

PESSIMISTIC, REALISTIC OR AWARE? – HUNGARIAN YOUTH'S PENSION EXPECTATIONS

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ABSTRACT

Pension awareness is a specific part of financial awareness focusing on material preparation for the years of retirement at an unknown time to start in the distant future. Its starting point is dual: on the one hand, a recognition of longevity risk and, on the other hand, a proper assessment and planning of future options based on the individual's current financial position. In this study, we wanted to survey the expectations of Hungarian university students about the state pension system, so we conducted online research with questionnaires. Three groups of questions were devised, (i) expectations of the state pension system, (ii) the generosity of the pension system, and (iii) retirement age. Pension-related expectations show that young people, in general, are quite pessimistic and regard the ageing society as the most worrying factor. Expectations about the generosity of pensions are also pessimistic, both in terms of replacement rate and the rate of state pension compared to pensioners' total income which is estimated lower than it would actually be under the current laws. Expectations of retirement age reflect the European trends; the youth asked typically plan to retire at 65+. We also looked into regional differences and found the youth of Budapest and the Central-Hungarian region were quite negative on every issue while there were differences in other regions. Young people in Northern Hungary have a higher than average positive view of their retirement prospects. The negative attitude can be explained by the lack of transparency of the pension system and limited access to information. Also, because the reform of the state pension system is delayed in this country, respondents have major issues about its sustainability. Our findings can be important input for decision makers to shape the attitude of pension savings and retirement preparations.

JEL codes: D14, D84, G51, G53

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1 INTRODUCTION

Funding the state pension scheme and, in connection with it, individual retirement savings are becoming more emphatic issues in the ageing European societies with increasing longevity of the 21st century. Current pension schemes must face new challenges while funding pensions from current financing in the long run becomes questionable. According to Májer–Kovács (2011), the defined benefit (DB) pension scheme applied in Hungary is particularly sensitive to the increase of expected life expectancy, since in the system pensions are not established based on the amounts paid in but on the number of years spent in employment. Therefore, longer life expectancy carries a major risk, as it results in long-term benefit payments.

Studies have shown, however, that increasing retirement age will not provide complete solution to the problems of the pension scheme funded from current financing, see, e.g., Bajkó et al. (2015). According to their demography forecast and pension model, the balance of the pension fund will become long-term negative between 2026 and 2034 (depending on the increase of real salaries and employment used to calculate in their model). The deficit may even reach 8% of the revenues.

Side by side with macro-level risks, individuals will also face relevant and urgent challenges. The reduction of the of benefits provided by the state pension system can be expected, while the time horizon spent in retirement cannot be foreseen because of increasing life expectancy. Retirement savings, financial planning and individual responsibility are becoming key to secure old age living standards. Having recognised the above, the third voluntary pillar of pension schemes has become available in all European countries for decades and has been playing an important part. However, pension saving has not become part of the population's saving habits in every country to the same extent. Recognising that the Member States of the EU have fragmented and sometimes early-stage retirement saving schemes, the European Committee published its *Green Book* in 2010 analysing the European pension systems, followed by the *White Book* in 2012, which put forward guidelines to increase the transparency and security of capital coverage and additional pillars for pensions (Harsányi, 2018). Next, a phase of transitions have begun in every country, which is still ongoing, to make retirement savings other than the state pillar easier to understand and plan. On the other hand, uncertain reforms of the state systems have started, but they have been introduced lacking professional considerations. The reforms in Hungary have also been slow and lagging behind both the natural processes and the reforms of the neighbouring countries.

Increased life expectancy, ageing societies, lower number of active earners or the inflexibility of funding a pension scheme from current financing are the major factors regarding the uncertainty of the distant future. This study discusses the issue not so much from the perspective of state involvement or that of redistribution but focusing on individuals. In the long run, the state pension scheme cannot necessarily provide individuals with a decent living or maintaining the living standards of their active years for their years in retirement. Based on the part of an OECD international survey of financial culture relating to Hungary, Potóczki (2017) has found although most Hungarians believe saving for retirement is important, they do not put aside for the purpose. In their study, Pandurics–Szalai (2017) emphasise the necessity of improving the part played by voluntary pension funds (Pillars II and III) in this country.

Pension awareness during the active years is a key prerequisite of financial stability during the years of retirement (Vaskövi, 2018). Thus, we present an empirical study in this paper, in which two research questions were raised:

- Q1: What expectations do young people have about the state pension scheme?
- Q2: How much youth are aware of the longevity risk originating from increasing life expectancy and, even more important, from longer years in retirement?

Two hypotheses have been presented related to the research questions:

- H1 students in finance BA or MA have different expectations of future pensions than their peers not studying in finance curriculum
- H2 expectations of future pensions are independent of gender/sex – as the pension scheme is unisex.

During our empirical research we try to understand how deep young people's knowledge about retirement savings is. Our research is exploratory, it is the first part of a series of studies comparing young people's expectations of their pensions in the Visegrad countries.

The paper follows the usual structure of research studies. It begins with a review of the literature analysing financial awareness both in this country and internationally with particular emphasis on pension awareness, which creates the theoretical basis for empirical research. Next, we present how data were collected and what methodology was used. Our findings are broken down by the groups of research questions and finally a summary is presented.

2 REVIEW OF LITERATURE AND THEORETICAL BASES

To define pension awareness, one must go back to the concept of financial literacy. Financial literacy consists of three basic components, according to a comprehensive OECD study (Atkinson-Messy. 2012):

- *knowledge*: individuals have basic knowledge about finances, i.e., they understand the time-value of money, the concepts of loan interest and compound interest, the correlation of risk and profit, the effects of inflation and portfolio diversification,
- *behaviour*: how will individuals decide when planning their spendings and savings, will they make a budget, or do they settle their bills on time,
- *attitude*: individuals' attitude to short and long-term financial issues (for instance, are they the spending or the saving types, do they make decisions ad hoc, or after careful planning).

The National Bank of Hungary defined financial culture in 2008 as follows: “Financial culture means a level of financial skills and abilities with the help of which individuals are able to identify basic financial information that is necessary to make conscious and prudent decisions, then after obtaining them, they can interpret them and make decisions accordingly assessing the potential future financial and other consequences of their decisions.” (MNB, 2008, p. 1.). Thus, financial culture does not only include knowledge but also the ability to apply it. Kovács et al. (2021) summed up those concepts and provided a definition of financial culture with their help.

Several levels of financial culture can be identified in both the international and Hungarian literature; they have been summarised in *Table 1*.

Table 1
Hierarchic set of concepts for financial literacy

English terminology
financial knowledge
financial behaviour
financial culture
financial literacy or financial awareness

Source: Prepared by author

The different levels represent increasingly complex concepts. Financial knowledge can be easily measured by the number of correct answers to questions related to basic finance, but financial literacy is much more complex; it does not only

include knowledge but also the ability to use it and a basically conscious attitude. The latter is even more than financial culture; it also includes the acknowledgment of individual responsibility and pro-active conscious attitude supporting individuals' long-term financial goals (Béres et al., 2016). Huston's study (2010) on financial literacy and how to measure it is an excellent summary of the international papers on the topic and also provides a definition of financial literacy including not only financial knowledge but also the ability to apply it.

Pension awareness is a specific and difficult part of financial awareness focusing on material preparation for the years of retirement of an unknown length of time, which will start in the distant future. Its starting point is dual: on the one hand, a recognition of longevity risk and, on the other hand, a proper assessment and planning of future options based on the individual's current financial position. Yakoboski et al. (2023) present the importance of longevity literacy in their recent paper emphasising that a particular area of financial literacy, pension awareness is closely connected to longevity literacy. Thus, an individual can make relevant successful long-term decisions that ensure their expected living standards for the years following retirement. It is mostly realised in the form of savings, so pension awareness is an assumption that individuals, planning their appropriate financial behaviour for long term, and assessing longevity risk, consciously recognise the necessity of savings and are able to proactively manage their finances accordingly. Lusardi-Mitchell (2010 and 2014) already expressed in 2010 that people possessing a higher level of financial culture can consider financial savings longer term, so they can make more secure plans for their years in retirement. Hauff et al. (2020) and Yakoboski et al. (2022) reiterated the same. Accordingly, pension awareness includes obtaining financial skills (such as a knowledge of the pension scheme and that of longevity literacy), efforts made for long-term material security, the relevant attitude and voluntary, regularly made pension savings.

During our survey of the literature, we focused on papers related to pension awareness and pension expectations. Several papers study pension expectations from the aspects of increasing official retirement age (Coppola-Wilke, 2014), replacement rate (de Bresser-van Soest, 2015) or the well-being of retirement years (Lusardi-Mitchell, 2011). There are examples of studies of expectations in different countries (Greenwald et al. 2017; Sekita, 2011) or on different age groups of individuals (Lusardi et al. 2014). So, the topic is multi-layered, it is connected to research into financial literacy on several points, which has significant literature both in the US and Europe. The OECD published the results of the first PISA tests in 2012, which also shed light on the situation of financial literacy among high-school students in OECD countries. In Hungary, studies on the financial literacy of the population commenced after 2012 (Béres-Huzdik, 2012; Németh et al., 2012; Huzdik et al., 2014; Zsótér et al., 2017; Kovács L.-Sütő, 2020; Kovács P.

et al., 2021), while pension awareness or pension expectations as parts of financial literacy have been less studied areas.

In most developed and emerging countries individuals play an increasing part in assessing and correctly interpreting the necessity of retirement savings, which is closely connected to financial literacy. Lusardi (2015) underlines the responsibility of youth whose financial decisions will have a long-term impact on their well-being. Savings and investments are two cornerstones of material security that can not only affect specific life stages (e.g. having children, unemployment, long-term illness, etc.) but will also impact the years in retirement. In Hungary, the mandatory state pension system seemingly takes over the task of “savings and investments” from individuals and – mistakenly – lures them to believe their pensioner years have been materially ensured. At the same time, because of the longer years of retirement and the sustainability of DB pension system in Hungary, individual pension saving has become a necessity if one does not want a drastic change in his living standards after retirement.

Rather few studies have been published about *pension expectations* in Hungary although pension savings and awareness have come into the limelight. A research by Czibik–Medgyesi in 2007 presented a survey of the Hungarian active-age population’s knowledge about the pension system and their willingness to save. 1000 Hungarian adults (aged 18 to 59) were asked how they were preparing for their years in retirement. They found that one-third of the respondents were not preparing financially at all. Their knowledge about the pension system were also scant; they did not exactly know when they would reach retirement age or how much pension contributions they had been paying. Studying the demographic distribution of people asked, they found that people of higher education and older people were more conscious than other groups when thinking about their finances. The study mainly mapped financial awareness and knowledge of the pension system; expectations were not studied during the research.

In 2009, Simonovits (2015) adapted the American model by Benitez-Silva et al. (2009) to Hungarian employees to illustrate how employees’ lack of knowledge of pension regulations affected their actual retiring age. In line with expectations, he found that lacking proper knowledge, the employees could not make optimal decisions, so they might retire too early or, by hiding part of their salaries, they would miss the option of higher pension contributions. At the same time, he emphasised the complex nature of the Hungarian pension system and its frequent modifications render its understanding and profound knowledge almost impossible, which may explain his findings.

Ágoston et al. (2016) asked 59 actuaries and practising economists how they assessed their expected old-age needs, what kind of pension saving instruments they used to ensure them or how much they knew about the topic in general. In

the research, the authors mapped highly qualified professionals' knowledge and expectations relating to pension, and found their expectations were mostly irrational while their knowledge about pension-related facts and opportunities was superficial. Although the sample asked in the questionnaire was quite small and not representative, the answers given suggest pessimism about the state pension scheme.

Aegon Insurance conducted research on retirement readiness in 2019 covering fifteen countries. The questions were rather directed to the population's pension awareness than to people's expectations. According to the findings, it is obvious Hungarians expect the social security pension system to provide the dominant part of their income when they retire (54%), and only expect to make 29% of their income from own savings or investments. The figures were 46% and 30% on average in the countries surveyed (the remaining part was expected to come from pension schemes at their workplaces). It was also found financial retirement readiness was better in countries where there was a higher rate of the population making regular savings (to carry out short, mid, or long-term plans). In that respect, Hungary ranked second lowest preceding Poland (Aegon, 2019). OECD facts (2021) are even worse regarding individual pension savings. In Hungary, 73% of pensioners' income comes from the state pension pillar, 25.9% is income from work and merely the remaining 1.1% is income from individual savings.

The study by Aegon is also supported by the findings of a survey conducted in 2019 by Insurance Europe, the international body of European insurance companies.² In it, the active-age population's retirement saving habits and pension product expectations were explored in ten European countries including Hungary. The findings were published in February 2020 described by Lambert in 2020. He emphasised 46% of those asked in Hungary had no voluntary retirement savings and, although they were interested in pension savings, 41% could not afford it.

Zsótér (2018) conducted a representative survey of 300 Hungarian youth aged 18-35 years surveying the correlation of financial awareness, income and savings. She found educational attainment had a major impact on the ability and willingness to save, as those with higher qualifications were able to postpone meeting their immediate needs to achieve material well-being later.

While the relevant literature in Hungarian is somewhat limited, literature on financial awareness and retirement expectations is considerable in the United States. Many surveys have been taken including, among others, a Retirement Confidence Survey (RCS) conducted annually since 1991 jointly by the Employee

² The findings of the 2023 survey by Insurance Europe were published as this study was submitted, so we are going to compare them with our findings in the next part of our research series.

Benefit Research Institute (EBRI) and an independent market research company Greenwald & Associates. Both active-age and pensioner respondents are asked with a questionnaire about their knowledge and attitudes about pension and their financial preparations for retirement. They found in 2017 that a significant part of active-age respondents felt insecure about their years in retirement and were stressed because of the financial preparations (Greenwald et al., 2017).

In their study, Prados-Kapteyn (2019) described most Americans were partial to and had irrational expectations about their future retirement benefits. Because of such misconceptions, they accumulate lower savings endangering their well-being in retirement.

Side by side with American literature, there is a multitude of European papers on pension awareness and pension expectations. Here is a non exhaustive list of some: in a representative study, Barrett et al. (2015) asked older active-age people in Ireland. In accordance with other studies, he found a significant part of the respondents did not have a clear picture of their expected retirement benefits. It was particularly typical of women and those with lower qualifications. Coppola-Wilke (2014) studied in Germany how an increase of official retirement age affected pension expectations. In the Netherlands, de Bresser and van Soest (2015) dealt with the correlation of financial awareness and the replacement rate.

3 DATA COLLECTION AND METHODOLOGY

We put together an online questionnaire to survey Hungarian university students' expectations about the state pension scheme as the most decisive source of their future retirement income. 320 students of Budapest Corvinus University completed the questionnaire from December 2018 to February 2019. The sample was identified to include youth who had proper financial knowledge because of their studies but had to think about the quality of their life in retirement and make the relevant decisions in an insecure environment as a result of changes foreseen in the remaining long period before they reach retirement age. We formed two groups of respondents according to our research propositions:

- i) Focus group: MA students of finance. They are supposed to have the sufficient financial awareness as well as knowledge, so they can build their pension expectations not only on sentiment but also on well-founded knowledge. As per the current regulations, they are to retire in 40-45 years' time, so their retirement can be interpreted along a rather long horizon.
- ii) Control group: students of other than finance areas. They have less comprehensive knowledge of finances while their retirement is just as distant.

The questionnaire included 14 questions in 4 thematic groups (number of questions in parenthesis):

- i) Demography questions (5).
- ii) Expectations about the state pension scheme (4.)

In this group of questions, we wanted to learn how much respondents took it for granted they would receive state pension later on, how much they trusted the current government would provide proper pensions and we also wanted to reveal the motivation behind any potential negative attitudes.

- iii) Generosity of the pension scheme (2).

We asked about the rate of state pension compared to total retirement income, and we wanted to learn about the respondents' expectations of the percentage of pension vis a vis active earnings (replacement rate).

- iv) Retirement age and target country (3).

We asked about the earliest age of retirement in general and about the actual age when respondents expected to retire. We also asked if they intended to spend their retirement years in Hungary or in another country.

Respondents could refuse to answer any question. The missing data were filtered, so in the end we had a dataset of 250 respondents to work with in our study – not representative due to the lack of resources.

The distribution of the answers to demography questions was as follows (*Table 2*):

Table 2
Respondents' demographic distribution

Sex	Male	58.0%
	Female	42.0%
Age	19 to 24 years old	85.6%
	25 to 42 years old	14.4%
Current studies	University – Faculty of Finance	35.0%
	University – Economics (not finance)	64.0%
	Other university	1.0%
Place of birth	Budapest and Pest County	40.0%
	Other counties	60.0%
Address	Budapest and Pest County	87.6%
	Other counties	12.4%

Source: calculated by author

Two hypotheses have been presented in the study and a linear factor model (with Principal Component Analysis, PCA) has been built to analyse them. Our aim was to create uncorrelated components that describe the information content in the 9 questions on pension expectations preserving the highest amount of information possible but reduce the dimension of the variables into a manageable space. Kovács, E. (2014) described the maths of PCA introduced by Grané et al. (2021) in an application similar to that of our study. PCA made with Kaiser's normalisation were run on the variables, then – to facilitate understanding – the final components were produced using Varimax rotation.

We want to underline that in our research we use the correlation among survey variables and not search for causal effects. Therefore, we intended to build a model in which dimension reduction could be performed using the mutual relations of the variables. In that way, our model has no outcome variable, as we wanted to study expectations about the pension system in their correlation.

We tested our hypotheses using the Mann–Whitney U test involving the factors of the PCA model, where we used factor scores that were the standardised coordinates of the initial observations (i.e., the mean of the factor scores is 0 for each component and the standard deviation = 1). The U test examines if the median values of independent groups are equal. In our case, neither the complete sample nor its sub-samples follow a normal distribution, that is why a non-parametric test was applied.

4 RESEARCH FINDINGS

20.5% of the population of Hungary is older than 65 according to the 2023 January data of the Central Statistical Office (KSH). A slightly higher ratio, 20.7% are provided with old-age pension. Since the average (old-age) pension per person was approximately HUF 208,170, the total old-age pension stock made up approximately 9% of the GDP.³ According to an OECD pension study (2021), the net replacement rate⁴ in 2020 was 94% for men and 87.4% for women in Hungary. The same figures in 2014 were uniformly 89.6% in the OECD database. It should be noted that the extremely high replacement rate does not necessarily reflect the actual amount of pensions of individuals, as the data of the OECD are based on model calculations rather than on actual pension payments.

3 According to KSH data, the total number of the population of Hungary was 9,599,744 in January 2023, while 1,989,600 received old-age pension.

4 Net replacement rate: first pension disbursed to pensioners / net salary before retirement.

In line with the guidelines of the European Union on a unisex pension scheme, the official retirement age had been raised to 65 years both for men and women by 2022 (except for the Women40 programme⁵). Nevertheless, the automatic adjustment mechanism (such as linking the statutory retirement age to life expectancy) is still missing from the Hungarian state pension pillar.

So, those are the facts today that are the starting point for future expectations. However, expectations are not only affected by the actual status but also by past processes, so we believe it is important to emphasise that a pension scheme is a dynamically changing environment. The OECD publishes its comprehensive analysis *Pension at a Glance* every second year, which presents the current position of the pension schemes of the Member States. A separate chapter of each analysis is about the changes of the previous years, where the reforms may vary in each country, but the following are the most typical⁶:

- increase of retirement age and / or automatic adjustment mechanism (links to expected changes in life expectancy),
- reduction of the option of early retirement
- promoting longer active periods
- application of DC/NDC type supplementary pillars side by side with (sometimes instead of) the state pillar of current financing.

To interpret the expectations related to the state pension system, processes and changes must also be considered. The following major changes took place in Hungary over the past few years (OECD, 2013, 2015, 2017, 2019, 2021):

- Pillar II was nationalised and the option to enrol was stopped in 2012,
- the retirement age for women was raised step by step from 55 to 62, that for men from 60 to 62, then from 62 to 65 between 2012 and 2017,
- in 2020, the pension and health insurance contributions were merged into a uniform social security contribution (18.5% of gross salary),
- earnings from work in addition to pension became free of taxation in 2020, (it had been taxable since 2013),
- in 2021, a 13th-month pension was reinstated (“re”, because Hungary had had it from 2002 to 2009, but it was terminated due to economic stringency following the 2008 crisis).

5 In line with effective law, women in Hungary can retire after 40 years of entitlement (and 32 years of service) without reducing their pension prospects.

6 Our questionnaire survey was conducted prior to the COVID crisis, so its impact on the pension scheme was not studied here.

Pension-related measures were not introduced relying on professional consideration in every case. The Pension and Old Age Round Table was closed in 2009 (Holtzer [ed.], 2010), which was the last time reform proposals based on impact studies were presented, since then isolated and small changes have been made only. Following the guidelines of the European Commission, the Hungarian Government prepared a Recovery and Resilience Plan (RPP) in 2023, which is a comprehensive reform programme including the review of the pension scheme too. A set of measures to ensure the sustainability of the pension system is intended to be (or already have been) taken in three phases:

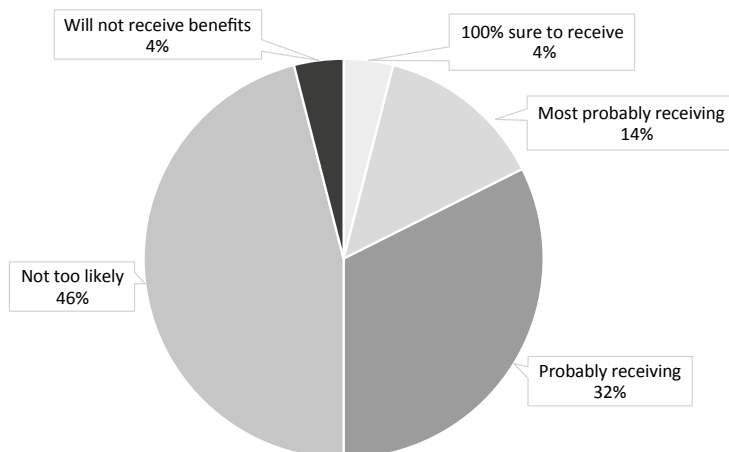
- a report by international experts will be made on the current status and the effects of potential reform measures by 31 December 2023.
- based on the report, policy proposals will be presented by 30 June 2024.
- a legislative process supported with impact studies will take place until 31 March 2025.

In that way, a new chapter may commence in the life of the Hungarian pension system following 16 reform-free years.

4.1 Expectations about the state pension scheme

In this group of questions, we wanted to learn how much respondents took it for granted they would receive state pension later on, and we also wanted to reveal the motivation behind any potential negative attitudes. In general, we have found young people's expectations are typically negative on whether they will receive state pension (at all) when they reach the required age. Half of the respondents think their chance of receiving state pension is below 50%, while a mere 18% have replied the chance is higher than 80%. The rate of the two extremes – respondents who are quite certain they will not receive state pension and those who are 100% certain they will – was a uniform 4% (*Figure 1*).

Figure 1
How likely is it that you will receive government-provided social security retirement benefits?



Source: calculated by author from own survey data

Respondents who said the chance of receiving state pension was lower than 50% were asked in a closed question about the motivation behind their reply. Responses were summed up in *Table 3*.

Table 3
Primary reasons of negative attitude to the pension scheme

What is your primary reason for your expectations?	Frequency
Society is ageing, so the pension fund will be less and less generous as the number of pensioners increases	55.5%
I do not trust the government.	13.7%
Hungary's future is uncertain.	12.1%
The government has recently changed its pension policy.	7.7%
I plan to leave Hungary, so I do not expect to be part of the Hungarian pension scheme.	6.0%
Other	5.0%

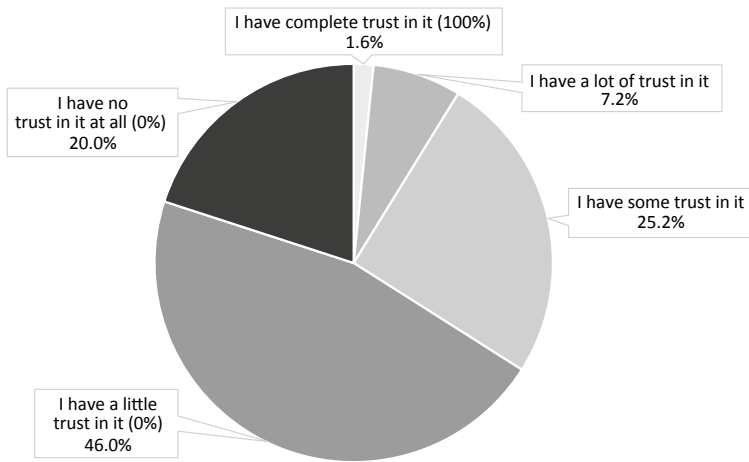
Source: calculated by author from own survey data

It is obvious that the majority of our young respondents think the ageing society is the most worrying feature shaping their negative attitude to pension expectations.

We also asked how much respondents trusted governments in general to provide state pension. A clearly negative attitude could be detected in the answers. A mere 1.6% of respondents trust the government at 100%, while 66% answered they trusted it to some extent or not at all (*Figure 2*).

Figure 2

What level of trust do you have that the government will provide future promised social security retirement benefits?



Source: calculated by author from own survey data

To identify regional differences, we also studied our respondents' regional distribution. Based on the answers, two aggregated groups were formed, those of pessimistic and optimistic expectations, where the category of pessimistic included responses lower than 50% (e.g., possibly = 40–49%, maybe = 20–29%, not likely = 1–9%), while the optimistic category comprised of those above 50% (e.g., quite certain = 100%, highly probable = 80–89%, maybe = 50–59%). *Table 4* illustrates the results by regions.

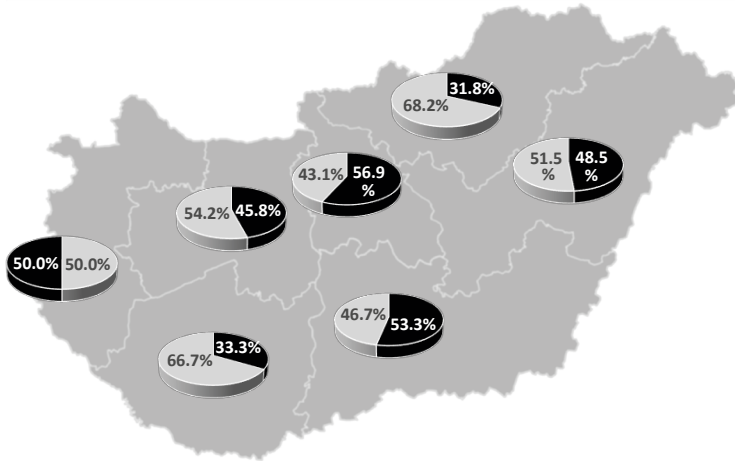
Table 4
Expectations about the state pension scheme by regions

Frequencies %	Respondents	Will be provided with state pension		Trust in government in general	
		<50%	>50%	<50%	>50%
		Pessimistic	Optimistic	Pessimistic	Optimistic
Budapest and Central Hungary Region	40.8%	57%	43%	69%	31%
Western Trans- danubian Region	16.8%	50%	50%	69%	31%
<i>Southern Trans- danubian Region</i>	4.8%	33%	67%	42%	58%
Middle Trans- danubian Region	9.6%	46%	54%	63%	38%
<i>Northern Hungary Region</i>	8.8%	32%	68%	45%	55%
Northern Great Plain Region	13.2%	48%	52%	76%	24%
Southern Great Plain Region	6.0%	53%	47%	73%	27%

Source: calculated by author from own survey data

It is clear our respondents coming from Budapest and the Central Hungary Region have given pessimistic responses in each group of questions, while the results from the other six regions were quite unexpected in certain cases. *Figure 3* presents the answers broken down by the Hungarian regions, black indicates the rate of pessimistic and light grey that of the optimistic respondents.

Figure 3
How likely is it that you will receive government-provided social security retirement benefits?*



Note: * black – probability below 50%, grey – probability above 50%.

Source: prepared by author from own survey data

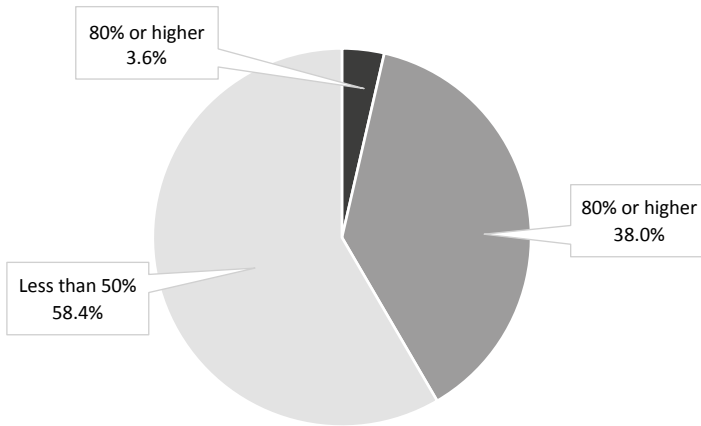
One can observe that most respondents in the Southern Transdanubian and Northern Hungary Region believe the probability of receiving a state pension is more than 50%, and in the same regions most of the responses are optimistic regarding the trust in the government to provide pensions.

4.2 Generosity of the pension scheme

In the third group of questions, the expectations about the generosity of the pension scheme were assessed. On the one hand, what the replacement rate will be, and on the other hand, what part of an individual's total retirement income will come from state pensions.

According to the current regulations affecting the Hungarian pension system, replacement rate is 80% if an individual had 40 years in employment. The rate can even rise to 100% if they worked 50 years before retiring (receiving a bonus of 2% for each year spent in work after 40 years). Still, it can be seen 58.4% of respondents said they would receive less than 50% of their net income as state pension and a mere 3.6% believed the replacement rate would be over 80% (Figure 4).

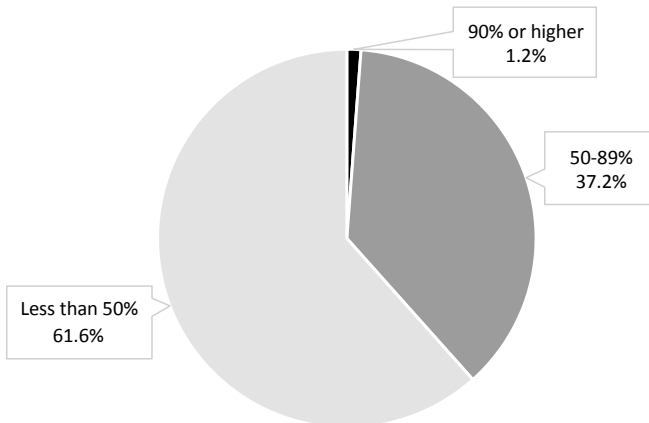
Figure 4
What do you think the salary replacement rate will be when you retire?



Source: calculated by author from own survey data

Respondents gave low estimates when answering the question of what percentage of their total retirement income would be from state pension. 61.6% said the proportion of the state pension would be below 50% and only 1.2% expect more than 90% of their retirement income received from the state system (Figure 5).

Figure 5
What percentage of your future retirement income do you expect your future social security retirement benefits to be?



Source: calculated by author from own survey data

In their study, Ágoston-Kovács (2007) had similar results with the remark that respondents in higher income bands considered an even lower replacement rate to be probable. In the international literature van Rooij et al. (2011) wrote similarly, i.e., Dutch employees expected lower replacement rates and increasing insecurity. *Table 5* illustrates the regional distribution of responses to the questions about the generosity of the pension system.

Table 5
Generosity of the pension system by regions

Frequencies %	Respondents	Replacement rate		State pension in percentage of total (retirement) income	
		<50%	>50%	<50%	>50%
		Pessimistic	Optimistic	Pessimistic	Optimistic
Budapest and Central Hungary Region	40.8%	59%	41%	70%	30%
Western Trans- danubian Region	16.8%	52%	48%	50%	50%
Southern Trans- danubian Region	4.8%	58%	42%	50%	50%
Middle Trans- danubian Region	9.6%	71%	29%	71%	29%
<i>Northern Hungary Region</i>	8.8%	50%	50%	45%	55%
Northern Great Plain Region	13.2%	52%	48%	76%	42%
Southern Great Plain Region	6.0%	80%	20%	67%	33%

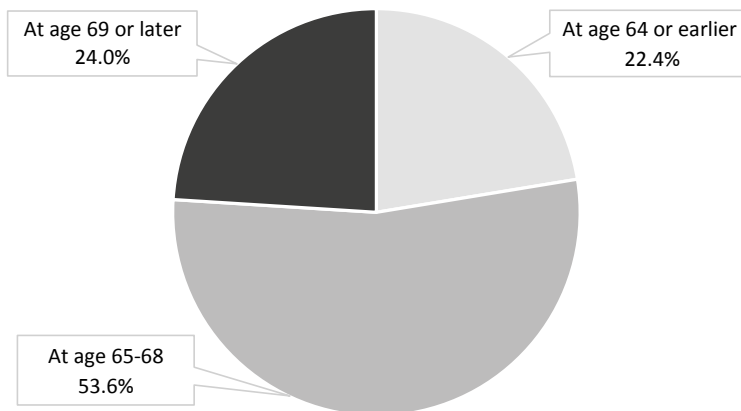
Source: calculated by author from own survey data

We have found, according to the two variables describing the generosity of the pension system, that respondents from almost all regions have a pessimistic attitude. Northern Hungary is the only exception, where 55% of them answered they would receive over 50% of their total retirement income from the state pension system.

4.3 Retirement age and target country

Two questions were asked about retirement age. The first question was about the earliest age at which the respondent could retire. Only 22% answered they could retire below the age of 65 based on their regulatory expectations (*Figure 6*).

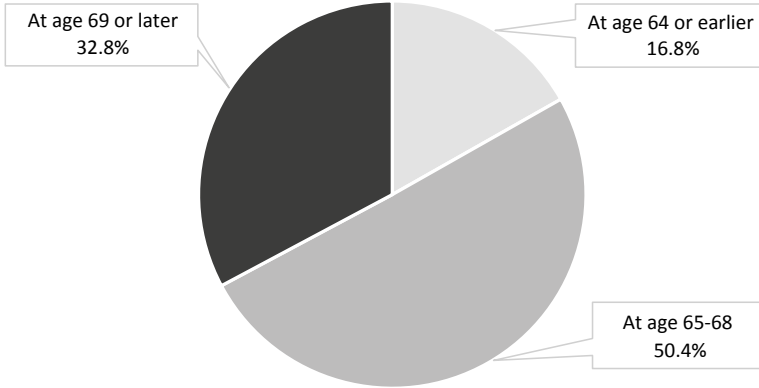
Figure 6
Earliest age of retirement



Source: calculated by author from own survey data

In the second answer respondents estimated their own age of retirement, here only 16% believed to retire before the age of 65, while 55% were planning to retire after the age of 67 (*Figure 7*).

Figure 7
Expected (own) age of retirement



Source: calculated by author from own survey data

Contrary to our respondents' expectations, the actual age of retirement in Hungary was 63.4 years for men and 60 years for women in 2019. Young people's expectations correspond to the increasing trend of the statutory retirement age.

Table 6 illustrates the distribution of the answers to the two questions relating to the age of retirement broken down by regions. In general, more people expect to retire after the age of 65, which – considering the relevant trends – can be regarded realistic rather than pessimistic.

Table 6
Expectations of retirement age by regions

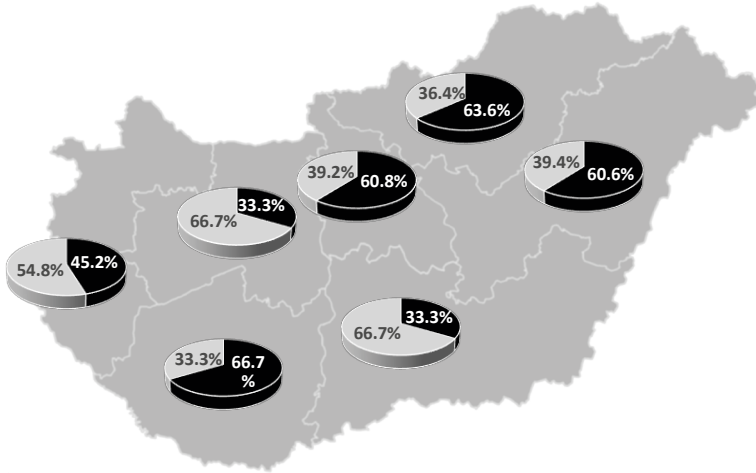
Frequencies %	Respondents	Earliest age of retirement		Expected (own) age of retirement	
		>65 years Pessimistic	<=65 years Optimistic	>65 years Pessimistic	<=65 years Optimistic
Budapest and Central Hungary Region	40.8%	48%	52%	61%	39%
Western Trans- danubian Region	16.8%	50%	50%	45%	55%
Southern Trans- danubian Region	4.8%	58%	42%	67%	33%
<i>Middle Trans- danubian Region</i>	9.6%	58%	42%	33%	67%
Northern Hungary	8.8%	55%	45%	64%	36%
Northern Great Plain Region	13.2%	55%	45%	61%	39%
<i>Southern Great Plain Region</i>	6.0%	27%	73%	33%	67%

Source: calculated by author from own survey data

There is an interesting deviation in the answers by respondents living in Budapest and in Central Hungary. While they expected the possible earliest age of retirement >65 and <=65 almost at the same rate, they estimated their own retirement age definitely later in life. The rate of respondents estimating their own age of retirement the latest is the highest in the Southern Transdanubian Region and in Northern Hungary. It might derive from family working traditions or patterns (people in white-collar jobs or agricultural activities prepare for a longer active period).

Respondents' expectation about their own age of retirement is presented on a map in *Figure 8*.

Figure 8
Expected age of retirement (own) by regions*



Note: * black – above 65 years, grey – below 65 years

Source: calculated by author from own survey data

The last question in the group inquired about respondents' expectation about the country they would live in when retired. 47% said they would live in Hungary, 42% were not sure where they would be living, while 11% felt certain they would not spend their active or retired years in this country. Germany and Austria were marked as the most frequent target countries (almost half of the respondents), about 25% marked other EU countries, and also about 25% marked English speaking countries.

4.4 Hypotheses and factor models

Two hypotheses have been set out for an in-depth analysis of the data:

- H1:* students in finance BA or MA have different expectations of future retirement than their peers not studying in finance curriculum
- H2:* expectations of future retirement are independent of gender/sex – as the pension scheme is unisex.

Our factor model (Kaiser–Meyer–Olkin measure 0.762) included 6 variables constituting two main components retaining 72.25% of the variance of the original variables. A rotated component matrix illustrates the correlation between the original variables included in the model and the resulting two main components (Table 7).

Table 7
Rotated component matrix in a 2-factor model

		Expectations about the state pension scheme	Age of retirement
Expectation	How much are you certain you will be provided with state pension?	0.838	
	Trust in government in general	0.829	
Generosity	State pension in percentage of total (retirement) income	0.902	
	Expectation about replacement rate	0.832	
Age	Earliest possible age of retirement		0.829
	Own retirement age		0.842

Source: calculated by author from own survey data

The component matrix illustrates the questions relating to pension expectations and to the generosity of the state pension system form one component (named “*Expectations*”). The other independent factor of the model became “*Age of retirement*”. Lower factor scores mean optimistic expectations while higher factor scores mean pessimistic expectations in the case of “*Expectations*”, (for instance, answers to the question “How much are you certain you will receive state pension?” 1 = 100% certain I will, 12 = 0% certain, i.e. I will not receive state pension). For the factor “*Age of retirement*”, lower factor scores mean expectation of a lower age of retirement (for instance, answers to the question “When will you retire?”: 1 = at the age of 62 or earlier, 5 = at the age of 69 or older).

Our two hypotheses were analysed using the two factors. Since certain sub-samples of our sample (finance student / non-finance student, men / women) are not always normally distributed, we used the non-parametric Mann–Whitney U test to test if group distributions were congruent, and to assess the deviation of their median values. We used box-plots to visualise the differences of the groups analysed, where the internal line of the boxes designates the median values of factor scores for each group. Since the mean of the factor scores is zero⁷, negative median values mean the expectations of a given group are worse (more pessimistic) than the average.

⁷ Factor scores were the standardised coordinates of the initial observations, i.e., the mean of the scores is 0 for each main component with a standard deviation = 1.

As for hypothesis H_1 , no statistically significant differences were found between finance and non-finance students regarding the factors of expectations or the age of retirement (Table 8).

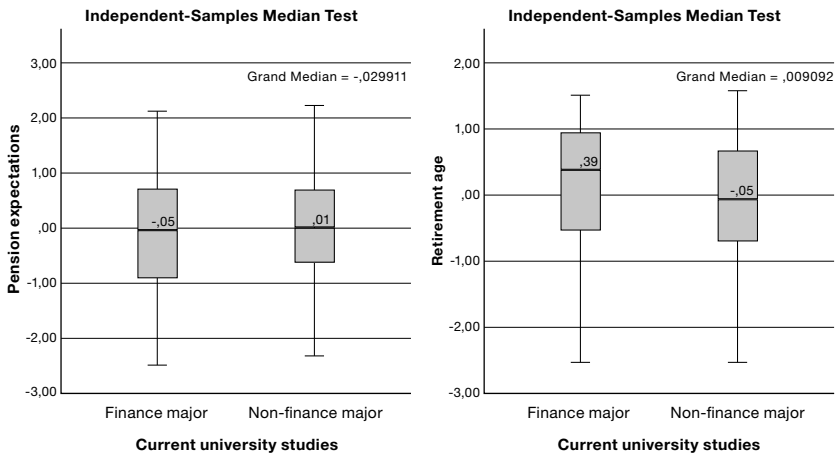
Table 8
Difference between finance and non-finance students' expectations
(statistics of median tests)

	Expectations	Age of retirement
finance / non-finance	Chi ² = 0.159 p = 0.691	Chi ² = 1.429 p = 0.232
Null-hypothesis	medians are equal	
	H0: ✓	H0: ✓

Source: calculated by author from own survey data

Although according to the boxplot on the right of Figure 9 finance students expect higher age of retirement (median value of factor score is 0.39) than their non-finance peers (median value of factor score is -0.05), the tests did not show the difference as statistically significant.

Figure 9
Difference by studies regarding the two factors



Source: prepared by author from own survey data

Testing hypothesis H_2 , no statistically acceptable difference was found between men and women as regards expectations, while the opinion of men and women were significantly different regarding the age of retirement (Table 9).

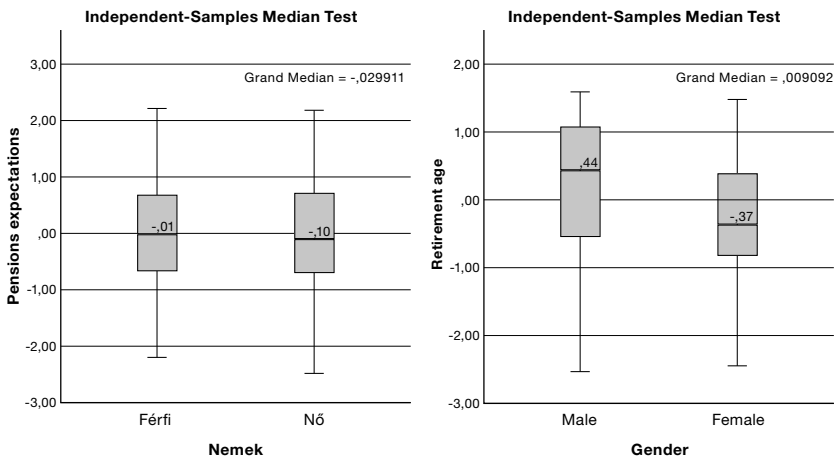
Table 9
Difference of expectations by sex (statistics of median test)

	Expectations	Age of retirement
men / women	Chi ² = 0.150 p = 0.699	Chi ² = 8.810 p = 0.003
Null-hypothesis	medians are equal	
	H0: ✓	H0: X

Source: calculated by author from own survey data

According to Figure 10, the factor “Age of retirement” is significantly different for male and female respondents at all usual levels of significance. Despite the unisex pension scheme, men’s expectations of retiring at a later age may be because they are aware of the Women40 allowance, but it also might be a “heritance” which has remained from the earlier differentiated pension scheme.

Figure 10
Difference by gender regarding the two factors



Source: prepared by author from own survey data

5 CONCLUSION AND LIMITATIONS

In this study, we present the findings of a survey research conducted among Hungarian university students about their retirement/pension expectations. We have found most of our respondents' expectations are pessimistic – or realistic in some cases – with respect to the state pension scheme. The negative attitude can be explained by the lack of transparency of the pension system and limited access to information. Also, because the reform of the state pension system has been delayed in Hungary, respondents have major issues about its sustainability. Our findings can provide important input for decision makers to shape the attitude of pension savings. Kovács E. (2018) writes in her study that insurance and pension professionals believe speaking to the Y and younger generation will offer a chance of popularising the idea of retirement saving, since there is a quite long period of savings before them, and they are already rather wary of the state pension scheme. That generation markedly underestimate the expected replacement rate while overestimate their expected age of retirement compared to actual facts. In this paper we analysed the respondents' regional differences in-depth. We have found respondents coming from Budapest and Central Hungary have the gloomiest view about the situation of the state pension system. Their attitude is pessimistic (or realistic if looking at it from another aspect). The picture is rather mixed regarding the other regions, as respondents from the Southern Transdanubian and Northern Hungary regions have given more optimistic answers to many questions than the average.

Our findings and the lessons we have drawn from them are valid with some limitations. The survey has not been representative, as because of the lack of material sources, we could only conduct a concentrated query with a group of youth that were the easiest to reach, that is why we chose the students of our *Alma Mater*, Corvinus University. The questionnaires were completed at the end of 2018 and beginning of 2019, i.e., prior to the COVID-19 pandemic and the high inflation environment in 2022–2023. Macroeconomic events since then may have had an opinion forming effect, another research should be conducted to survey it.

On the other hand, our findings call attention to the issues of pension awareness. Looking forward 40 to 45 years, the assessment of the state pension scheme is quite adverse, which may result in material insecurity later on. Therefore, the part played by decision makers is very important to improve the population's financial and pension awareness. The National Strategy on Financial Literacy Improvement laid out in 2017 is a favourable sign because it strives to increase the level of financial literacy to an acceptable level. Its implementation into practice has not brought about much result yet, however, it is an important starting point to develop financial – including pension – literacy.

Our study is the first part of a planned series of comparative analyses of the Visegrad countries. In spring 2021 youth in the Czech Republic, Slovakia and Poland also completed the questionnaire. By analysing those data, we hope to be able to provide a wider picture of the pension expectations of 18-35-year-old youth in the region.

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