transactions.⁵ Financialization leads to the "penetration of financial logic into everyday realms".⁶ It leads to the increased power, range, and impact of the finance and insurance sectors. Hence, knowledge resulting from education should become our opportunity to increase and make the best use of any accumulated assets for the sake of our "economic survival" in the contemporary world.⁷

While financial knowledge is only one of the components of so-called financial literacy, along with attitudes and behaviours, the lack of proper knowledge turns out to be the most decisive factor triggering low levels of financial awareness.⁸ Knowledge, though not sufficient in itself, is essential for understanding how to make sound decisions.⁹ In order to make a society financially literate, knowledge has to be transformed

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- 1 OECD/INFE, *International Survey of Adult Financial Literacy Competencies (2016)*, Paris 2016; R. Fonseca, A. Kapteyn *et al.*, *A Longitudinal Study of Well-being of Older Europeans: Does Retirement Matter?*, "Journal of Population Ageing" 2014, 7(1), DOI: 10.1007/s12062-014-9094-7.
 - 2 A. Dwiastani, *Analysis of financial knowledge and financial attitude on locus of control and financial management behavior*, "Management and Business Review" 2017, Vol. 1(1), pp. 1–8, DOI: 10.21067/mbr.v1i1.2043.
 - 3 C.A. Robb, A. Woodyard, *Financial knowledge and best practice behavior*, "Journal of Financial Counseling and Planning" 2011, 22(1).
 - 4 C. Eaton, J. Habinek *et al.*, *The financialization of US higher education*, "Socio-Economic Review" 2016, 14(3), DOI: 10.1093/ser/mwv030.
 - 5 Y. Kadoya, M. Khan, *Explaining Financial Literacy in Japan: New Evidence Using Financial Knowledge, Behavior, and Attitude*, "Sustainability" 2017, 12(9), DOI: 10.3390/su12093683.
 - 6 L. Pellandini-Simányi, F. Hammer, Z. Vargha, *The Financialization of Everyday life or the Domestication of Finance? How mortgages engage with borrower' temporal horizons, relationships and rationality in Hungary*, "Cultural Studies" 2015, Vol. 29(5–6), <https://doi.org/10.1080/09502386.2015.1017142>.
 - 7 M. Haiven, *The Uses of Financial Literacy. Financialization, the Radical Imagination, and the Unpayable Debts of Settler Colonialism*, "Cultural Politics" 2017, Vol. 13(3), p. 350, <https://doi.org/10.1215/17432197-4211350>.
 - 8 L.E. Pinto, *When politics trump evidence: financial literacy education narratives following the global financial crisis*, "Journal of Education Policy" 2013, Vol. 28(1), <https://doi.org/10.1080/02680939.2012.690163>.
 - 9 J.S. Hastings, B.C. Madrian, W.L. Skimmyhorn, *Financial Literacy, Financial Education and Financial Outcomes*, "Annual Review of Economics" 2013, 5(1), p. 347, <https://doi.org/10.1146/annurev-economics-082312-125807>;

into skills.¹⁰ This enables society members to actively engage in dynamic, knowledge-based economies.¹¹

As the existing literature on financial literacy tends to focus on two main areas, *i.e.* the determinants of financial literacy and the impact of financial literacy on financial behaviour,¹² we shall follow these two trends in our paper, through trying to relate them to insurance knowledge. Thus, we can say that research into insurance knowledge focuses on indicating the factors that may impact the level of insurance awareness and on determining how the application of this knowledge to a given specific financial form of behaviour affects people's financial outcomes.

The general aim of this article is to assess how knowledgeable and aware Poles are, when it comes to social insurance, including pension insurance, and the factors that affect it. The specific aim is to indicate how to improve knowledge and awareness of these topics. In addition, the study also analyses whether, and in what way, financial knowledge determines people's views on financial security matters and the existing social and financial inequalities within society.

The present paper is an attempt to verify the following research hypotheses:

H1: The level of knowledge on social insurance is affected by education.

H2: The perception of equality in a given society depends on the level of insurance knowledge.

H3: Poles realize that they should be responsible for their own financial security during old-age.

The article consists of four parts. Following this introduction, a review of the subject literature provides an overview of the existing theory and research on the impact of education on insurance knowledge. The paper then discusses the data collection approach and explains our research method. The subsequent part presents the outcomes of empirical research employing linear regression in order to explain which factors determine the level of insurance knowledge. Next, using Spearman's Rank correlation coefficient, we examine the relationship between the individual index of insurance knowledge and variables referring to the financial situation of respondents and to their perception of equity in society. The article ends with a concluding section.

J. Kim, M.S. Gutter, T. Spangler, *Review of Family Financial Decision Making: Suggestions for Future Research and Implications for Financial Education*, "Journal of Financial Counseling and Planning" 2017, Vol. 28(2), p. 253, DOI: 10.1891/1052-3073.28.2.253.

10 M. Altman, *What Behavioural Economics Has to Say about Financial Literacy*, "Applied Finance Letters" 2013, Vol. 2(1), p. 12, <https://doi.org/10.24135/afl.v2i1.9>.

11 P. Sahlberg, *Education Reform for Raising Economic Competitiveness*, "Journal of Educational Change" 2006, 7(4), p. 261, DOI: 10.1007/s10833-005-4884-6.

12 P.J. Morgan, L.Q. Trinh, *Determinants and Impacts of Financial Literacy in Cambodia and Viet Nam*, "Journal of Risk and Management" 2019, 12(1), 19, p. 2, <https://doi.org/10.3390/jrfm12010019>.

Review of the existing subject literature/ theoretical framework

Financial knowledge is affected by education, but this relation is not simple or easy to determine.¹³ Although financial education may improve knowledge and awareness, it does not necessarily guarantee or lead to changes in financial behaviours.¹⁴ Even in countries with the highest level of schooling, financial literacy tends to be low.¹⁵ As we know, education includes not only formal schooling, but also out-of-school learning, including self-education¹⁶ and instruction provided in places of work.¹⁷ Isabel Schnabel and Reinhold Schnabel¹⁸ also underline the important role of family background in education.

Most authors agree that gender has an impact on financial knowledge.¹⁹ However, according to Raquel Fonseca, Kathleen J. Mullen, Gema Zamarro and Julie Zissimopoulos, the

gap in financial literacy is not explained by differences in the characteristics of men and women – but rather differences in coefficients, or how literacy is produced.²⁰

Age also affects knowledge of and behaviour towards financial markets.²¹

Similarly to age, place of residence also influences insurance knowledge, but not in a direct way. It is more the impact of the environment individuals live in and the people

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- 13 R. Henager, B.J. Cude, *Financial Literacy and Long- and Short-Term Financial Behavior in Different Age Groups*, "Journal of Financial Counseling and Planning" 2016, Vol. 27(1), DOI: 10.1891/1052-3073.27.1.3; D. Messacar, M. Frenette, *Education savings plans, matching contributions, and household financial allocations: Evidence from a Canadian reform*, "Economics of Education Review" 2019, p. 73, <https://doi.org/10.1016/j.econedurev.2019.101922>.
- 14 T. Kaiser, L. Menkhoff, *Does financial education impact financial literacy and financial behavior, and if so, when?*, "The World Bank Economic Review" 2017, 31(3), DOI: 10.1093/wber/lhx018.
- 15 A. Lusardi, O.S. Mitchell, *Financial Literacy Around the World: An Overview*, "Journal of Pension Economics & Finance" 2011, Vol. 10(4), <https://doi.org/10.1017/S1474747211000448>.
- 16 B. Deych, *Scope, Policies and Strategies of Out-of-School Education in Russian Educational Research Literature of the Late 19th and Early 20th Centuries*, "Educational Studies" 2012, No. 2, DOI: 10.17323/1814-9545-2012-2-257-272.
- 17 A. Lusardi, *Financial literacy and the need for financial education: evidence and implications*, "Swiss Journal of Economics and Statistics" 2019, 155(1), pp. 4-7, DOI: 10.1186/s41937-019-0027-5.
- 18 I. Schnabel, R. Schnabel, *Family and Gender Still Matter: The Heterogeneity of Returns to Education in Germany*, ZEW Discussion Paper No. 02-67, 2002, p. 3, <http://dx.doi.org/10.2139/ssrn.441701>.
- 19 D. Walczak, S. Pieńkowska-Kamieniecka, *Gender differences in financial behaviours*, "Inżynieria Ekonomika-Engineering Economics" 2018, 29(1), DOI: 10.5755/j01.ee.29.1.16400; A. Woodyard, C. Robb, *Financial Knowledge and the Gender Gap*, "Journal of Financial Therapy" 2012, 3(1), p. 10, DOI: 10.4148/jft.v3i1.1453; C.E. Bannier, M. Schwarz, *Gender- and education-related effects of financial literacy and confidence on financial wealth*, "Journal of Economic Psychology" 2018, Vol. 67, DOI: 10.1016/j.joep.2018.05.005; A. Cwynar, W. Cwynar *et al.*, *Why Do Consumers Remain Financially Illiterate? The Empirical Test of Some Less Investigated Reasons*, "Journal of Eastern European and Central Asian Research" 2019, Vol. 6(1), pp. 40-55, DOI: 10.15549/jeeacr.v6i1.285.
- 20 R. Fonseca, K.J. Mullen *et al.*, *What explains the gender gap in financial literacy? The role of household decision making*, "Journal of Consumer Affairs" 2012, 46(1), DOI: 10.1111/j.1745-6606.2011.01221.x.
- 21 J.M. Norvilitis, M.M. Merwin *et al.*, *Personality factors, money attitudes, financial knowledge, and credit card debt in college students*, "Journal of Applied Social Psychology" 2006, 36(6), <https://doi.org/10.1111/j.0021-9029.2006.00065.x>.

they spend time with, *i.e.* the influence of family, school or friends.²² Moreover, the kind of work which is performed may influence the level of knowledge, although the impact concerns not the type work itself, but rather the activities associated with it, such as, for instance, contacts with others.²³ Yoshihiko Kadoya and Mostafa Khan²⁴ have also found that there is no relation between financial knowledge and employment status.

The lack of adequate financial knowledge may be perceived as weakness, leading to a distorted assessment of reality and, subsequently, the taking of inadequate actions. Besides, insufficient knowledge may result in the decisions made being based on aroused emotions rather than common sense.²⁵ Having considerable finance knowledge can eliminate or at least reduce the likelihood of falling victim to fraud.

Financial knowledge about social insurance turns out to be particularly important in this respect, as it often concerns one's future. Once made, inadequate financial decisions causing future losses cannot be reversed or changed.²⁶ Individuals tend to discover too late that they have not accumulated sufficient resources to maintain financial independence during retirement.²⁷ One of the most important factors enabling us to make sound financial decisions in the area of social security in old-age is knowing the rules and solutions of the pension system. In order to reduce the state's expenditure on pensions, a defined-contribution pension system was implemented in Poland in 1999. As estimated by the European Union, the gross replacement rate of the public pension scheme in Poland will lower from the current rate of 53% to 29% in 2060.²⁸ Hence, citizens need to be aware of these facts in order to realize that they should make additional savings for old age.²⁹

The consequences of financial ignorance concerning other issues related to social insurance may also be severe. For example, mistakes made during the process of applying for social insurance or not having such insurance at all may result in not being covered by public health insurance. One of the greatest financial scandals in recent years in Poland clearly illustrates both this problem and the level of financial knowledge within society. Like a classic financial pyramid, the company "Amber Gold" promised an annual rate of return of over 10% through investing in gold. Over 19 thousand people fell victim,

22 R. Reid, *A note on the environment as a factor affecting student performance in principles of economics*, "The Journal of Economic Education" 1983, 14(4); A. Grohmann, R. Kouwenberg, L. Menkhoff, *Childhood roots of financial literacy*, "Journal of Economic Psychology" 2015, Vol. 51, DOI: 10.1016/j.joep.2015.09.002.

23 C. Fuller, D. Biros, M. Imperial, *Knowledge retention in information assurance computerbased training: a comparative study of two courses for network user*, 6th Annual Security Conference, Las Vegas 2007.

24 Y. Kadoya, M. Khan, *op. cit.*

25 G.A. Akerlof, R.J. Shiller, *Phishing for phools: The economics of manipulation and deception*. "Princeton University Press" 2015, XI, <https://doi.org/10.1515/9781400873265>.

26 N. Hendren, *Knowledge of future job loss and implications for unemployment insurance*, "American Economic Review" 2017, 107(7), DOI: 10.1257/aer.20151655.

27 J. Kim, J. Kwon, E.A. Anderson, *Factors Related to Retirement Confidence: Retirement Preparation and Workplace Financial Education*, "Financial Counseling and Planning" 2005, Vol. 12(2), p. 77.

28 European Commission, *The 2015 Ageing Report. Economic and budgetary projections for the 28 EU Member States (2013–2060)*, "European Economy" 2015, 3, p. 359, DOI:10.2765/877631.

29 B.H. Casey, J.M. Dostal, *Voluntary pension saving for old age: Are the objectives of self responsibility and security compatible?*, "Social Policy & Administration" 2013, 47(3), DOI: 10.1111/j.1467-9515.2012.00853.x.

with total losses estimated at around 870 million PLN. A lack of financial knowledge, one of the topics of our paper, was probably the most important factor in determining the magnitude of the fraud and even its existence at all.³⁰

Pension system in Poland

In order to analyze the level of social insurance knowledge in Poland, especially in relation to education, it is necessary to outline the country's pension system (Table 1). The general pension system is operated by a specific institution, ZUS [Zakład Ubezpieczeń Społecznych, Eng. Social Insurance Institution]. ZUS administers the special-purpose fund – FUS [Fundusz Ubezpieczeń Społecznych, Eng. Social Insurance Fund]. Another part of the system, *i.e.* the provision pension scheme, offers social security within a non-contributory and fully tax-financed pension system for the remaining part of the populace as employed as

- military personnel,
- former police officers, the Internal Security Agency, the Intelligence Agency, Military Counterintelligence, the Military Intelligence, the Central Anticorruption Bureau, the Border Guards, the Marshal's Parliamentary Guard, the State Protection Service, the State Fire Service, the Customs and Treasury Service, and the Prison Service as well as for their families,
- judges and prosecutors.

The last part of the existing pension system is designed for farmers and subjected to a separate institution – KRUS [Kasa Rolniczego Ubezpieczenia Społecznego, Eng. The Agricultural Social Insurance Fund, ASIF]. The agricultural pension system provides social insurance for farmers, their spouses and household.³¹

Table 1. Pension systems in Poland

Specifics	General pension system (first pillar)	Provision pension system	Agricultural pension system
Number of persons insured (in pension and disability insurance – 31.12.2017, in 1000s)	14,700	-	1,270.5

³⁰ B. Nowak, *Political Scandals And Impoliteness: The Polish "Amber Gold" Affair In Talk Shows* [in:] *Form, Meaning and Function in Theoretical and Applied Linguistics*, ed. K. Drabikowska, M. Izdebska, M.A. Prazmowska, Newcastle 2017.

³¹ A. Micekiene, D. Walczak, S. Pieńkowska-Kamieniecka, *Social Insurance for Farmers in Poland and Lithuania – a Comparative Analysis*, "Comparative Economic Research. Central and Eastern Europe" 2019, 22(1), DOI: 10.2478/cer-2019-0002.

Specifics	General pension system (first pillar)	Provision pension system	Agricultural pension system
Number of pensions paid out (average in 2017, in 1000s)	5,230.6	285.6	918.4
Number of disability benefits paid out (average in 2017, in 1000s)	875.7	30.9	256.9
Public spending on benefits (pension, disability benefits, survivors benefits), for 2017, in millions of PLN	182,993.5	16,097.0	16,924.4
Contributions payer/ contribution rates	<ul style="list-style-type: none"> - employee/employer (pension contribution sums up to 19.52% of income; disability contribution sums up to 8% of income) - employer (accident contribution 2.45% of income) - employee (sickness contribution 2.45% of income) 	without contributions	farmer (the contribution does not depend on income)
Health insurance	employee (9% of income)	employee (9% of income)	farmer (the contribution does not depend on income)
Pension benefit (value)	-	higher than average	lower than average
Retirement age (women/ men)	60/65	<ul style="list-style-type: none"> - no requirements for uniformed services - 60/65 years for judges and prosecutors 	60/65
Minimum employment period (to receive minimal pension)	20 years for women and 25 years for men	<ul style="list-style-type: none"> - 15/25 years for uniformed services* - without requirements for judges and prosecutors 	25 years
DC/DB	DC	DB	DB
PAYG (not-funded)/ funded	PAYG	- (without contributions)	PAYG

* For those who began work prior to January 1, 2013, the length of service required to qualify for a retirement pension is 15 years, regardless of age. For those who began after December 31, 2012 the required length of service is 25 years.

Source: own study based on D. Włczak, *Przywileje w zabezpieczeniu na starość w Polsce* [Privileges in old-age pensions in Poland], Toruń 2019; Statistics Poland (GUS), *Retirement and other pensions in 2017*, Warsaw 2018

The general pension system in Poland has three pillars. The first one, presented in Table 1, is mandatory, based on defined-contributions and on a PAYG financing method. The second pillar is voluntary, based on defined-contributions and a funded financing method (Open Pension Funds, Pol. *otwarte fundusze emerytalne*). The third pillar is designed for everyone, not only those insured within the general pension system. It is voluntary and fully funded. This pillar comprises occupational pension plans, individual pension accounts, individual pension security accounts and semi-mandatory employee capital plans (the latter being created in 2019) (for more see: Sebastian Jakubowski³²; Tomasz Jedynak³³).

Materials and methods

Study population and data collection

The analyses presented here are based on a quantitative study commissioned by the Institute of Public Affairs and conducted in Poland by the company Millward Brown in July–August of 2016 (the data is available on request). This was a multi-dimensional study, whose aim was, among other things, to determine the level of knowledge about social insurance in Polish society and to indicate the impact of such knowledge on the attitudes and decisions of insured persons concerning additional saving for old age. This omnibus survey was conducted using CAPI (Computer-Assisted Personal Interviewing) methods on a sample of 1,030 people aged 15–75. The study employed a random, representative nationwide sample, selected from the address base of the Statistics Poland. Stratification took into consideration the size of the place of residence and the territorial distribution within all 16 provinces in Poland, as well as the gender and age of those selected. The RIM (Random Iterative Method) weighting method allows us to conclude that the sample structure was representative for the Polish population as a whole.

Measure

In order to meet the study's research objectives the following procedure was adopted: firstly, calculated was the individual knowledge index (IKI). Then, an average knowledge index (AKI) for social insurance was created. Before this was done, there was a check to ensure that all the questions answered, and which were used to calculate the AKI, covered the same phenomenon. As a result, 3 of 20 questions had to be removed because they underscored the reliability of Cronbach's alpha value. Initially this was only 0.470, but when the number of questions was reduced to 17, Cronbach's alpha was 0.70. In this

³² S. Jakubowski, *New legal standards for investment policy of Open Pension Funds*, "Economic and Environmental Studies" 2015, Vol. 15(1).

³³ T. Jedynak, *The Shape of the Pension Scheme in Poland in the Light of the Conventional Multi-pillar Typologies*, "Problemy Polityki Społecznej" 2019, 1, DOI: 10.31971/16401808.44.1.2019.4765.

study the method of linear regression³⁴ was used to identify which features determine an insurance knowledge. Then using Spearman’s correlation analysis³⁵ the correlation between individual knowledge index and a particular variable was determined. The respondents were mostly women, people living in towns (particularly those with fewer than 100,000 inhabitants), the married, individuals with a basic vocational education, in full-time work, without children and not living with their parents. Most were also not self-employed and moderately satisfied with their own material situation (Table 2).

Table 2. General presentation of survey participants

Variable	N	%	Variable	N	Other characteristics
qualitative variables			quantitative variables		
Sex			Age		
male	497	48.3	years	1,030	mean 44.3; min. 15; max. 75; SD. 16.4
female	533	51.7	Number of persons in the household		
Place of residence			number	1,030	mean 2.4; min. 1; max. 7; SD. 1.2
cities > 500,000	124	12.0	Income in the household		
city 100–499,000	177	17.2	in 1000s PLN/ 1 person	1,030	mean 1.8; min. 0.08; max. 7.5; SD. 1.0
town < 100,000	336	32.6			
rural areas	393	38.2			
Marital status					
single	363	35.2			
married	482	46.8			
divorced/separated	70	6.8			
widowed	115	11.2			
Education					
primary	170	16.5			
basic vocational	375	36.5			
secondary	334	32.5			
higher	149	14.5			
Having children					
no	679	65.9			
yes	351	34.1			

34 G.A.F. Seber, A.J. Lee, *Linear regression analysis. Second Edition*, Hoboken 2003, <http://dx.doi.org/10.1002/9780471722199>.

35 D.G. Bonett, T.A. Wright, *Sample size requirements for estimating Pearson, Kendall and Spearman correlations*, “Psychometrika” 2000, 65(1), pp. 23–28, <https://doi.org/10.1007/BF02294183>.

Variable	N	%
qualitative variables		
Profession		
full-time work	515	50.7
part-time work	50	4.9
unemployed	114	11.2
retired/disabled	264	26.0
school or university student	72	7.2
Parents in the household		
no	839	81.5
yes	191	18.5
Entrepreneur		
no	1,012	98.3
yes	18	1.7
Individual assessment of one's own material status		
very good	49	4.8
quite good	166	16.1
average	479	46.5
quite bad	320	31.1
very bad	16	1.6

Source: own study

Among the 17 questions analyzed in the study, 6 referred to the organization of the pension system in Poland and 11 concerned the persons insured and the contributions made for social insurance. Those questions referred to old age security as broadly understood in Poland (Table 3).

Table 3. Questions verifying knowledge on social insurance

Statement	True/ false	Correct answers		Incorrect answers	
		N	%	N	%
Organizational matters					
ZUS manages the contributions gathered in Social Insurance Fund (FUS)	true	153	14.9	879	85.1
The annual budget used by ZUS to pay benefits constitutes more than half of the annual State budget (ca. 200 billion PLN)	true	217	21.1	813	78.9
ZUS is responsible for collecting the contributions and paying the benefits	true	564	54.8	466	45.2
Occupational pension plans are part of the third pillar of the pension system in Poland	true	919	89.2	111	10.8

Statement	True/ false	Correct answers		Incorrect answers	
		N	%	N	%
Old age pensions are paid from the budget of the Social Insurance Fund	true	151	14.7	879	85.3
ZUS establishes the rates of the contributions for social insurance	false	630	61.2	400	38.8
Questions concerning those insured					
You may verify the total amount of your contributions at one of ZUS branches	true	790	76.7	240	23.3
The contribution for an old age pension is financed by both the employee and the employer	true	621	60.3	409	39.7
The contribution for health insurance is financed by the employee	true	820	79.6	210	20.4
Contributory periods for work done abroad are taken into consideration while determining the right to Polish benefits, if the work was carried out in an EU state with which Poland has signed a proper agreement	true	284	27.6	746	72.4
The contributions for social insurance are gathered on individual accounts then used to pay old age and disability pensions	true	266	25.8	764	74.2
The contribution for pension insurance means contribution to social insurance	true	527	51.2	503	48.8
The contribution for pension insurance allows for the costs of medical treatment to be covered by the Polish Health Fund	false	956	92.8	74	7.2
The contribution for social insurance entitles one to old age pension	true	771	74.9	259	25.1
The contribution for disability pension insurance entitles one to a disability pension in the case of an incapacity for work	true	561	54.5	469	45.5
The contribution for a disability pension entitles one to an old age pension	false	903	87.7	127	12.3
The contribution for old age pension insurance needs to be included in the employment contract	true	706	68.5	324	31.5
The contribution for disability pension insurance needs to be included in the employment contract	true	616	59.8	414	40.2
The contribution for health insurance means contribution to social insurance	false	557	54.1	473	45.9
Self-employed persons are covered by mandatory sickness insurance	false	593	57.6	437	42.4

Source: own study

Based on the answers to the questions presented above, we created an average knowledge index, illustrating the average level of social insurance knowledge among the respondents (1). The maximum number of correct answers was 17. The insurance knowledge level was calculated (in %) as the average of the correct answers to all the questions.

$$\bar{X}(AKI) = \frac{\sum \bar{X}_i}{i} \tag{1}$$

where:

$$\bar{X}_i (IKI) = \frac{\sum_{17} x}{17} \times 100\% \tag{2}$$

$$i = 1.030 \text{ (number of respondents)} \tag{3}$$

and

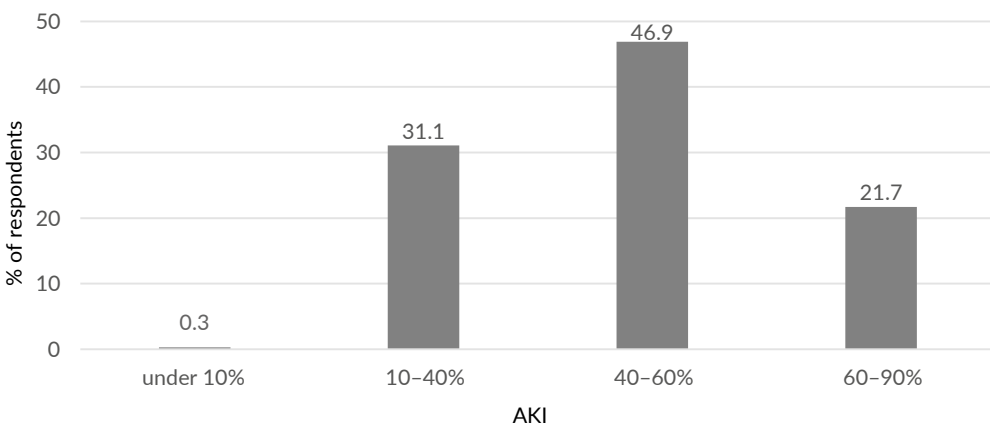
x – response to the question (0 for an incorrect answer and 1 for a correct answer).

The study shows that, on average, respondents answered 8 questions correctly, which gives for an average knowledge index score of 46.8%. The lowest IKI was 0% (one person) while the maximum was 88.24% (two persons).

In order to provide more detailed information on how individual people answered, respondents were categorized into one of five groups depending on their IKI on social insurance. They were classified as: very poor knowledge (less than 10% of answers correct), poor knowledge (10–40%), average knowledge (40–60%), above average knowledge (60–90%) and excellent knowledge (above 90%).

Data contained in Figure 1 indicate that the vast majority of respondents presented either an average (46.9%) or poor (31.1%) knowledge of the topic of social insurance (Figure 1).

Figure 1. Distribution of correct answers to the questions concerning social insurance (in %)



Source: own study based on the research

Let us note that, among the 1,030 people involved in the study, no-one answered more than 15 out of the 17 questions correctly. Thus, none of the respondents could be classified as having an excellent knowledge of social insurance.

Results

Individual variables and insurance knowledge index

A general linear model (GLM) was used to determine the impact of individual variables on the insurance knowledge index measured in the ratio scale. A linear regression model was constructed in which the dependent variable was a continuous variable, *i.e.* the average insurance knowledge index of all the respondents was calculated as a percentage, and the independent variables were continuous variables (respondent's age, number of people in their household, household income per person) and categorical variables. For each categorical variable, a category was specified as a reference group (see Table 4), hereinafter referred to as the "base".

Table 4. Estimation of the general linear model coefficients for the variable "insurance knowledge"

Variable	B	St. error	p-Value
Intercept	31.056	4.887	0.000
Sex (base = women)			
men	3.328	1.100	0.003
Place of residence (base = cities >= 500,000)			
rural areas	-4.043	1.760	0.022
town < 100,000	-1.915	1.790	0.285
city =< 100,000; 499,000	-1.307	1.981	0.509
Education (base = higher)			
primary	-9.966	2.065	0.000
vocational	-7.009	1.688	0.000
secondary	-5.495	1.668	0.001
Profession (base = pupil/student)			
full-time job	13.684	2.271	0.000
part-time job	9.003	3.162	0.005
unemployed	7.304	2.604	0.005
retired/disabled	9.636	2.299	0.000
Entrepreneur (base = yes)			
no	12.176	4.017	0.003

Source: own study

The above data shows that men are characterized by their greater knowledge of the social security system. Among men, the average level of knowledge is 3.3 percentage points higher than for women. If place of residence is taken into account, there are differences in the level of knowledge, but only between people living in rural areas and the largest cities. The average level of knowledge among people from rural areas is 4.0 percentage points lower than among the residents of cities with more than 500,000 inhabitants. This research also shows that the level of knowledge is strongly influenced by a person's level of education. The level of knowledge decreases with each subsequently lowered level of education. The biggest difference in this respect occurs between the highest and lowest educated people. People holding an elementary education have a 10.0 percentage points lower level of knowledge than people with higher education. In the case of people with secondary education, this level of knowledge is 5.5 percentage points lower than the reference group. Taking into account the professional situation of the respondents, those working, especially those who have a permanent job, have the highest level of knowledge about social insurance. Whereas pupils and students, as well as pensioners have the lowest knowledge level. The difference in the level of knowledge between persons with a permanent job and pupils and students is as much as 13.7 percentage points. Having your own business does not lead to a greater knowledge on the social security system or an increased interest in this area. The average level of knowledge among people who do not run their own business is 12.2 percentage points higher than among entrepreneurs. Other qualitative variables, such as the respondent's marital status, having children, living with parents in the same household and assessment of their own financial situation do not have a statistically significant impact on the respondent's level of knowledge about social insurance. In addition, the age of the respondent, the number of people in their household and the amount of income per person in a given household turned out to be irrelevant.

Knowledge and expectations (views)

In this research, we also investigated how the respondent's knowledge, when measured by the individual knowledge index, directly or indirectly affects their approach to selected financial and social issues (Table 5). Nine variables were selected for this analysis. These variables are all connected with the question of who should take care of our financial security and whether or not we should, as citizens, help others in difficult social and financial situations. Therefore, Spearman's rank correlation analysis was used to identify the correlation between the individual knowledge index and these nine variables.

We used the following variables for the analysis of dependence:

X_1 – children should provide financial help for their elderly parents,

X_2 – some people are worth more than others,

X_3 – we should try to treat everyone equally,

X_4 – we should aim for the incomes of all to be relatively equal,

X_5 – we should support disadvantaged social groups, such as the unemployed, the poor, the disabled or the homeless, with money from taxation,

X_6 – social inequalities should be eliminated,

X_7 – the unemployed and the poor are responsible for their own situation,

X_8 – income security in old-age is a crucial topic for society as a whole and we should all aim to provide it,

X_9 – a person’s old age income should depend on their prior financial decisions.

For all of the research variables listed above, respondents could select from among the following answers: “I definitely disagree”, “I rather disagree”, “it’s hard to say”, “I rather agree”, “I definitely agree”.

Table 5. Spearman’s correlation analysis for individual knowledge index and particular variables

Specification	Correlation coefficient	Sig. (2-tailed)	N
IKI and X_1	0.064	0.040	1,030
IKI and X_2	0.076	0.015	1,030
IKI and X_3	0.142	0.000	1,030
IKI and X_4	0.053	0.091	1,030
IKI and X_5	0.144	0.000	1,030
IKI and X_6	0.117	0.000	1,030
IKI and X_7	-0.108	0.001	1,030
IKI and X_8	0.141	0.000	1,030
IKI and X_9	-0.043	0.164	1,030

Source: own study

The results presented in Table 5 show that correlations between the variables turned out to be neither statistically significant nor very weak. In two cases, for IKI – X_4 and IKI – X_9 , the significance level was higher than 0.05. There is no statistically significant relationship between the respondent’s knowledge index and their conviction that we should be aiming at a situation in which all people have the same income, and that any old age security should depend on a person’s prior choices. Although in the remaining cases a correlation was found between the analyzed parameters, it was very weak and most often positive.

A negative correlation was found for only one pair of variables, *i.e.* IKI and X_7 . The higher the individual insurance knowledge index, the less often respondents claim that the unemployed and the poor are responsible for their own situation. This result, therefore, confirms the tendency observed for the remaining questions. In principle, in Poland, increased insurance knowledge accentuates the acceptance of state aid for old age

and decreases the preference for individual prudence. However, it should be emphasized once again that these relationships have also proven to be very weak.

Thus, a full analysis of this problem requires a presentation of what those questions relate to and what the actual opinions are on a given topic.

As shown in Table 6, Poles are generally in favor of equalizing the incomes of all. As many as 75.3% of the respondents quite agree or strongly agree with such a statement. Hence, they opt for an equality of results, which is a typical feature reflecting socialist views. In addition, 77.6% of Poles believe (and thus, agree or strongly agree with the statement) that social inequalities should be eliminated. When these views are combined with the general expectation that children should help their parents in old age, we can see that Poles tend to believe that old age is a problem for the state and one's children rather than for the retired themselves.

Table 6. Opinions on helping those in need (in %)

Statement	I definitely disagree	I quite disagree	It's hard to say	I quite agree	I definitely agree
Children should provide financial help for their elderly parents	4.7	13.8	9.6	48.4	23.5
Some people are worth more than others	11.4	20.2	9.1	42.5	16.8
We should try to treat everyone equally	2.3	9.9	6.8	51.3	29.7
We should aim for the incomes of all to be relatively equal	3.6	15.4	5.7	45.1	30.2
We should support disadvantaged social groups, such as the unemployed, the poor, the disabled or the homeless, with money from taxation	6.2	17.2	10.8	48.8	17.0
Social inequalities should be eliminated	3.9	11.4	7.1	48.9	28.7
The unemployed and the poor are responsible for their own situation	10.3	31.0	11.1	34.0	13.6
Income security for old age is a crucial topic for society as a whole and we should all aim at providing it	2.0	9.9	5.9	47.8	34.4
A person's old age income should depend on their prior financial decisions	8.0	23.9	9.7	41.8	16.6

Source: own study based on the research

Conclusions

In this study, we have shown that women, less educated persons and those living in rural areas have less insurance knowledge, something that confirms our hypothesis 1. However, it is still to be determined as to whether these factors have a direct impact

on insurance knowledge or whether, for example, the poorer part of the population and those living in rural areas are more prone to developing a herd mentality.³⁶ In herd mentality mode, people behave like their friends, equally poor and uneducated, and do not strive to gain additional knowledge on topics related to broadly understood finances.

Knowledge as such is obviously needed in many areas of life. However, financial knowledge, including insurance knowledge, is particularly important given the increasing financialization of everyday life. Moreover, the knowledge discussed in the present study directly translates into financial market behavior.³⁷ Thus, by enhancing an increase in knowledge, mainly through education, we may enhance proper behaviors that are beneficial to both individuals and the state.

According to the survey, Poles have limited financial knowledge. They believe that the state, or their children, should help citizens in old age, and that social inequalities should be eliminated arbitrarily through redistribution, which contradicts our hypothesis 3. Therefore, they value and act according to their opinions and expectations, rather than striving to expand their knowledge about the pension system. However, as we have shown, the lack of such knowledge may be disastrous. Expecting the state to help its citizens in old age and to eliminate all social inequalities may have very negative consequences, which, for the most part, also result from limited financial knowledge. The study shows that the perception of equality in society is somewhat correlated with the level of insurance knowledge, which confirms our hypothesis 2. However, this correlation is not strong enough for us to conclude that the lack of knowledge is the only factor influencing a person's views on social equality.

Our research has also shown that insurance knowledge increases along with the level of education, which seems to be promising, given that the general level of education has increased in Poland following the political changes of 1989. However, while the completion of various stages of education does result in an increase in financial knowledge, the level of financial awareness at the end of the education process may still not be satisfactory.³⁸ As factors such as place of residence, sex, number of friends, *etc.* could hardly be controlled by the state, education remains the only reasonable means of increasing financial knowledge. Therefore, provided that the authorities care about the level of financial knowledge of their citizens (*i.e.* potential voters), the state should strive not only to provide a proper education, but also to increase the actual level of knowledge within society and to enhance the adequate behavior of individuals. Thus, changes should first include education, then concentrate on knowledge expansion, finally leading to changes in insurance (financial) behavior.

36 M.N. Nair, Dr. Balasubramanian, L. Yermal, *Factors influencing herding behavior among Indian stock investors*, International Conference on Data Management, Analytics and Innovation (ICDMAI), IEEE, 2017.

37 M. Downes, A.S. Thomas, *Managing overseas assignments to build organizational knowledge*, "Human Resource Planning" 1999, 22(4).

38 L.M. Bartels, *The irrational electorate*, "Wilson Quarterly" 2008, 32(4), p. 44–50.

Limitations

The research and conclusions described in this paper have some limitations. Firstly, the study was limited to Poland. However, Poland is a country which is facing the problem of an ageing society and a lowering standard of living during old age, one common to many other European countries. All need to understand the effect of these changes on citizens, the state and the pension system itself. Secondly, while analyzing the factors influencing social insurance knowledge and the people's attitudes to financial provision during retirement, we only took into consideration the factors listed in the research conducted for the purposes of the Social Insurance Institution in Poland.

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Wiedza o ubezpieczeniach społecznych: wnioski dla edukacji

W związku z rosnącym wpływem finansjalizacji na społeczeństwo większa świadomość ubezpieczeniowa, która jest integralną częścią wiedzy finansowej, staje się coraz bardziej istotna. Przeprowadzone w Polsce badanie dowodzi, że Polacy, a wśród nich zwłaszcza kobiety, osoby słabiej wykształcone oraz mieszkające na wsi, mają bardzo niski poziom wiedzy o ubezpieczeniach społecznych. W celu jej poprawy, a tym samym zwiększenia świadomości finansowej, państwo powinno nie tylko wpływać na wzrost poziomu wykształcenia, lecz także działać w kierunku poszerzenia obecnej wiedzy członków społeczeństwa, aby podejmowali bardziej świadome decyzje finansowe.

Słowa kluczowe: świadomość finansowa, płeć, system emerytalny, polityka państwa