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ANALYSIS OF THE ATTITUDES OF BOSNIA AND HERZEGOVINA RESIDENTS TOWARDS THE PENSION SYSTEM AND PRIVATE PENSION INSURANCE

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Abstract: *This study aims to analyze the opinions of Bosnia and Herzegovina (BiH) citizens regarding mandatory pension insurance and the possibility of incorporating private insurance in future reforms. The research involves evaluating the satisfaction of BiH residents with the current pension system, understanding their perception of the pension fund's risks, and identifying their attitudes towards possible pension system reforms, including the potential involvement of private insurance. The study also seeks to highlight any differences in attitudes towards socio-demographic characteristics, such as gender, employment, length of service, professional qualification, and monthly income. A survey of 812 BiH adults (representative but potentially not fully capturing the entire population) explored these aspects. While acknowledging limitations, the study reveals significant differences in attitudes based on demographics. For example, men are more optimistic about future pensions, while employed individuals are more inclined towards reform. The findings suggest general public support for pension system reform and openness to private insurance. However, the study highlights the need to consider these varying attitudes across different population groups when designing future reforms. This research provides the first quantitative data on BiH residents' views on private insurance reform, contributing to public discourse and informing future policy changes.*

Keywords: *pension system, private insurance, BiH, reform, public opinion.*

JEL classification: *H55, G23.*

INTRODUCTION

The pension system in Bosnia and Herzegovina (BiH) is based on intergenerational solidarity. In this system, active workers finance the pensions of current retirees,

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and the system is faced with growing challenges due to population aging and demographic trends (Lukyanets & Egorova, 2021). In addition to the burden characteristic of many transition countries, such as high contributions and deficits, BiH also has its own challenges, such as the high number of privileged pensions. While increasing the age limit and reducing preferential pensions could partially alleviate the problems, the long-term solution most likely lies in transitioning to a system of capitalized savings, which requires a thorough and extensive approach. In addition, Bazzana (2020); Hinrichs (2021) and Valls Martínez, et al. (2021) point out that every pension system in Europe is burdened with problems arising from contemporary demographic trends and reflected in the aging of the population. The described system is unsustainable in the long term, because it continuously produces deficits with very high pension contributions, especially compared to developed economies. The system could be partially improved by increasing the retirement age, disincentivizing early retirement and reducing privileged pensions. However, even with strong economic growth and the reduction of the pension system to exclusively earned and social pensions, the system of generational solidarity is hardly sustainable in the long term compared to capitalized savings and therefore requires radical changes.

LITERATURE REVIEW

The pension system is an essential element of the social security of every individual and society. This system is a set of legal norms, financial and institutional arrangements that regulate insurance against the risk of old age and disability (Puljiz, 2005). Its financing is one of the fundamental factors that determines every pensioner's living standard and their financial and social security (Sašić & Novaković, 2015). Since the pension system ensures the most significant social risks that can happen to everyone, the importance of its stability is of great importance for the population of a particular country (Vretenar Cobović & Cobović, 2016). In addition, this system is necessary for the balanced functioning of the entire society and the maintenance of its social cohesion, that is, the connection of individuals and groups within society as a whole. Pension insurance models are most often defined based on five criteria: 1) employee insurance vs. universal pensions, 2) public administration vs. private management, 3) mandatory participation vs. voluntary participation, 4) defined benefits vs. defined contributions and 5) current distribution vs. capitalization (Matić & Cobović Vretenar, Impact of Economic and Non-economic Factors on the Sustainability of the Pension System in Croatia, 2017)

Throughout history, insurance against the risk of old age, disability and death was realized through two basic arrangements. The first (informal) type of old-age insurance could be realized within the family, while the second (formal) type of this insurance could be realized within the framework of the organization in which the person was employed (company, professional association, etc.). Families in traditional society represented the so-called "units of production and consumption", but also mutual aid communities that took care of the elderly, sick and disabled (Puljiz, 2005).

Formal forms of pension insurance arose in recent times, and are related to the development of industrial society and new social organization. The so-called mutualistic associations formed mutual aid funds in which money from workers' membership fees, donations, etc. was kept. Authors emphasized the provision of assistance in

case of illness, injury at work, old age and death (Matić & Vretenar, 2009). Later, the first insurance pension funds were created in companies that operated successfully and achieved good business results and at the same time strived for a stable workforce for workers in case of old age, illness, disability or death. During the introduction of pensions, the employer's goal was twofold. On the one hand, they tried to improve social security and thus the productivity of workers, and on the other hand, they wanted to bind workers to the company or the civil service, exercise control over them, strengthen their loyalty and separate them from the influence of the trade union (Puljiz, 2005).

In further social organization, in the late 19th and early 20th centuries, the first public pension systems were created in Western countries, which marked the beginning of their modernization. One of these systems is the Bismarckian social security system based on the principles of several laws enacted in Germany during the reign of Chancellor Otto von Bismarck. The first law on compulsory health insurance was adopted in 1883. This Act introduced mandatory health insurance for industrial workers. The second law was passed in 1884, and it referred to the Law on Accidents at Work, under which employers were obliged to insure their employees in the event of an accident at work and to pay contributions for them to the common coffers from which compensation was paid to workers for the resulting disability, injury at work, etc. (Puljiz, 2005). The third law within the framework of Bismarck's social insurance system is the Law on Compulsory Pension and Disability Insurance adopted in 1889, which was also the first law on compulsory pension and disability insurance in the world. The development of formal forms of the pension system in our area can be seen in the pensions of soldiers and civil servants and the fraternal coffers created in the 19th century. According to Puljiz (2008), the legal regulation of this system was introduced in 1922 in Yugoslavia when the Law on Workers' Insurance was adopted, which regulated workers' pension insurance. Other forms of social insurance were systematically introduced after the Second World War and decentralization was gradually carried out of the pension system (Malinar, 2022).

Today's pension system of Bosnia and Herzegovina is based on intergenerational solidarity and is burdened with many problems, especially demographic and economic ones, and it needs certain reform. For example, Strategy for the reform of the pension system in the Federation of Bosnia and Herzegovina is a document that represents the official policy of the Government of BiH regarding the reform of the pension system (Government-FBIH, 2013). The document identifies the biggest problems and challenges of the pension system, such as the aging of the population, low employment rate, grey economy, inadequate adjustment of pensions, etc. The document also proposes some possible directions for reform, such as changing the method of calculating the pension base, gradually increasing the age limit, tightening the conditions for disability and family pensions, etc. In this regard, the future reform of the pension system implies, in part, the replacement of the system of intergenerational solidarity with a capitalized system. Pensions are the second most important source of income participating with 20.8 per cent in total average household income (2019) and the same can be observed as a replacement income (Stankov, 2021)

There is a whole range of authors who challenge one system over another and vice versa. Thus, Johnson, Conrad and Thomson (1989) point out that the goods and services consumed by retirees are part of the current production of the currently em-

ployed population, regardless of whether the retirees receive a pension from the state from collected taxes or support themselves with their own savings. In addition, Brittan (1996) points out that workers pay taxes and contributions to pay pensions and that all pensions are provided from current national income. (Blake, 1996) believes that all pension systems, regardless of whether they are capitalized or not, are in reality intergenerational systems, because in all systems, new generations work for previous generations. (Bohn, 2022) believes that in designing a pension reform, it is important how the total risks are shared between the working-age population and retirees. An optimal pension policy should implement reforms that share financial risks as equally as possible between generations (Ebbinghaus & Möhring, 2022). Barr (2002) emphasizes the importance of distinguishing risk from uncertainty in the pension system. While risk can be quantified, this is impossible with uncertainty (Samodol, 2020). Also (Barr & Rutkowski, 2005) believe that the introduction of a mandatory capitalized system implies: a sufficiently developed financial market, sufficient public and private administrative capacities and supervision, and the existence of a fiscally sustainable transition cost strategy. Jackson (2009) points out that at the macro level, a capitalized system first helps in reducing the long-term fiscal burden of an aging population and helps in maintaining an adequate level of savings and investments for the future, how pension rights are secured, and only then how they are financed (Kuné, 2006).

In countries in transition, the reforms were most often conceived with the support of the World Bank and included three pillars: Pillar I (compulsory state pension insurance, that is, a system of intergenerational solidarity); Pillar II (mandatory additional savings with private pension funds) and Pillar III (voluntary supplementary pension insurance, intended for all citizens). Also, many countries have a demographic problem that implies an increase in financial resources for future pension payments (Wang & Bohn, 2018). Each country should, according to its characteristics, shape its pension system, but the introduction of a mixed pension system is imposed as a standard, and it is also recommended by the World Bank as an imperative.

STATE AND PERSPECTIVES OF BOSNIA AND HERZEGOVINA PENSION SYSTEM

Demographic changes are often underestimated in the analysis of the age structure of the population (Holzmann & Palmer, 2006). Apart from the European Voluntary Pension Fund in the Republic of Srpska, there are no voluntary pension funds in Bosnia and Herzegovina, although their establishment is envisaged by the Pension System Reform Strategy and other legal acts that are being prepared in the entities of BiH. In addition, even a superficial analysis of market trends shows a lack of specific supply and demand for a large number of securities on domestic stock exchanges in which pension funds could invest (Radivojac & Grujić, 2016) For pension funds, the best opportunities are investing in long-term debt securities issued by entities that carry a yield of 1.5 to 6 percent (Grujić & Baškot, 2020). Papapetrou & Tsalaporta (2020) and Dumiter, Nicoară, Boiță, Loučanová and Stofkova (2023) believe that in most countries in transition at the end of the last century, the share of expenditures for pension and disability insurance in GDP increased. The existing large allocations for pension insurance (in the countries of Central and Eastern Europe range between 10 and 15% of GDP, with unfavorable demographic trends and maintaining the current

situation, could grow to 25% of GDP by 2050 (Grujić, Stanje i perspektive penzijskog osiguranja i ocjena povjerenja u penzijsko osiguranje u Bosni i Hercegovini, 2018).

The pension system of the Republic of Srpska consists of a mandatory public pension fund, the Pension Reserve Fund of the Republic of Srpska (PREF) and one voluntary pension fund. The pension system of the Federation of Bosnia and Herzegovina does not have a voluntary or reserve pension fund, but only the Fund for pension/retirement and disability insurance of the Federation of Bosnia and Herzegovina. These funds "are most often formed to partially finance public pension expenditures, i.e. to cover possible future pension deficits (Dreassi, Miani, & Paltrinieri, 2017).

The basic problem of the pension system in Bosnia and Herzegovina is that the number of employees is decreasing according to the number of pensioners. In addition to other factors that have a negative impact, this system is unsustainable in the long term. The sustainability of the public pension system is called into question due to the negative effects of numerous factors, the dominant ones being: demographic variables, macroeconomic variables, fiscal parameters and parameters of the pension system. From numerous experimental solutions, one model stood out, in which a large number of countries see a possible solution and the direction in which pension systems should be transformed (Piljan & Brzaković, 2017). It is the Chilean model, which implies the complete privatization of pension insurance, the establishment of private pension funds, for which the state is the guarantor, in order to ensure and build the confidence of citizens to invest in private funds (Živković, Piljan, & Piljan). This model should enable workers to determine their own contributions and incomes in the future. The mentioned model should significantly relieve the state budget and enable significant accumulation of capital, as well as positive effects on economic activity (Grujić, Stanje i perspektive penzijskog osiguranja i ocjena povjerenja u penzijsko osiguranje u Bosni i Hercegovini, 2018). In connection with the above, it is expected that reforms of the pension system will happen very quickly and in the direction of tightening of retirement conditions, greater fairness in pension ranges and strengthening of voluntary supplementary pension insurance.

METHODOLOGY

The research aims to evaluate the attitude of the BiH residents towards the existing mandatory pension insurance and the assessment of trust in private insurance. In this regard, the main hypothesis was set:

H_0: Residents are not satisfied with the current situation in the pension insurance system and believe that the pension fund is threatened.

Regardless of whether the research results will confirm or reject the null hypothesis, the research seeks answers to questions such as whether there are significant differences in attitudes:

(1) between female and male populations,

(2) between residents of different working years,

(3) between employed and unemployed residents,

(4) between residents according to the amount of income and

(5) between residents according to the number of years.

Accordingly, the following auxiliary hypotheses were formulated:

H_1: There are no significant differences in the assertion of the null hypothesis between the female and male populations

H_2: There are no significant differences in the assertion of the null hypothesis between residents of different working years

H_3: There are no significant differences in the assertion of the null hypothesis between employed and unemployed residents.

H_4: There are no significant differences in the assertion of the null hypothesis between residents according to the amount of monthly income

H_5: There are no significant differences in the assertion of the null hypothesis between residents according to the number of years

The research was conducted using the method of theoretical analysis and empirical, so-called. research method. The empirical research was carried out in four phases:

- Data collection based on the survey method through an online questionnaire instrument. The survey was conducted in December 2023.
- Data editing and grouping.
- Data processing using the method of statistical analysis (descriptive statistics, ANOVA test).
- Interpretation of the obtained data.

A questionnaire was used to collect data, in the form of a Likert scale for measuring attitudes. The scale, with five levels of gradation, is given to the respondent with the task of expressing their degree of agreement or disagreement for each statement:

(1) I completely disagree/agree,
(2) mostly I do not agree/agree,
(3) I don't have a clear position,
(4) I mostly agree and
(5) I fully agree.

Characteristics of the sample

A total of 812 respondents filled out the survey, of which 403 were men (49.6%) and 409 were women (50.4%). The average age of the respondents is 38.94 years and the median is 40 years. According to work status, 758 respondents are employed and 54 are unemployed. Of the employed, 208 respondents (26.1%) have been working for less than 5 years, 202 respondents (25.0%) have been working between 5 and 10 years, and 326 respondents (40.1%) have been working for more than 10 years. According to professional training, the respondents were distributed as follows: unqualified workers (NK) make up 0.86% of the sample, qualified workers make up 2.22% of the sample, highly qualified workers make up 1.11% of the sample, employees with secondary vocational education - IV degree make up 46.18% of the sample, employees with a higher professional education make up 1.60% of the sample, employees with a university degree make up 40.15% of the sample, employees with a master's degree make up 3.57% of the sample, 2.71% of the respondents have a master's degree, and the title of Doctor of Science has 1.6 examinees. Therefore, 48.03% of the respondents have completed college. According to professional training, the sample is also relatively representative of the adult population of Bosnia and Herzegovina. The largest share of respondents has a secondary vocational education, which is in line with the fact that this is the most common level of education in Bosnia and Herzegovina.

Most of the employees have been working for more than 10 years, which indicates that they are in stable working relationships. However, the proportion of em-

ployees who have worked for less than 5 years is also significant, which can be an indicator of instability in the labour market. According to monthly income, the sample is somewhat less representative. Most respondents have a monthly income of 1,050 to 2,300 KM, which is in line with the average monthly income in Bosnia and Herzegovina. However, the share of respondents with a monthly income above 2,300 KM is somewhat lower than in the adult population of Bosnia and Herzegovina. The largest share of respondents lives in urban areas (Sarajevo, Banja Luka, Zenica, Tuzla, Doboj, Prijedor, Bihać, Zvornik, Trebinje and Bijeljina). Most of the respondents are married and have children.

Overall, the sample is relatively representative of the adult population of Bosnia and Herzegovina. However, some minor differences need to be taken into account when interpreting the research results.

RESEARCH RESULTS

The obtained results will initially be observed in such a way as to show the differences between men and women (Table 1).

Table 1. Values of arithmetic means, standard deviations, standard errors and estimates of the mathematical expectation value for the 95% confidence interval, for the total sample between the female and male populations

Question	Gender	N	Mean value	Standard Deviation	Standard error	The confidence interval (0,05)	95% confidence interval for the medial value	
1. I expect a pension in an amount that allows me to live peacefully from the pension	Female	409	2,491	1,190	0,059	0,12	1,30	3,68
	Male	403	2,692	1,368	0,068	0,13	1,32	4,06
	Total	812	2,591	1,284	0,045	0,09	1,31	3,87
2. The fund from which pensions are now paid is threatened	Female	409	3,482	1,125	0,056	0,11	2,36	4,61
	Male	403	3,591	1,302	0,065	0,13	2,29	4,89
	Total	812	3,536	1,216	0,043	0,08	2,32	4,75
3. It is necessary to reform the system of mandatory pension insurance	Female	409	4,181	1,157	0,057	0,11	3,02	5,34
	Male	403	4,112	1,124	0,056	0,11	2,99	5,24
	Total	812	4,147	1,140	0,040	0,08	3,01	5,29
4. I have confidence in private pension insurance	Female	409	3,430	0,891	0,044	0,09	2,54	4,32
	Male	403	3,886	0,934	0,047	0,09	2,95	4,82
	Total	812	3,656	0,940	0,033	0,06	2,72	4,60
5. I am satisfied with the current pension insurance system	Female	409	2,377	1,076	0,053	0,10	1,30	3,45
	Male	403	2,236	1,305	0,065	0,13	0,93	3,54
	Total	812	2,307	1,196	0,042	0,08	1,11	3,50
6. I believe that investing money in private pension insurance is a smart investment	Female	409	3,562	1,121	0,055	0,11	2,44	4,68
	Male	403	4,084	0,916	0,046	0,09	3,17	5,00
	Total	812	3,821	1,056	0,037	0,07	2,77	4,88
7. Private pension insurance is absolutely necessary	Female	409	4,039	0,862	0,043	0,08	3,18	4,90
	Male	403	3,993	0,907	0,045	0,09	3,09	4,90
	Total	812	4,016	0,884	0,031	0,06	3,13	4,90

8. I don't earn enough to afford to invest in private pension insurance	**Female**	**409**	3,934	0,967	0,048	0,09	2,97	4,90
	Male	**403**	3,725	1,127	0,056	0,11	2,60	4,85
	Total	**812**	3,830	1,053	0,037	0,07	2,78	4,88

Source: authors

The obtained results can be analyzed in such a way as to determine whether there are statistically significant differences between men and women. The obtained results will initially be observed to show the differences between men and women (Table 2).

Table 2. Examination of statistically significant differences between the genders

Question	t-value	p-value	Comment
1. I expect a pension in an amount that allows me to live peacefully from the pension	-1,954	0,051	There is a statistically significant difference in mean values between men and women at the significance level of 0.10 (p<0.10). Men have a higher mean value(2.692) than women (2.491), indicating that men are more optimistic about the amount of their future pension.
2. The fund from which pensions are now paid is threatened	1,425	0,154	There is no statistically significant difference in mean values between men and women (p>0.05).
3. It is necessary to reform the system of mandatory pension insurance	-1,466	0,143	There is no statistically significant difference in mean values between men and women (p>0.05).
4. I have confidence in private pension insurance	6,547	<0,001	There is a statistically significant difference in mean values between men and women (p<0.001). Men have a higher mean value(3.886) than women (3.430), indicating that men have more confidence in private pension insurance than women.
5. I am satisfied with the current pension insurance system	1,465	0,143	There is no statistically significant difference in mean values between men and women (p>0.05).
6. I believe that investing money in private pension insurance is a smart investment	5,546	<0,001	There is a statistically significant difference in mean values between men and women (p<0.001). Men have a higher mean value (4.084) than women (3.562), indicating that men consider investing in private pension insurance a smarter investment than women.
7. Private pension insurance is absolutely necessary	-1,254	0,21	There is no statistically significant difference in mean values between men and women (p>0.05).
8. I don't earn enough to afford to invest in private pension insurance	-2,555	0,011	There is a statistically significant difference in mean values between men and women (p<0.05). Women have a higher mean value (3.934) than men (3.725), which indicates that women are more inclined to think that they do not earn enough to invest in private pension insurance.

Source: authors

The differences between the employed and the unemployed are examined in the same way (Tables 3 and 4).

Table 3. Values of arithmetic mean values, standard deviations, standard errors and estimates of the mathematical expectation value for the 95% confidence interval, for the total sample between the employed and unemployed populations

Question	Employed	N	rithmetic mean value	Standard deviation	Standard error	The confidence interval (0,05)	The confidence interval (95%)	
1. I expect a pension in an amount that allows me to live peacefully from the pension	**Yes**	**758**	2,578	1,305	0,047	0,09	1,27	3,88
	No	**54**	2,778	0,945	0,129	0,25	1,83	3,72
	Total	**812**	2,591	1,284	0,045	0,09	1,31	3,87
2. The fund from which pensions are now paid is threatened	**Yes**	**758**	3,565	1,249	0,045	0,09	2,32	4,81
	No	**54**	3,130	0,436	0,059	0,12	2,69	3,57
	Total	**812**	3,536	1,216	0,043	0,08	2,32	4,75
3. It is necessary to reform the system of mandatory pension insurance	**Yes**	**758**	4,115	1,151	0,042	0,08	2,96	5,27
	No	**54**	4,593	0,880	0,120	0,23	3,71	5,47
	Total	**812**	4,147	1,140	0,040	0,08	3,01	5,29
4. I have confidence in private pension insurance	**Yes**	**758**	3,694	0,930	0,034	0,07	2,76	4,62
	No	**54**	3,130	0,933	0,127	0,25	2,20	4,06
	Total	**812**	3,656	0,940	0,033	0,06	2,72	4,60
5. I am satisfied with the current pension insurance system	**Yes**	**758**	2,257	1,212	0,044	0,09	1,04	3,47
	No	**54**	3,000	0,614	0,084	0,16	2,39	3,61
	Total	**812**	2,307	1,196	0,042	0,08	1,11	3,50
6. I believe that investing money in private pension insurance is a smart investment	**Yes**	**758**	3,861	1,064	0,039	0,08	2,80	4,93
	No	**54**	3,259	0,757	0,103	0,20	2,50	4,02
	Total	**812**	3,821	1,056	0,037	0,07	2,77	4,88
7. Private pension insurance is absolutely necessary	**Yes**	**758**	4,020	0,903	0,033	0,06	3,12	4,92
	No	**54**	3,963	0,582	0,079	0,16	3,38	4,54
	Total	**812**	4,016	0,884	0,031	0,06	3,13	4,90
8. I don't earn enough to afford to invest in private pension insurance	**Yes**	**758**	3,813	1,064	0,039	0,08	2,75	4,88
	No	**54**	4,074	0,866	0,118	0,23	3,21	4,94
	Total	**812**	3,830	1,053	0,037	0,07	2,78	4,88

Source: authors

Table 4. Examination of statistically significant differences between the employed and the unemployed

Question	t-value	p-value	Comment
1. I expect a pension in an amount that allows me to live peacefully from the pension.	-0,367	0,716	There is no statistically significant difference in mean values between employed and unemployed (p>0.05).
2. The fund from which pensions are now paid is threatened	4,458	<0,001	There is a statistically significant difference in mean values between employed and unemployed (p<0.001). Employees are more inclined to think that the fund from which pensions are now paid is threatened.
3.It is necessary to reform the system of mandatory pension insurance	3,279	0,001	There is a statistically significant difference in mean values between employed and unemployed (p<0.001). The employed are more inclined to think that reform of the mandatory pension insurance system is necessary than the unemployed.
4. I have confidence in private pension insurance	1,982	0,05	There is a statistically significant difference in mean values between the employed and the unemployed at a significance level of 0.10 (p<0.10). The employed are more inclined to believe that they have confidence in private pension insurance than the unemployed.
5. I am satisfied with the current pension insurance system	1,725	0,085	There is no statistically significant difference in mean values between employed and unemployed (p>0.05).
6. I believe that investing money in private pension insurance is a smart investment	2,802	0,005	There is a statistically significant difference in mean values between employed and unemployed (p<0.005). The employed are more likely than the unemployed to think that investing money in private pension insurance is a smart investment.
7. Private pension insurance is absolutely necessary	2,012	0,044	There is a statistically significant difference in mean values between the employed and the unemployed at a significance level of 0.10 (p<0.10). The employed are more inclined to think that private pension insurance is necessarily necessary than the unemployed.
8. I don't earn enough to afford to invest in private pension insurance	-2,146	0,032	There is a statistically significant difference in mean values between employed and unemployed (p<0.05). The unemployed are more inclined to think that they do not earn enough to afford investing in private pension insurance than the employed.

Source: authors

For all questions, the value is less than 0.05, which means that there is a statistically significant difference in the answers between groups of respondents with different years of service. In addition, it is possible to observe that there are significant differences between the groups depending on the acquired professional qualification (Table 5).

Table 5. Values of arithmetic mean value, standard deviations, standard errors and estimates of mathematical expectation values for the 95% confidence interval, for the total sample between populations with different levels of professional education

Question	How many years of work experience do you have?	N	Arithmetic medial value	Standard deviation	Standard error	The confidence interval 0,05)	The confidence interval (95%)	
1. I expect a pension in an amount that allows me to live peacefully from the pension	**Unqualified employee (UE)**	**7**	2,143	1,069	0,404	0,79	1,07	3,21
	Qualified employee - QE (secondary education) III degree	**18**	2,833	0,383	0,090	0,18	2,45	3,22
	Secondary education - IV degree	**375**	2,491	1,210	0,062	0,12	1,28	3,70
	Highly qualified employee - HQE	**9**	1,333	0,500	0,167	0,33	0,83	1,83
	Higher professional education - MA	**13**	2,538	0,519	0,144	0,28	2,02	3,06
	Higher professional education - BA	**326**	2,666	1,400	0,078	0,15	1,27	4,07
	Master	**29**	2,655	1,261	0,234	0,46	1,39	3,92
	Master of Science	**22**	2,636	0,953	0,203	0,40	1,68	3,59
	Doctor of Science	**13**	4,231	1,235	0,343	0,67	3,00	5,47
	Total	**812**	2,591	1,284	0,045	0,09	1,31	3,87
2. The fund from which pensions are now paid is threatened	**Unqualified employee (UE)**	**7**	3,571	0,535	0,202	0,40	3,04	4,11
	Qualified employee - QE (secondary education) III degree	**18**	3,833	0,383	0,090	0,18	3,45	4,22
	Secondary education - IV degree	**375**	3,685	1,171	0,060	0,12	2,51	4,86
	Highly qualified employee - HQE	**9**	3,667	1,323	0,441	0,86	2,34	4,99
	Higher professional education	**13**	2,462	0,519	0,144	0,28	1,94	2,98
	Higher professional education - BA	**326**	3,482	1,222	0,068	0,13	2,26	4,70
	Master	**29**	3,897	0,557	0,103	0,20	3,34	4,45
	Master of Science	**22**	2,273	1,907	0,407	0,80	0,37	4,18
	Doctor of Science	**13**	2,462	1,127	0,312	0,61	1,33	3,59
	Total	**812**	3,536	1,216	0,043	0,08	2,32	4,75

3. It is necessary to reform the system of mandatory pension insurance	**Unqualified employee (UE)**	**7**	4,143	1,069	0,404	0,79	3,07	5,21
	Qualified employee - QE (secondary education) III degree	**18**	2,333	0,767	0,181	0,35	1,57	3,10
	Secondary education - IV degree	**375**	4,261	1,050	0,054	0,11	3,21	5,31
	Highly qualified employee - HQE	**9**	4,667	0,500	0,167	0,33	4,17	5,17
	Higher professional education	**13**	3,462	0,519	0,144	0,28	2,94	3,98
	Higher professional education - BA	**326**	4,255	1,067	0,059	0,12	3,19	5,32
	Master	**29**	4,276	0,591	0,110	0,22	3,68	4,87
	Master of Science	**22**	2,273	1,907	0,407	0,80	0,37	4,18
	Doctor of Science	**13**	3,846	0,899	0,249	0,49	2,95	4,74
	Total	**812**	4,147	1,140	0,040	0,08	3,01	5,29
4. I have confidence in private pension insurance	**Unqualified employee (UE)**	**7**	3,143	1,069	0,404	0,79	2,07	4,21
	Qualified employee - QE (secondary education) III degree	**18**	4,667	0,767	0,181	0,35	3,90	5,43
	Secondary education - IV degree	**375**	3,693	0,849	0,044	0,09	2,84	4,54
	Highly qualified employee - HQE	**9**	4,333	1,000	0,333	0,65	3,33	5,33
	Higher professional education	**13**	3,538	0,519	0,144	0,28	3,02	4,06
	Higher professional education - BA	**326**	3,629	0,996	0,055	0,11	2,63	4,62
	Master	**29**	3,552	0,736	0,137	0,27	2,82	4,29
	Master of Science	**22**	2,318	0,477	0,102	0,20	1,84	2,79
	Doctor of Science	**13**	4,308	0,751	0,208	0,41	3,56	5,06
	Total	**812**	3,656	0,940	0,033	0,06	2,72	4,60

5. I am satisfied with the current pension insurance system	**Unqualified employee (UE)**	**7**	2,000	1,000	0,378	0,74	1,00	3,00
	Qualified employee - QE (secondary education) III degree	**18**	1,389	0,502	0,118	0,23	0,89	1,89
	Secondary education - IV degree	**375**	2,288	1,105	0,057	0,11	1,18	3,39
	Highly qualified employee - HQE	**9**	1,333	0,500	0,167	0,33	0,83	1,83
	Higher professional education	**13**	3,000	1,155	0,320	0,63	1,85	4,15
	Higher professional education - BA	**326**	2,322	1,295	0,072	0,14	1,03	3,62
	Master	**29**	2,207	0,819	0,152	0,30	1,39	3,03
	Master of Science	**22**	2,636	0,953	0,203	0,40	1,68	3,59
	Doctor of Science	**13**	3,538	1,808	0,501	0,98	1,73	5,35
	Total	**812**	2,307	1,196	0,042	0,08	1,11	3,50
6. I believe that investing money in private pension insurance is a smart investment	**Unqualified employee (UE)**	**7**	3,571	0,535	0,202	0,40	3,04	4,11
	Qualified employee - QE (secondary education) III degree	**18**	4,667	0,767	0,181	0,35	3,90	5,43
	Secondary education - IV degree	**375**	3,752	0,967	0,050	0,10	2,78	4,72
	Highly qualified employee - HQE	**9**	4,667	0,500	0,167	0,33	4,17	5,17
	Higher professional education	**13**	3,538	0,519	0,144	0,28	3,02	4,06
	Higher professional education - BA	**326**	3,834	1,170	0,065	0,13	2,66	5,00
	Master	**29**	4,138	0,789	0,147	0,29	3,35	4,93
	Master of Science	**22**	3,091	1,109	0,236	0,46	1,98	4,20
	Doctor of Science	**13**	4,692	0,480	0,133	0,26	4,21	5,17
	Total	**812**	3,821	1,056	0,037	0,07	2,77	4,88

7. Private pension insurance is absolutely necessary	**Unqualified employee (UE)**	**7**	3,571	0,535	0,202	0,40	3,04	4,11
	Qualified employee - QE (secondary education) III degree	**18**	2,167	0,383	0,090	0,18	1,78	2,55
	Secondary education - IV degree	**375**	4,011	0,791	0,041	0,08	3,22	4,80
	Highly qualified employee - HQE	**9**	4,000	0,866	0,289	0,57	3,13	4,87
	Higher professional education	**13**	3,692	0,855	0,237	0,46	2,84	4,55
	Higher professional education - BA	**326**	4,163	0,874	0,048	0,09	3,29	5,04
	Master	**29**	4,000	0,964	0,179	0,35	3,04	4,96
	Master of Science	**22**	3,409	0,959	0,204	0,40	2,45	4,37
	Doctor of Science	**13**	4,692	0,480	0,133	0,26	4,21	5,17
	Total	**812**	4,016	0,884	0,031	0,06	3,13	4,90
8. I don't earn enough to afford to invest in private pension insurance	**Unqualified employee (UE)**	**7**	3,714	0,756	0,286	0,56	2,96	4,47
	Qualified employee - QE (secondary education) III degree	**18**	4,000	0,907	0,214	0,42	3,09	4,91
	Secondary education - IV degree	**375**	3,976	0,906	0,047	0,09	3,07	4,88
	Highly qualified employee - HQE	**9**	3,333	1,414	0,471	0,92	1,92	4,75
	Higher professional education	**13**	3,308	1,182	0,328	0,64	2,13	4,49
	Higher professional education - BA	**326**	3,739	1,116	0,062	0,12	2,62	4,86
	Master	**29**	3,310	1,365	0,254	0,50	1,94	4,68
	Master of Science	**22**	4,000	1,024	0,218	0,43	2,98	5,02
	Doctor of Science	**13**	3,462	1,761	0,489	0,96	1,70	5,22
	Total	**812**	3,830	1,053	0,037	0,07	2,78	4,88

Source: authors

There are significant differences in the answers to some questions, but not all. For example, a total of 59.1% of the respondents answered that they expect a pension in an amount that allows them to live comfortably from the pension. However, there is a significant difference in the answers between the vocational education groups. Respondents with a higher vocational education are more likely to expect a pension in a sufficient amount than respondents with a lower vocational education. A total of 77.3% of respondents answered that they believe that the fund from which pensions are now paid is threatened. This opinion is present in all groups of vocational education, but it is somewhat more pronounced among respondents with a higher vocational education.

A total of 92.7% of respondents answered that they believe that reform of the mandatory pension insurance system is necessary. This opinion is present in all groups

of vocational education, but it is somewhat more pronounced among respondents with a higher vocational education. A total of 63.2% of respondents answered that they have confidence in private pension insurance. However, there is a significant difference in the answers between the vocational education groups. Respondents with a higher education are more likely to have confidence in private pension insurance than respondents with a lower level of education. A total of 31.5% of respondents answered that they were satisfied with the current pension insurance system. However, there is a significant difference in the answers between the vocational education groups. Respondents with a lower level of professional education are more satisfied with the current pension insurance system than respondents with a higher professional education. A total of 72.3% of the respondents answered that they believe that investing money in private pension insurance is a smart investment. However, there is a significant difference in the answers between the vocational education groups. Respondents with a higher professional education are more inclined to consider that investing money in private pension insurance is a smart investment than respondents with a lower degree of professional education. A total of 82.6% of respondents answered that they believe that private pension insurance is absolutely necessary. This opinion is present in all groups of vocational education, but it is somewhat more pronounced among respondents with a higher vocational education. A total of 39.5% of respondents answered that they do not earn enough to afford investing in private pension insurance. This opinion is present in all groups of vocational education, but it is somewhat more pronounced among respondents with a lower degree of vocational education.

DISCUSSION

There are marked similarities, but also differences in attitudes towards the pension system and private pension insurance between the research conducted in 2018 (Grujić, Stanje i perspektive penzijskog osiguranja i ocjena povjerenja u penzijsko osiguranje u Bosni i Hercegovini, 2018) and the results obtained now (Table 6). Respondents in 2023 generally express more positive attitudes towards the pension system and private insurance compared to 2018. They have higher expectations regarding the adequacy of the pension, less concern about the risk of the fund, greater trust in private insurance and greater satisfaction with the current system. In addition, it is possible to see a significant increase in the assessment of smart investment in private insurance and the necessity of private insurance in 2023. The similarities are the need for reforms and the influence of age and income and distrust in the pension insurance fund. Both surveys show that the majority of respondents believe that the reform of the pension system is necessary. The average scores in both surveys indicate a general agreement on this. Also, both studies identify the influence of age and income on attitudes towards the pension system and private insurance. Respondents with more seniority and income tend to express more scepticism towards private insurance and a greater need for reforms. Both surveys reveal that the respondents consider the pension insurance fund to be at risk to a large extent. The differences are reflected in the given average grades. Although both surveys indicate similar understandings, the average scores on individual questions differ. For example, in 2018, the score for the need for private insurance was 3.28, while in this survey it is 3.83. Significant differences exist in subgroups. While both studies observe statistically significant differences in atti-

tudes depending on age, income, and length of service, the precise amounts of p-values and differences in average scores between subgroups differ.

Table 6. The comparison of 2018 and 2023 results

Question:	Average grade in 2023.	Average grade in 2018.	The difference	Comment
I expect a pension in an amount that allows me to live peacefully from the pension	2,59	2,44	0,15	Increase - Respondents in 2023 have slightly higher expectations regarding pension adequacy.
The fund from which pensions are now paid is threatened	3,54	4,28	-0,74	Decrease - Respondents in 2023 express less concern about the threat to the pension fund.
It is necessary to reform the system of mandatory pension insurance	4,15	4,27	-0,12	Minimal difference - Respondents in both surveys generally believe that reform is necessary.
I have confidence in private pension insurance	3,66	3,08	0,58	Increase - Respondents in 2023 show greater confidence in private insurance.
I am satisfied with the current pension insurance system	3,82	3,4	0,42	Increase - Respondents in 2023 express greater satisfaction with the current system.
I believe that investing money in private pension insurance is a smart investment	4,02	3,33	0,69	Significant increase - Respondents in 2023 consider investing in private insurance significantly smarter.
Private pension insurance is absolutely necessary	3,83	3,28	0,55	Increase - Respondents in 2023 consider private insurance more necessary.

Source: authors

By analyzing the collected research results, certain circumstances were noticed that may influence the answers of the respondents. For example, older respondents often do not have "related" work experience, which results in a disproportionate number of years of experience compared to recognized experience. Furthermore, being in the war in Bosnia and Herzegovina can affect the length of service, which means that some respondents have more years of insurance than actual length of service. In addition, part of the monthly fee is paid in cash, outside the official account. Furthermore, those who are already paying for life insurance or saving expect a pension that enables them to live more comfortably. Similarly, respondents who have confidence in private pension insurance often already pay into life insurance and plan to pay into the third pillar. Finally, there are respondents who do not trust private pension insurance, but still expect to maintain the same standard of living in the third age due to disciplined savings or investments.

CONCLUSION

Research analysis indicates significant differences in attitudes towards the pension system and private insurance depending on gender and employment status, length

of service, professional qualification and income level. Understanding these differences is important for designing pension system policies and reforms that respond to the needs and preferences of different population groups. There are no statistically significant differences in attitudes towards pension adequacy, satisfaction with the current system or the necessity of reform between men and women. Also, there are no statistically significant differences in satisfaction with the current pension insurance system between the employed and the unemployed.

It is possible to indicate clear differences in attitudes according to gender, taking into account t-values and p-values. For example, men are more optimistic about the amount of their future pension compared to women ($p < 0.10$). Men have more confidence in private pension insurance and consider it a smarter investment than women ($p < 0.001$). However, women are more inclined to think that they do not earn enough to afford to invest in private pension insurance ($p < 0.05$).

It is also possible to express differences in attitudes according to the employed status. Employees are more inclined to the opinion that the fund from which pensions are paid is threatened and that a reform of the mandatory pension insurance system is necessary ($p < 0.001$). Employees have more confidence in private pension insurance, and consider it a smarter investment and more often consider it necessary ($p < 0.05$ or $p < 0.10$). The unemployed are more inclined to think that they do not earn enough to afford to invest in private pension insurance ($p < 0.05$).

The research reveals significant differences in attitudes towards the pension system and private insurance in BiH compared to 2018. Respondents in 2023 expressed higher expectations regarding pensions, less concern about the risk of the fund and greater trust in private insurance. Satisfaction with the current system and the perception of investing in private insurance as a smart investment has also increased. These findings indicate a potential increase in public support for pension system reforms that include elements of private insurance.

The results of this research contribute to the understanding of current public opinion and may have significant implications for planning future reforms of the pension system in Bosnia and Herzegovina. Support for reforms that increase the role of private insurance may be greater than previously assumed. However, there are also open questions regarding the design of reforms that would suit different demographic groups and their financial capabilities.

However, further research is needed to gain a deeper understanding of the factors influencing these differences in attitudes. In addition, further research is needed to gain a deeper understanding of the factors that influence attitudes towards the pension system and private insurance. Analyses by subgroups (age, income, length of service) and exploration of specific preferences regarding reform options can provide more detailed information for policy making. In addition, it is necessary to monitor how public attitudes change over time and in the context of future reforms.

LITERATURE

Barr, N. (2002). Mirovinske reforme: mitovi, istine i strategijski izbori. *Revija za socijalnu politiku, 9*(3), 343-364. doi:https://doi.org/10.3935/rsp.v9i3.160

Barr, N., & Rutkowski, M. (2005). *Labor markets and social policy in Central and Eastern Europe.* Washington: The World Bank. Retrieved October 30, 2023, from https://docu-

ments1.worldbank.org/curated/en/374241468034764749/pdf/343830PAPER0EU101OFFICIAL0USE0ONLY1.pdf

Bazzana, D. (2020). Ageing population and pension system sustainability: reforms and redistributive implications. *Economia Politica, 37*(3), 971-992. Retrieved December 10, 2023, from https://ideas.repec.org/a/spr/epolit/v37y2020i3d10.1007_s40888-020-00183-8.html

Blake, D. (1996). On the long term risk facing pension schemes and pension fund in Europe. *Journal of Pension Management, 1*, 225-244. doi:10.1016/S0167-6687(98)00048-1

Bohn, H. (2022). Retirement savings in an ageing society: A case for innovative government debt management. (pp. 139-181). Berlin, Heidelberg: Springer Berlin Heidelberg. Retrieved December 20, 2023, from https://link.springer.com/chapter/10.1007/978-3-662-04779-8_10

Brittan, S. (1996). *Capitalism with a human face.* Harvard University Press.

Dreassi, A., Miani, S., & Paltrinieri, A. (2017). Sovereign pension and social security reserve funds: A portfolio analysis. *Global Finance Journal, 34*(1), 45-53. doi:https://doi.org/10.1016/j.gfj.2017.03.003

Dumiter, F. C., Nicoară, Ș. A., Boiță, M., Loučanová, E., & Stofkova, K. R. (2023). Financial, Economic, and Social Sustainability Aspects of Pension Systems. *Econometrical Approaches in Central and Eastern Europe*. doi:https://doi.org/10.20944/preprints202305.0262.v1

Ebbinghaus, B., & Möhring, K. (2022). Studying the politics of pension reforms and their social consequences. In K. Nelson, R. Nieuwenhuis, & M. A. Yerkes, *Social Policy in Changing European Societies* (pp. 85-100). Edward Elgar Publishing. Retrieved 11 17, 2023, from https://ideas.repec.org/h/elg/eechap/20966_6.html

Government-FBIH. (2013). *Prijedlog Strategije reforme PIO*. Retrieved from Parliament of FBiH: https://parlamentfbih.gov.ba/dom_naroda/bos/parlament/propisi/El_materijali/Prijedlog%20Strategije%20reforme%20PIO.pdf

Grujić, M. (2018). Stanje i perspektive penzijskog osiguranja i ocjena povjerenja u penzijsko osiguranje u Bosni i Hercegovini. *Financing, 9*(4), 47-73. doi:10.7251/FIN1804047G

Grujić, M., & Baškot, B. (2020). Kreiranje i upotreba krive prinosa na Banjalučkoj berzi hartija od vrijednosti. *19*(2), 452-473. doi:10.7251/EMC2002452G

Hinrichs, K. (2021). Recent pension reforms in Europe: More challenges, new directions. An overview. *Social Policy & Administration, 55*(3), 409-422. Retrieved November 12, 2023, from https://onlinelibrary.wiley.com/doi/10.1111/spol.12712

Holzmann, R., & Palmer, E. E. (2006). *Pension reform: Issues and prospects for non-financial defined contribution (NDC) schemes.* World Bank Publications. Retrieved January 13, 2024, from https://documents.worldbank.org/en/publication/documents-reports/documentdetail/713861468120840510/pension-reform-issues-and-prospects-for-non-financial-defined-contribution-ndc-schemes

Jackson, R. (2009). Global Aging and the Future of Funded Pensions. In J. Piggott, & A. Woodland, *FIAP, International Seminar: Investments and Payouts in Funded Pension Systems.*

Johnson, P. A., Conrad, C., & Thomson, D. (1989). *Workers versus pensioners: Intergenerational justice in an ageing world.* Manchester: Manchester University Press. Retrieved January 14, 2024, from https://cepr.org/publications/books-and-reports/workers-versus-pensioners-intergenerational-justice-ageing-world

Kuné, J. B. (2006). The Basics of Pension Finance. *28th International Congress of Actuaries (ICA)*, (pp. 1-27). Retrieved January 22, 2024, from https://www.actuaries.org/Boston2008/Presentations/IPM4_Kune.pdf

Lukyanets, A. O., & Egorova, M. (2021). Population aging and its impact on the country's economy. *Social Science Quarterly, 102*(2), 722-736. doi:10.1111/ssqu.12936

Malinar, A. (2022). The role of the World Bank and the International Monetary Fund in the healthcare financing reforms in Croatia: Transfer of ideas and limited coercion. *Global Social Policy, 22*(3), 540–559. doi:10.1177/1468018122110801

Matić, B., & Cobović Vretenar, M. (2017). Impact of Economic and Non-economic Factors on the Sustainability of the Pension System in Croatia. *Ekonomski vjesnik/Econviews-Review of Contemporary Business, Entrepreneurship and Economic Issues, 30(1)., 51-65., 30*(1), 51-65. Retrieved September 4, 2023, from https://hrcak.srce.hr/ojs/index.php/ekonomski-vjesnik/article/view/4699/2933

Matić, B., & Vretenar, M. (2009). Gospodarstvo i financijske institucije Brodsko–posavske županije (od sredine 18. do sredine 20. stoljeća. *Ekonomski vjesnik: Review of Contemporary Entrepreneurship, Business, and Economic Issues, 22*(2), 284-295. Retrieved January 14, 2024, from https://hrcak.srce.hr/file/73920

Papapetrou, E., & Tsalaporta, P. (2020). The impact of population aging in rich countries: What's the future? *Journal of Policy Modeling, 42*(1), 77-95. doi:doi:.1016/j.jpolmod.2019.12.002

Piljan, T., & Brzaković, T. (2017). Obavezno i privatno penzijsko osiguranje - analiza stavova korisnika. *Ekonomija: teorija i praksa, 10*(2), 39-51. doi:10.5937/etp1702039P

Puljiz, V. (2005). *Socijalna politika.* Zagreb: Faculty of Law of the University of Zagreb.

Radivojac, G., & Grujić, M. (2016). Limitations on the stocks portfolio optimization on the Banja Luka Stock Exchange. *Acta Economica, 14*(25), 35-57. doi:https://doi.org/10.7251/ACE1625035R

Samodol, A. (2020). Mirovinske reforme kao trajno globalno pitanje i dizajniranje mirovinskog sustava–slučaj Hrvatske. *Međunarodne studije, 20*(1-2), 73-95. Retrieved February 02, 2024, from https://hrcak.srce.hr/file/359968

Sašić , B., & Novaković, V. (2015). Odnos prosječne plate u javnom i privatnom sektoru u Republici Srpskoj shodno nivoima obrazovanja. *Economy and Market Communication Review – Časopis za ekonomiju i tržišne komunikacije*, 99-117. doi:10.7251/EMC1501099S

Stankov, D. (2021). The role of income distribution in the growth-poverty nexus: evidence from cesee countries, with particular reference to the Macedonian economy. *Economy and Market Communication Review – Časopis za ekonomiju i tržišne komunikacije*, 123-140. doi:10.7251/EMC2101123S

Valls Martínez, M. D., Santos-Jaén, J. M., Amin, F. U., & Martín-Cervantes, P. A. (2021). Pensions, ageing and social security research: literature review and global trends. *Mathematics, 9*(24). doi:10.3390/math9243258

Vretenar Cobović, M., & Cobović, M. (2016). Sustainability of Pension Insurance System in Republic of Croatia. *5th International Scientific Symposium "Economy of eastern Croatia–vision and growth.* Osijek: Josip Juraj Strossmayer University of Osijek.

Wang, X., & Bohn, F. (2018). Pension reserve fund, political budget cycles and fiscal illusion. *European Journal of Political Economy, 56*, 62-73. doi:doi:10.1016/j.ejpoleco.2018.07.002

Živković, M., Piljan, I., & Piljan, T. (n.d.). Ocena stava stanovnika prema obaveznom i privatnom penzijskom osiguranju. *Trendovi u poslovanju, 1*(7), 91-100. Retrieved January 11, 2024, from https://scindeks-clanci.ceon.rs/data/pdf/2334-816X/2016/2334-816X1601091Z.pdf