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DECISIVE FACTORS OF LONG-TERM INVESTMENT FOR PERSONAL SAVINGS GROWTH FOR RESIDENTS OF BALTICS

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ABSTRACT

With changes in the demography of the modern population, the creation of a high quality of being at all stages of a person's life is a priori. However, the most vulnerable segment of the population exposed to the influence of the world changeability are people close to or already on retirement. Usually it manifests the inability to achieve the desired standard of living due to financial possibilities provided by the state in the form of pension payments. The current bachelor's thesis discusses long-term accumulation methods of personal funds in addition to clarifying predominant factors among Baltics residents influencing voluntary investment decisions. Such determinants affecting personal investment decisions as age, employment status, income, life experience, investment knowledge or first-hand experience are selected according to previous studies and applied to analyse the case of Baltic States. Determining the factors of saving decision making is important in understanding, since on the one hand, it will allow an individual to more accurately define own opportunities and needs for the future in financial terms. On the other hand, having a better understanding of the population’s needs allows policymakers to create more suitable regulations and more efficiently cover specific issues such as financial adjustments to voluntarily save more. The questionnaire was created, and responses were collected from residents of Baltics. Results indicate that the decision to create a personal accumulation fund and start investing in a long run is positively correlated with age, income, financial education, knowledge of long-term investments and life experience in saving. Overall, among the population of the Baltic States there is a positive trend towards the creation of personal long-run investing plans.

Keywords: Voluntary/private saving, long-term investing, pension system, three pillar system, interest compounding, financial instruments.

INTRODUCTION

With an increase in life expectancy and its quality, as well as world economic development, it becomes especially crucial to realize how financially secured a person in terms of purchases, emergency funds or wealth building. There is a growth in demand to accumulate finance on their own in the long term among residents of Baltics, and some of the major causes for money savings are confidence in the future, whether it's a future plan, an unexpected need, or a comfortable retirement (BNN 2016). There is a tendency on the part of the state towards an introduction of newer reforms for the development and improvement of accumulation systems, for instance in the form of a third voluntary pillar of the pension system, in order to make people feel comfortable and secured when they become older. Even so, the fact is still revealed that this is not always enough for full and self-sufficient financial wellbeing offered by the government for a self-sufficient life in the period of close to or already on retirement (Lumen 2020). In order to find the solution and achieve a higher level of financial welfare and independence at the life period over 50s, different methods and strategies of private investing on a long-term basis can be used. However, some pitfalls and potential issues should be considered to have a more appropriate overview of the current topic.

Numerous factors hinder and influence creation of stable long-term financial accumulations. These components include social and economic elements such as age, education or financial position, educational level, income level, and psychological factors including beliefs, motives and attitudes towards personal future and savings. In particular, the purpose of this study is to identify the most foundational components for creating long-term saving plans for people in the period to be categorized as young-age adulthood or persons of the age 19 to 40 (Cortland 2020) in all Baltic countries. Age period as a psychological parameter established by Erik H. Erikson (Cortland 2020) was taken as an independent variable due to the reason that such activities require not only strong

financial independence and responsibility in decision-making but also the time during which the growth of individual capital will take place.

The primary focus of the thesis is to determine the relationship between investment decisions and behavior affecting private savings in the long-run, so the form of voluntary accumulation was chosen as a dependent variable. Research method of the study is regression analysis and models to highlight the most considerable relations in determinants. Theory-based questionnaire was carried out in order to collect relevant data for obtaining actual results and suggestions, and its content is reviewed in section 2.1 “Data collection description”.

The goal of the research is to expound how different decision-making elements and saving factors affect the use of long-term investing in private savings for residents of Baltic countries. The first hypothesis reveals the attitude of society to the third pillar scheme of volunteer financial accumulations promoted by the states. The second hypothesis is created to discover and clarify the current attitude towards formation of individual financial saving plans among residents of Baltics. Third hypothesis describes an overall situation with the long-term accumulation strategies in private investing while the last hypothesis shows the matter of long-term savings growth among the Baltics residents and effect of social and economic characteristics on this tendency.

H1. Less than half of the sample has joined the third pillar of the pension system.
H2. More than half of the respondents think about creating or already have their own savings for the future.
H3. Less than half of the respondents are familiar with the long-term accumulation methods of personal funds and ready to expect results from them.
H4. Readiness to long-term investments with compounding growth highly depends on age, employment status, income, life experience, and investment knowledge or first-hand experience.

The research is structured in the next way: the first chapter describes the current situation in the sphere of money accumulation and savings behavior in Baltics and reviews the structure of the pension system for that region. Then, the theory of long-term investing in personal funds, its methodology and financial tools are characterised. Organization of retirement funds and ways of functioning for Estonia, Latvia and Lithuania are represented afterwards as well as applicable

theories on private savings accumulation are introduced. The following is the review of previous studies on determinants related to the work for private saving and investing along with the setting of research problems and hypotheses development at the end of the chapter. The second chapter is devoted to the description of the applied methodology to the study and data collection from the questionnaire in addition to the questionnaire itself to be presented in Appendices. This is followed by descriptive statistics and a regression model that provide a view of the results as well as parameter settings are introduced. Finally, the third chapter summarizes the outcomes of the study with their discussion and implication as well as recap key findings and acknowledge limitations in the conclusion.

1. THEORETICAL FRAMEWORK

1.1. The case of savings in Baltics

The research carried out by Luminor (Luminor 2020) drew a conclusion that roughly three-quarters of the Baltics residents feel under the risk of going to their retirement in terms of financial stability and confidence of living on assets gained during the working period of life, and only the fraction of the population feels that they saved and achieved a convenient extent of money for retirement. In addition, another study held by OECD (Organisation for Economic Co-operation and Development) lead to consideration that the tendency of an increase in the share of pensioners on the total population has a negative effect on the efficiency of states pension systems (Kulu et al. 2020). Altogether, all these factors result in an importance of personal savings and their growth for the period of working life to achieve a better financial situation at retirement, and it makes the research to be highly substantial among the Baltic states.

The tendency of population aging has an essential effect on pension expenditure from the all three governments of Baltics in long-term perspective, while there is an increase in the employment among older people and those close to retirement (Zelionkaitė, Tuzikas 2018). This sort of forecasting can lead to the decrease in the ratio of old-age pension costs to GDP in several decades which will affect demonstrative loss in the pension system and insufficient average old-age pension in comparison to average wages (Zelionkaitė, Tuzikas 2018).

With the collapse of the Soviet Union in the early 90s, it was decided to make operational and fundamental modifications in the systems of pension funds in the Baltic states. As a result, in the end of the 90's governments have initiated and applied systemic reforms for financial structures and patterns in order to redesign the national pension systems and introduce three pillar pension funds (Fultz 2006). These pension systems include the following levels described below.

The 1st pillar or state compulsory pension is one which guarantees a retirement income that covers minimum living costs of the resident to go to retirement in the future (Manapensija 2020). This pillar grows based on the person contributing to social insurance. Paid-up contributions are used to compensate old-age pensions for pensioners of current generation as well as information regarding contribution level is recorded on the personal account of each participant. Pension capital is renewed and updated before calculating the pension amount to be paid in accordance with current government regulations and norms.

The 2nd pillar or mandatory funded pension gives an opportunity for one to create additional savings to the old-age state pension (1st pillar). It goes as a mandatory fund for all the middle-age residents of Baltics (the age of birth from which participation in the 2nd pillar becomes obligatory is different for residents of different Baltic countries) and its amount directly affected by the size of official income of the pension fund's participant leading to the level of contribution of one's pension account and the size of all-age pension in future retirement (Rajevska 2013).

The 3rd pillar, referred to as private voluntary funded pension, functions in the form of the voluntary contribution with periodic constant investing to one of pension private funds. With the stable periodic input on monthly basis investment risks spread over the portfolio so there's a low chance of loss in its overall value which affects a better risk/return rate to be obtained in long-term perspective and appropriate gains during the period of withdrawal of savings from the volunteer pension fund (INVL 2020).

Despite the fact that reforms for three pillar pension funds in all three Baltic countries were adopted in different years (e.g. the mandatory funded pension was introduced in Latvia in 2001, then implemented by Estonia 2002, and followed by Lithuania in 2004) all pillars at this point have a common purpose and differed only in such indicators as at what age it is possible to withdraw pension savings from the pension fund, pension tax or contribution rate of social insurance to be taken from the gross earnings to the pension insurance, etc. Nevertheless, the Baltic states muse on the case that pensioners may face the problem of financial instability and act in the way to give people the opportunity to think earlier about the timely accumulation of fund by adopting different methods of compulsory and voluntary savings (2nd and 3rd pillar). At the same time, despite the

fact that the majority of the Baltic population has the opportunity to set aside money for their accumulation in the future, only less than one third of residents create savings funds due to mainly an obvious skepticism about the creation of long-term savings (CEIC 2020).

The next part raises the topic of state pension systems as a primary method for creating accumulation funds as well as remarks the most basic psychological and socio-economic saving factors and the associated challenges.

1.2. General review of pension system and retirement saving behavior

Presently, most governments face an aftermath of a constant demographic aging of the Baltics population. This sort of alteration reduces the tax base of states due to the retirement of the larger scale of older generation of workers, and the costs of government pensions and health care rise substantially. No financially stable state is able to fully cover the growing needs of the aging population in such conditions, therefore it is essential on the part of political decisions to comprehend the relation between investing into human capital, retirement choices and savings (Jacobs 2009). In addition, with the growth and increase in the number of pensioners in the ratio to the share of working population, the question of the pension rate and the distribution of pension risks to the share of people of working and retirement age become more demanding, costly and difficult to execute in terms of contribution adjustments (Jacobs 2009). With the consideration of ongoing events, states are concerned about the redevelopment of structural and organizational systems in order to evolve the possibility of lifting retirement age, investment in skills, as well as the revision of pension savings. One of the actions taken is the adoption of a strategy for the sustainable and constant development of the economies of the EU countries called the Lisbon Process from 2000 to 2010 and the subsequent Europe 2020 plan, which identified the importance for increasing the employment rate of the population and stimulating growth of the work among older employees and later retirement (Eurostat 2020). Furthermore, governments encourage voluntary retirement savings, for example through supplementary funded pension schemes, also well-known as voluntary private third pillar, to reduce the vulnerability of retirees to state pension plans and mandatory funded pension schemes.

While states are interested in improving the efficiency and qualifications of their citizens of pre-retirement and retirement age and providing them with stable jobs, it is necessary to keep in mind the psychological aspect of individuals in terms of pension. By way of explanation, people by their nature don't invest in the development of skills as they look forward to earlier retirement, and vice versa, people retire early as they didn't improve skills in the past (Jacobs 2009).

Nowadays, governments' funded programs lose their acceptance from the residents, so individuals are offered with the opportunities to take care by themselves on savings while investing into obligatory and optional types of accumulation funds (Yusof, Sabri 2017). Great attention should be paid to the retirement savings behavior of individuals involving planning, promoting, investing, and savings accumulation and its growth. In addition, socio-demographics factors, e.g. gender, age and education, and other indicators such as the level of earnings, attitude towards retirement, and social influences are important in defining retirement savings behavior (Shariff, Isah 2019). One of the elements in the formation of a person's attitude to the creation of a saving habit is the level of income since with the higher salary there's more possibility and motivation to take more money from earnings to savings funds. In addition, financial literature cognition of individuals and education is also a differentiating factor in investing decision making in the way of increasing accumulations with the efficiency in use of financial instruments and introducing additional tools of saving (Bayar et al. 2017).

Regardless of the active policy of retirement savings pursued by the state or how well people are familiar with the financial systems, mental connectedness plays an important role in creating the determinant of a person's psychological association with his or her future self (Hershfield et al. 2011). In other words, this psychological connection means an association of oneself or its absence at the present age with oneself after several decades.

1.3. Theory and methodology of long-term investment in the growth of savings

There's no clear and generally accepted definition of long-term investing so it can be only characterised with different indicators. There were two suggested as the most significant in definitive guide to investing decisions, namely, level of investment liability over trading and

assumptions in decision-making processes (Warren 2014). The first element in its rethinking implies the capacity of one to hold an investment for a short- or long-term period. In case of investors with shorter ownership horizons, the nature of their investments cannot allow them to miss the moment to trade their assets in one or another situation when there can be no other suitable context. In contrast, conscientious long-term investors should not be in a situation where there is a need to trade due to some reason, and therefore they will have more leeway to maximize the value of their holdings over time. The second element of assumption emphasizes the importance of information used in planning investment activities. Short-term investors model their strategies with an emphasis on information which predicts short-term assets performance and their outcomes, whereas long-term investors formulate their investment schemes with the attention on data that applies to prolonged results.

An example in Table 1 describes the general types of investors - Investor A, Investor B, Investor C, Investor D. Investor A represents the person whose only concern is investment's price changes and its return in the short-run horizon of the next period - it can be the next hour, day, week, etc. At the same time, in case of Investor D this is the one who processes in long-term perspective, only purchases and doesn't sell as he or she is mostly concerned about cash generation of the assets purchased and its following reuse. The future prices of the holdings are not that important to investor D since they are generally held so as not to sell. Other two types named as Investor B and Investor C both use to keep holding on hands with the horizon longer than one period. However, Investor B is the one who buys and holds assets with the concern of their return in some period in terms of end price, cash generation over holding period and subsequent assets' liquidation with output's reinvesting. Investor C is someone who prefers to trade with different option strategies with an expected return on assets over several periods in order to maximize the return on assets as well as accumulate total capital and reinvest in the holdings.

Table 1. Four types of investor approaches to capital accumulation

	Investor A	Investor B	Investor C	Investor D
Investment horizon	Next period / short-term	Some specific termination / medium-to-long	Some specific termination / medium-to-long	Termless period / Long-term
Investing strategy	Next period's outcome increase	Cash generation from asset, its liquidation and reinvestment	Long-term cash accumulation over the way of trading	Asset purchase and hold, no selling
Attention to	Asset's price and its change in near future	Asset's end price, cash accumulation, and reinvestment	Cash accumulation, and reinvestment and option strategies	Cash generation and its reinvestment

Source: author's summation based on discussion above

Another aspect is the identification of more efficient and reasoned assets of the financial market in long-term holdings. In this context, it means an identification of types of assets in the form of their difference in risk-return ratio in the long-run period. Thus, it is possible to choose among a wide variety of investment instruments available on the market - stocks, bonds, real estate, precious metals.

Accordingly, two types of assets can be named as the most available to the mass investor - stock and bond. Share is a stake in a public company, one's own piece of Apple or Google. Good companies tend to grow, and with them stocks rise in value. Also, stocks are not afraid of inflation, so while the currency depreciates, the price of goods or services sold by the company also grows. This means that the revenue is also increasing, and thus the shares grow in general and after the rise in revenue, which on average brings about 9% of the annual return on capital (Scheid 2020). Nevertheless, there are some pitfalls. For example, the world market may sink because of an unexpected crisis affected by the global pandemic or some specific company may mess up or become bankrupt so personal investments may burn out. Even though the market always recovers, it still can take years to get back to profitable levels. Another investment instrument is bonds that can be interpreted as the pieces of state or corporation debt to which the one lends money and gets

paid interest also known as coupon payments. In contrast to level of dividends which depends on the situation in the company bonds' coupon payments are predetermined as well as the original amount is returned at the end of the term. The more reliable and financially secured the state or company, the lower the income from interest, and vice versa. For instance, coupon payments on American government bonds are 2-3% in sustainable years and less than 1% in crisis ones (CNBC 2020). There are also junk bonds (or high-yield debts) which can be issued by a small company that wants to get a loan and can offer bonds with a yield of up to 8-15% or a government facing a crisis such as Greece where government bonds' yield was reaching 40% in economically unstable times (Allen 2019). These large payments carry the risk that the company will not return the money to the investor. To summarize, no one will make much money on bonds, but they are stable and still give a few cents. In addition, a portfolio of stocks and bonds works like a scale - if stocks fall, bonds rise in price and payouts fall. Conversely, as stocks go up, bonds become cheaper and payments on them increase to attract investors. This is not always the case, but usually the balance is.

Another popular asset for investment is the real estate. However, here are the following considerations about this sort of personal investing. With the purchase of real estate money is tightly tied, and with that comes the problem that it cannot be sold quickly. Unlike stocks which are sold in 5 minutes in more-less any quantity real estate can be sold for months. In addition, this is not an investment into someone else's business - one is getting into his/her own. This appears more tangible and real risks, such as fire or flooding due to sewer faults. even though it can be insured, repairs/troubleshooting and subsequent resale may take enough time. Nevertheless, there is a special instrument that exists on the world market – shares of REITs (real estate investment trusts). By law, they are obliged to send 90% of their profits to dividends which results in their dividends being the highest among stocks - about the same 5% per annum (EPRA 2020). In a crisis, REITs are the first to sink. For example, in 2020, real estate for restaurants and offices suffered most and thus REITs were in the red.

It is believed that precious metals, especially gold, are a way to preserve capital during a collapse, that is, when the last days come the stock exchange will collapse and the United States will go bankrupt, and only ingots will remain (Wikipedia 2020). However, considering the current situation on the world economic market, investment in gold can hardly be considered a profitable

and attractive as precious metals possess low profitability, increased spread and large intervals of losses and profits (BullionVault 2020). The portfolio can be diversified with precious metals without focusing primarily on them as well as the one should understand and be prepared for the fact that the investment will be long-term.

There is no need to try to beat the market by buying individual stocks or entering the bottom and exiting at the peak of asset prices (in case of trading) - this is either impossible or only a few can do it. The most appropriate way out is to use index funds, or their modified version represented by an ETF which is a collection of securities or other underlying assets traded on an exchange like stocks. It also can be described as a transparent "packaging" in which the one can buy shares or raw materials (for example, precious metals, etc.) of a region or sector.

The general investor makes a profit with the growth of the asset in price - progress is taking place, shares are becoming more and more expensive. Also, the benefit comes from the reinvestment of income - dividends on shares and REITs, payments on bonds, profit from resale of real estate and precious metals. The longer the stock grows, and dividends are reinvested, the better the compound interest works for the holder and more the one eventually earns. Compounding interest represents the method of adding the interest to the initial principal amount which also considers the interests gained from previous periods on investment (Investopedia 2020). Under such conditions, interest on the new contribution will be calculated not only by the primary amount, but also on the interest that was received from the previous periods. To apply it, one should re-invest the income from securities - for example, dividends on stocks or interest on bonds.

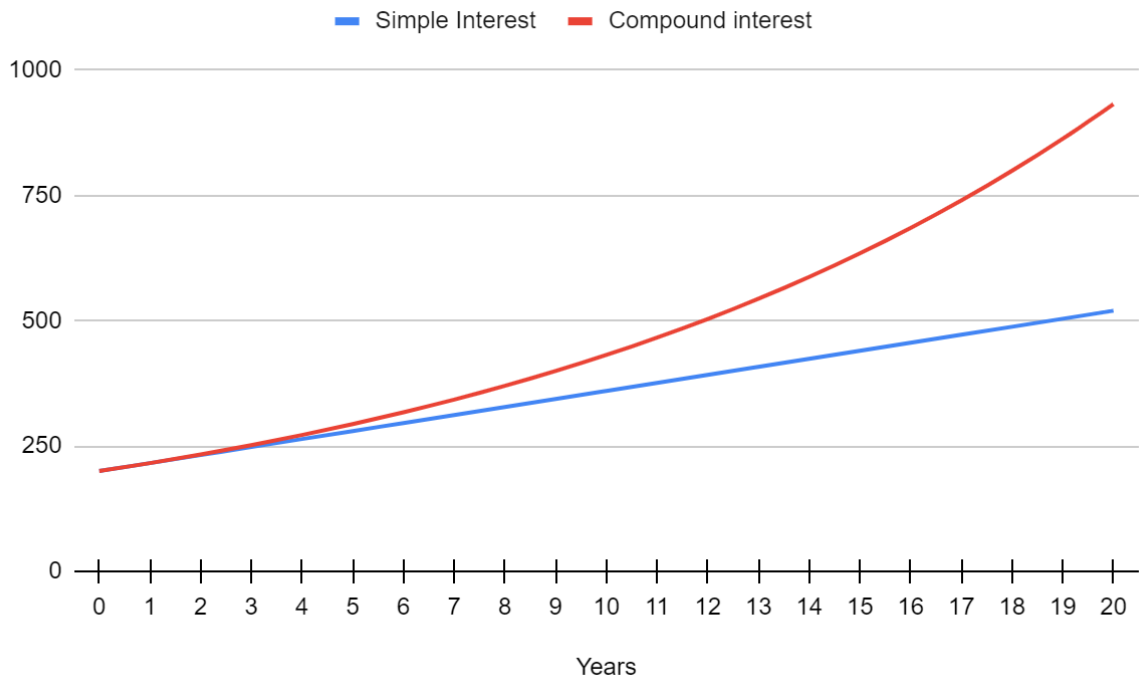
Let's consider a real-life example and compare the effect of using simple and compound interests in the case of an investment of € 200 in a share with a stable annual return of 8% for a period of 20 years. In the case of simple interest, the return is stable at 8%, as a result of which the capital will be increased by 2.6 times in 20 years or € 520 as a total.

At the same time, in the case of interest compounding, having received the first dividends, they will be spent on the purchase of the same shares. Thus, the next 8% of the annual return in the second period will be received € 216 already, that is, the principal amount of € 200 plus interest of 8% in the first period. Through simple calculations, it can be found that the total capital will

increase 4.6 times over a period of 20 years, or from € 200 at the beginning of the first year to € 921 at the end of 20 years of investing. Nevertheless, the given example is rather contingent as the real profitability of assets will strongly depend on the economic situation and the financial achievements of the specific company.

A brief overview of the expected growth of investments using different interest methods described above is presented in Figure 1.

Figure 1. Comparison of capital growth with 8% interest rate using simple and compound interest



Source: author's calculations based on discussion above

1.4. Conditions and structure of retirement savings systems in the Baltics

While raising up the topic of current methods of accumulation available to the population of Baltics to work with in the long run it's necessary to highlight the conditions of savings growth provided by the governments to have a clearer understanding. All three Baltic countries have developed and provide their citizens with three pillar pension systems which imply more less similar conditions.

First pillar or the state pension in Estonia is calculated from the social tax of the monthly wage which means 33% of the salary paid by the employer. 13% of that amount goes as health insurance while another 20% (or 16% while 4% directed to the mandatory funded pension) is addressed to the pensions of current pensioners (Pensionikeskus 2020). The main reasons for the provision of the state pension is the attainment of the old age (age of 63 (by 2026, the age of 65) and has a working experience of at least 15 years), for disability or loss of a breadwinner. Second pillar or mandatory funded pension seeks to create an additional savings of working people for their future pension by taking 2% out of their gross salaries while the government adds 4% from that 20% of the state pension taken from workers' monthly wages. The money paid to the mandatory funded pension goes to the fund companies so they could invest them in different sorts of assets in order to increase their value. The participation in the second pillar is mandatory for everyone who was born in 1983 and later and a person has the possibility to receive payments from the second pillar only upon reaching the retirement age and its amount strongly depends on the amount of assets accumulated in the pension fund. Third pillar or the supplementary funded pension offers the possibility to build extra income for the pension period while making a pension insurance contact with life insurance companies or investing into voluntary pension funds. The one has a chance to control the amount of contribution and preferences in pension funds or insurance companies and update at any time. In addition, the contribution to the third pillar can be beneficial in terms of receiving back an income tax from investing into a voluntary funded pension but only in case if the donation doesn't exceed 15% of the one's gross income and no more than € 6000 for the calendar year. Accumulated amount from the additional pension funds can be taken out starting from the age of 55 and payments can be received on monthly or quarterly bases.

Latvian pension system consists of three pension pillars as well, which complement each other. Nevertheless, there are differences in the amount of state influence on an individual from that

introduced in Estonia. For example, the size of the share going to social contribution in the first pillar equals to 35.09% of the monthly gross salary as well as 20% goes to the pension capital with payments starting from the retirement age of 63 years and 9 months both for men and women and minimum period of social insurance contributions of 15 years (Manapensija 2020). Contribution of Lithuanians to the second pillar in terms of the share of gross wage still takes the same 6% but participation goes as mandatory to everyone born after July 1, 1971. In addition, there's more attention to personal contribution in creating a future capital from the second pillar as residents must choose the most convenient investment plan and a funder manager so they can decide on the risk level of funds. Third pillar in Latvia represents the opportunity to gain additional savings for retirement by joining open pension funds with the possibility to derive savings starting from the age 55 years. In Latvia as well as in Estonia third pillar participants have the chance to receive income tax from their investments but only if the financial input does not go beyond 10% of the gross annual income and not more than € 4000 (SEB 2020).

Lithuanian legislation has established a social contribution for the first pillar in the size of 30.7% of the employee's gross salary, a part of which - 23.7% of the untaxed income is used to service the current pension capital. Old-age pension compensation begins upon reaching the retirement age among the population at the age of 64 years for men and 63 years for women (Renkuosilietuva 2020). In the case of a second pillar in Lithuania it's a more voluntary decision to take part in that sort of savings accumulation as every worker under the age of 40 years is asked to join an additional savings fund and there's a chance to refuse the proposal (an offer is made every three years until the person reaches the age of 40). Contribution rate for cumulative pension funds represents the scale of 3% of contributor's salary plus 1,5% of an investment from the side of the state budget and the participant can choose from different funds offered by pension fund companies in accordance with her/his age and investment performance of the separate fund. The accumulated resources in the second pillar can be taken out only when the person reaches pension age and the amount of benefit payments is determined in accordance with the contact and chosen mode between the company and the contributor (Sodra 2020). Third pillar pension funds or supplementary voluntary accumulation as well based on periodic investments in a long-term perspective to any preferred fund accumulation company and allows withdrawals up to five years before retirement age. Lithuanian government refunds income tax on contributions into third pillar

funds that don't exceed 15% of a worker's yearly income or € 6000 annually in monetary interpretation (SEB 2020).

1.5. Applicable theories for private savings behavior

1.5.1. Life-Cycle Hypothesis

While discussing the way people accumulate money in the long-term perspective and major factors for these financial activities it's necessary to highlight the binding theories. One of them is Life-Cycle Hypothesis of how people prefer to relocate their spending and saving habits over their lifetime which was introduced and developed in the early 1950s by Franco Modigliani and his student Richard Brumberg (Wikipedia 2020). This theory implies that people distribute their costs with an emphasis on their future income, that is, at a young age they take on a debt believing that they can cover it with future income, and at the middle age they are already accumulating in order to cover their level consumption in the retirement period (Wikipedia 2020). Thus, the pattern takes the form of a hill, with the largest accumulation of savings occurring in the middle age while the period of young age and retirement go with higher spending's rate. However, the theory includes some assumptions for supplementary reflection. Life-Cycle Hypothesis assumes that during the retirement period there should be a depletion of the accumulation of money gained at middle age. However, it is worth paying attention that those savings can be passed on to both the younger generation, and the person himself may not show an active desire to spend savings. In addition, it may be such a situation that a middle-aged person does not show an active position in creating savings without having enough desire, or working as a freelancer or part-time, even during the retirement period. Another assumption of note is people with higher incomes have a greater ability to deposit some amount into a savings account than those with lower income and third-party financial obligations such as repaying a loan or debt.

1.5.2. Theory of Planned Behaviour

Taking a foundation in psychology, the Theory of Planned Behavior (abbreviated TPB) creates a connection between belief and behavior. Proposed by Icek Ajzen in 1985 the theory was a continuation of the Theory of Reasoned Action previously outlined in 1980 by himself and Martin Fishbein which implied that if people suggest the proposed behavior to be positive and think their

significant others want them to perform that behavior, this leads to even more motivation and they are more likely to do so (Wikipedia 2020).

The model TPB suggests itself that human behavior is determined by three key variables: behavioral beliefs, normative beliefs, and control beliefs. Collectively, behavioral beliefs generate positive or negative attitudes toward behavior, normative beliefs lead to subjective norms, and control beliefs create perceived behavioral control. An attitude toward the behavior, the subjective norm, and the perceived behavioral control collectively lead to the creation of behavioral intention. It is also believed that perceived behavioral control affects both directly on actual behavior as well as indirectly creates an effect through behavioral intention (Wikipedia 2020). A more favorable attitude towards behavior and subjective norms, its greater compliance with moral norms and moral correctness of a person, and the greater the perceived behavioral control, as a rule, leads to a stronger intention of a person to perform such behavior.

TPB model has been proven itself well as a theoretical basis for the study of savings behavior by being used in identifying the factors for starting accumulation of personal funds as this process can be considered as an outcome of decision-making acts in order to achieve and keep a specific level of living, reserves for emergency situations as well as the possibility to meet financial anticipations and objectives. In other words, the Theory of Planned Behavior has a strong and positive influence on financial accumulation decisions and definitive saving behavior with particular emphasis on the relationship between attitude, perceived behavioral control, subjective norm, and behavior intention to save for future (Satsios, Hadjidakis 2018).

1.5.3. Continuity Theory

The Continuity Theory implies that older people try to maintain a similar level and quality of lifestyle, behavior, activity and connections with others, which was developed and kept in their youth and middle age as well as sustain an uninterrupted lifestyle with the move to retirement by adapting strategies based on past experience. The theory was partially proposed by Robert Atchley in 1971 and finalized in 1999 as it had been observed that the majority of older adults' exhibit consistency in activities and relationships, despite the gradual change in physical, mental and social status over time (Wikipedia 2020). Theory interacts with internal and external structures of continuity in order to reveal how people adapt to a situation and an established goal. Internal

structure such as personality, ideas and beliefs are unchanged throughout a person's life. This allows a person to make decisions based on an internal basis, knowledge and experience of the past. At the same time, external structure of one person, for example, social connections and roles, provides the support for achieving a sustainable self-image and way of living.

Thus, one of the main considerations when planning for retirement is to take into account the ability to cope financially with health care and the rising cost of living amid global instability and constant inflation. In theory, there are three time steps that are highlighted for making retirement decisions, with a first step towards retirement in the future, with the next phase by taking into account the right time to retire, and actually implementing plans that will contribute to the pension fund. In this regard, Continuity Theory suggests that people would be more accustomed to having a smoother transition from work life to retirement without embarrassing too much their expectations and plans in quality of life during the pension (Nga et al. 2018).

In these terms, retirement planning should not simply be rated by the market-driven model as an individual's lifestyle and approach to saving and spending can vary greatly from the established average statistical indicator as well as emergency situations such as illnesses or other costly events may occur at the most inconvenient moment. As a result, it may happen that retirees will end up spending more in the retirement years than planned, which may lead to the fact that the initially accumulated funds are not enough for a comfortable life and there’s a need to have a job in retirement to bridge this gap (Saieed 2017).

1.6. Previous studies on related variables

The study of saving behavior is one of the most pressing topics of our time and the identification of the underlying determinants in saving and investing activities is the most important point in creating a more stable accumulation system among the world population (Yusof, Sabri 2017). Based on already completed empirical studies in cumulative behavior, such fundamental socio-economic factors as age, income, educational level, and the total number of years of working practice are revealed (Swasdpeera, Pandey 2012).

Age is considered as the dominant factor in the development of savings behavior, thus revealing that at a young age people tend to postpone the start of money accumulation, while at a more mature age they try to fill that gap and catch up to accumulate as much as possible to retirement (Sneed, Wise 2013). The other most significant factor is an income level due to its significantly positive influence on the average saving ratio as well as its strong correlation with factors affecting saving amount as age, marital status, educational level (Swasdpeera, Pandey 2012). In addition, it was determined that lack of financial knowledge and first-hand experience in investments has a negative effect on understanding of complex investing instruments and aversion towards this way of money growth (Swasdpeera, Pandey 2012). Surprisingly, it was also found that acquaintance and learning about self-savings at times had a negative effect and was viewed as a sales session, rather than impartial education or training (Swasdpeera, Pandey 2012). An employment status in terms of the total number of years of work and the professional position occupation were also positively correlated with the willingness to save (Myeong 2010). Last but not least, higher education attainment also has a positive contribution on the tendency of individuals to accumulate more savings (Solmon 1975).

Determining the nature of savings behavior is also influenced by how a country characterizes itself by economic, demographic and social qualifiers in terms of internal attitudes towards to population aging, economic growth, fiscal and monetary policies (Niculescu-Aron, Mihaescu 2014). Moreover, the rise in the inflation rate affects the increase in the level of private savings as a demonstration of social uncertainty while softening credit restrictions leads to a reduction in private savings (Tatliyer 2017). Thus, it can be revealed that the tightening of economic, social and demographic conditions and the growth of uncertainty and insecurity have a positive effect on the growth of interest in independent savings. On the contrary, softening the circumstances for gaining access to conditional financial stability in the form of loan and stable economic growth reduces the desire for private investing.

1.7. Research problem setting and hypotheses development

In today's world the topic of public financial security and money accumulation is fairly discussed as well as a wide variety of approaches to resolving this situation is proposed. Nevertheless, savings behavior is quite a complex topic as it includes both social and economic aspects and is largely associated with the psychology of human attitude. Thus, it is hardly possible to create one single plan of how through certain savings and investments to make all the people of the world financially secured, because this will include many independent factors. So, one can only deduce certain recommendations and suggestions on how to achieve financial well-being.

Accordingly, the aim of the study is to make clear how the current generation of the Baltics admits the fact that state pension payments are not sufficient for comfortable financial well-being on retirement as well as what actions in the form of additional accumulations are taken on the part of the population to resolve this issue. So the research problems are constructed in such a way as not only to test relations of various factors on the acceptance of the use of long-term investing among the population of the Baltic states, but also to understand in general what kind of attitude towards long-term investments is built among people.

Although the empirical research in the thesis will study the elements influencing the creation of a third party of accumulation, the focus of the study will also be on how exactly one can effectively accumulate. Thus, the research question is focused on how people can create personal accumulations and extract the most benefit in the long run.

There is a growing trend of unsatisfactory towards government stated pension systems due to their impossibility to fully cover the financial needs of residents. At the same time, states are actively promoting the population with multi-pillar systems in order to solve the problem of financial insecure in retirement and let people to save more voluntary (3rd pillar) although it is perceived with skepticism. The foregoing leads to the first hypothesis:
H1. Less than half of the sample has joined the third pillar of the pension system.

Popularity is growing around self-sufficient accumulation systems since the government-promoted saving funds are perceived with apprehension and a share of mistrust. In addition, such methods

of savings are distinguished by freedom of choice of risk-return rate of assets and holding time which arouses the interest of investors in such a sort of accumulations. The above leads to the second hypothesis:

H2. More than half of the respondents think about creating or already have their own savings for the future.

With the correct approach, long-term investments are effective and sufficiently safe in terms of risk-return ratio. The most important thing remains the correct distribution of assets and the expectation of the holding's growth in its size. At the same time, for some people this becomes the main reason for denying long-term savings, since it is necessary to carefully choose the components of investment and the opportunities for their growth. The foregoing leads to the third hypothesis:

H3. Less than half of the respondents are familiar with the long-term accumulation methods of personal funds and ready to expect results from them.

Method of interest compounding is a logical and advanced continuation of long-term investing planning to build more efficient growth in savings. At first, this may seem confusing and difficult to understand, and therefore requires more awareness and understanding of the actions. These qualities can be acquired with the age and how the one grows in professional status, earning, gaining life experience and gets to know the ways how to save. Thus, the hypothesis for testing is following:

H4. Readiness to long-term invest with compounding growth highly depends on age, employment status, income, life experience, and investment knowledge or first-hand experience.

In the following sections will be discussed whether to accept or reject established hypotheses.

2. METHODOLOGY AND EMPIRICAL RESEARCH

2.1. Data collection description

Quantitative research method in the form of the questionnaire is taken in the process of data collection for analysis and was primarily chosen as it allows to achieve a higher level of data collection with less requirements in additional costs. The planned sample size for the questionnaire ranges from three hundred to four hundred people and consists of mostly equal proportions of residents for the three Baltic countries as well as participants are targeted to belong to different social groups with similar interpersonal characteristics and occupation activities in order to achieve strong distinction among the sample group units to have a better description and insight in the current view to the subject. Major task for an implementation of the questionnaire is to collect relevant and appropriate data which can be applicable to make a conclusion on merits. This method of collecting information represents close-ended questions to be answered by selecting from the multiple-choice or "yes/no" options in order to be easily analyzed with the questions formulated in straightforward manner and logical order to create a superior understanding among the participants. It was decided to prepare the questionnaire in English language due to its spread over three different countries and chosen language is unique one to hold the communication over the participants of different Baltic countries. The distribution of the questionnaire was done among university students, colleagues at work through internal organizational networks and via social media platforms, therefore the participants were of a great variety both in terms of social status and behavior, as well as in personal qualities and characteristics. In addition, a strong proclivity was made with the request to promote the questionnaire among the social contacts of each participant thus creating additional unpredicted growth in survey participants in terms of social identity groups variation by comprising a non-probability chain sampling technique and reducing the factor of bias.

The structure of the questionnaire was created and developed in such a way that among all its participants it did not cause a lot of time and effort to answer questions in a structured order, without unnecessary confusion in the topics raised and in the way they believe to be correct, that is, the answers of each individual are close to subjective and personal approach so the final results can be done as stated by realistic and present-time attitude toward long-term saving accumulation methods among the residents of Baltics. The questionnaire made up of five consistent and interconnected elements, by virtue of this separation it becomes easier to navigate topics and more clearly respond to tasks. The first section of the questionnaire involves the collection of general data from participants on a demographic basis including sex, age, territory and place of living as well as educational level, primary professional occupation and knowledge or practice involvement in the financial sector. Following element or "Marital status" introduces a civil status of the participants in terms of pointing out who he or she lives with, whether the person runs a joint household about shared financial savings and whether having children.

Third section called "Cash flow" gives people a vote to indicate what kind of employment condition they are in charge of at the moment and what method of earning is inherent as well as state an approximate gross income on monthly basis and current financial obligations to be carried out. This sort of information is helpful in the way to identify the most basic financial reasons and opportunities for a person to start thinking about creating money savings. The next part of the questionnaire delves deeper into the topic of voluntary funds and savings systems, and also focuses on determining the interest of participants in the growth of personal financial well-being in the long term. It was decided to clarify if people are familiar with the pension systems, especially the third accumulation pillar, and see what level of understanding is achieved by the residents in respect of savings to be gained and offered from the side of the states after one's move to retirement. In addition, it was intriguing to review how people respond to creating additional ways of money accumulation and saving and as far as they see it as necessary and effective in the long-term perspective besides that to be proposed by the states.

The last section of the questionnaire named "Interest compounding in savings growth" is an important part of the entire questionnaire as it determines how well the survey participants are familiar with third-party methods of accumulation in the long term prospect taking into account reinvesting stock dividends and bond payments in addition to monthly contributions. The element

raises the topic of general awareness of interest compounding in investments and the growth of private accumulations. In addition, it tests how people can maintain such deposits without their partial or complete withdrawal for several decades. Full version of the questionnaire used in data collection can be discovered at the end of the thesis, refer to Appendix 1.

Descriptive statistics in the form of central tendency and dispersion measures as one general model with all dependent and independent variables is represented in section 2.2 in Table 2.1 and is going to be set with the data collected through the questionnaire introduced above. In addition, there are separate tables with correlation matrix and descriptive statistics pointed out as Table 2.2 and Table 2.3, respectively, which is provided to generate a discussion and to deduce on the fourth hypothesis. Their outputs in terms of relation to established hypotheses are represented in the next section as well. Moreover, the regression model is also introduced at the very end of the following section to further uncover the relationship between the dependent and various independent determinants.

2.2. Data and descriptive statistics

Using the questionnaire described in section 2.1, the reactions of 441 participants were collected in terms of 213 men and 228 women in the age range from 18 to 47 years in the terms that the opinions of each participant on the questions were more relevant to the topic of the decision to start or already have third-party savings methods. The place of residence of the participants among the countries of Baltics is distributed in quantities of 189, 143 and 109 across Estonia, Latvia and Lithuania, respectively, with 361 people in total living in capitals. Average age of participants can be rounded up to 30.5 with a mean working experience of 11 years. Among the entire group of respondents, more than half of the sample has individual or professional interconnections with finance in education or work. At the same time, higher education was obtained from about two-thirds of the entire group of surveyed participants and a little less than half are occupied by skilled employment in which work requires judgment from the employee side in making decisions and asks for specific qualifications as well as most of the participants having a permanent job. In this way, according to a tendency matched in descriptive statistics it is possible to identify a pattern that a person with a higher education can be associated with professional activity as a skilled

employee and hold a work position with stable earnings. Slightly more than half of all participants are aware of three pillars of pension systems introduced by the governments, whereas one-third of the group have ever tried and managed to find out their level of retirement benefits, and only a very small party of people feel completely financially secure and comfortable receiving only pension payments after retirement. Descriptive statistics for both dependent and independent variables is introduced in Table 2.1 and included in the regression analysis.

Table 2.1. Descriptive statistics

Variable	Mean	Standard Deviation	Min	Max
Sex	0.48	0.5	0	1
Age	30.56	10.38	18	47
Place of residence Estonia	0.43	0.5	0	1
Place of residence Latvia	0.32	0.47	0	1
Place of residence Lithuania	0.25	0.43	0	1
Capital residents	0.82	0.39	0	1
Higher level of education	0.71	0.45	0	1
Skilled employment	0.46	0.5	0	1
Finance related education/job title	0.68	0.47	0	1
Stable job worker	0.89	0.31	0	1
Feel experienced	0.74	0.46	0	1
Need of third-party earnings	0.86	0.35	0	1
Number of years of work	11.15	8.51	0	24
Gross monthly wage	1457.14	562.74	0	2800
In close relationships	0.46	0.5	0	1
Children	0.36	0.48	0	1
Shared savings with close person	0.39	0.49	0	1
Both members in relation works	0.75	0.43	0	1
Financial obligations to execute	0.39	0.49	0	1

Competent of pension pillars	0.64	0.48	0	1
Joined voluntary 3rd pillar	0.16	0.44	0	1
Assumed pension side	0.29	0.45	0	1
Pension is enough for a comfortable retirement	0.04	0.19	0	1
Rational to accumulate money in long term objective	0.57	0.5	0	1
Familiar with interest compounding in saving	0.61	0.49	0	1
Untouch investment fund for several decades	0.43	0.5	0	1

Source: author's calculations

When it comes to the topic of civil status as a social factor in decision making and actions related to savings and investments, it is possible to highlight next features of the current analysis. Slightly less than half of the survey participants are in close relationships and live together with their partner, just as little more than a third of the respondents have already had children and have joint savings. Furthermore, three quarters of survey participants in relationships state that they and their loved ones are both engaged in working activities. Along the same lines it can be recognized that a bit less than half of the sample holds current financial obligations to be carried out such as mortgage, loan or equipment or vehicle leasing.

Slightly more than 50% of respondents agree that it is more rational to create and increase a personal savings fund over a long period of time, i.e. over several decades. More than 80% of participants positively react to creating personal third-party accumulations. Additionally, about 60% of responders are familiar with such a financial definition as compound interest and its function and methodology in creating investment growth but a little more than 40% of the sample provided an affirmative response to keep the investment account growing in the long run. Interest in long-term investment accumulations exceeds 50% of responses, while 0.43 of the sample is ready to untouch investments in a long run grow.

In order to find out how changes in the independent variables affect the attitude towards thinking of and starting saving in a long-run with growth compounding, it was decided to distribute the data collected from the questionnaire by age groups of people, that is, twenties, thirties and forties (see Table 2.3). This approach was chosen in order to create strict age periods when a person has a different income, quality of life and work experience, as well as the resulting financial method of approach to saving and accumulating personal funds. In addition, using Table 2.2, it's possible to trace the positive correlation between such variables as a person's age, total work experience and change in wages and their relationship between each other. Based on this judgment presented in Table 2.2, an evident conclusion can be done that with an increase in age and general work experience, there is a tendency in the growth of workers' salaries.

Table 2.2. Correlation matrix

Age	Gross wage	Working age	
1	0.71	0.99	Age
	1	0.68	Gross wage
		1	Working age

Source: author's calculations

It can be assumed that with increasing age there is a positive impact on the employment status of participants, their earnings, life experience in the sense of considering how money works and understanding of investing as a financial tool. In this connection, several interrelated tendencies appear in terms of increasing age and growing initiative in creating third-party savings while going through the calculations represented in Table 2.3. It can be suggested that gaining life experience by growing as a person throughout life plays a considerable role as the indicator of this variance increases with the change in the age groups (twenties, thirties and forties), and therefore, it can be said that financial literacy largely comes with the passage of years and one passing through life situations. In addition, growth in age groups has a positive effect on awareness of voluntary money accumulation among the current sample. Value of stable job workers goes up with the same move from younger to more mature respondents. Furthermore, with a change in the maturity of the groups there is a growth trend in interest and awareness of the importance of third-party savings as well as the effectiveness of long-term investments.

Table 2.3. Descriptive statistics of participants' responses of different age periods

Variable	Twenties (20-29 years)	Thirties (30-39 years)	Forties (40-49 years)
Age	24	36,3	43,5
Life experience	0.67	0.77	0.83
Stable job worker	0.48	0.83	0.96
Familiar with interest compounding in saving	0.54	0.65	0.63
Rational to accumulate money in long term objective	0.48	0.62	0.76
Need of third-party accumulation	0.51	0.76	0.89

Source: author's calculations

2.3. Regression model

Since the main task of this work is to identify the main factors influencing the use of long-term investing methods for personal accumulation funds, it was decided to create a separate analysis of the main socio-demographic factors and their impact on interest compounding in savings using a regression model.

Current analysis uses the following socio-demographic and economic characteristics and factors as stable income, higher education, finance related education or job, region of living, third-party earnings, financial obligations, competence of three pillar financial system, long-term investments, and high professional experience. This list of variables is accounted for as independent in the study

while awareness of compound interest in funding is taken as dependent variable in order to trace how strongly different factors contribute to it. It was chosen as dependent because of its relationship with the highest degree in the knowledge of obtaining the greatest benefit from private investing (Investopedia 2020).

In the previous section, various explanatory variables and their combinations were used with the aim of seeing the most obvious factors for the transition to private long-term savings as well stated as savings to retirement. The most opportune formula of the mathematical equation for the analysis is presented below as well as it's interpreted with the given values of variables which were in great demand in previously taken studies (Swasdpeera, Pandey 2012).

Formula 1: Mathematic equation

$$\text{Interest Compounding} = \beta_1 - \beta_2*\text{Sex} - \beta_3*\text{WW} - \beta_4*\text{HE} + \beta_5*\text{Fin} + \beta_6*\text{Cap} - \beta_7*\text{TPE} - \beta_8*\text{FO} + \beta_9*\text{PPS} + \beta_{10}*\text{LI} + u - \beta_{11}*\text{SW} \quad (1)$$

Note: u - random component or error term.

where

Sex – gender;

WW – wage worker with stable income;

HE – higher education;

Fin – finance related education/work title;

Cap – accommodation in the capital;

TPE - third-party earnings;

FO – financial obligations to execute;

PPS – competence of three pillar pension system;

LI – interest in long-term investments;

SW – high professional experience as a skilled worker;

Formula 2: Mathematic equation

$$\text{Interest Compounding} = 0.333 - \underset{(0.294)}{0.113}*\text{Sex} - \underset{(0.190)}{0.0224}*\text{WW} - \underset{(0.198)}{0.224}*\text{HE} + \underset{(0.211)}{0.233}*\text{Fin} + 0.179*\text{Cap} - 0.109*\text{TPI} - 0.0964*\text{FO} + 0.355*\text{PPS} + 0.497*\text{LI} + u - 0.175*\text{SW} \quad (2)$$

(0.161) (0.183) (0.183) (0.155) (0.175) (0.147) (0.268)

Note: n = 33, R-squared = 0.647 (standard errors in parentheses)

Using GNU Regression, Econometrics and Time-series Library (abbreviated form of Gretl) program, a logit model estimation was built in Model 1 (Table 2.4) representing results of testing links between independent variables, namely gender (Sex), stable income (Wage Worker/WW), higher education (HE), finance related education or job (Fin), region of residence (Capital/Cap), third-party earnings (TPE), financial obligations to be performed (FO), competence of three pillar pension system (PPS), long-term investments (LI), and high professional experience (Skilled Worker/SW), with the dependent one which is awareness of compound interest and calculating the coefficient of that relation. Full version of the model is presented in Appendix 2.

Table 2.4. Model 1: Logit model estimation

	coefficient	std. error	p-value
const	0.333048	(0.294209)	0.2698
Sex	−0.113220	(0.190158)	0.5577
WW	−0.0223560	(0.198231)	0.9112
HE	−0.223858	(0.210940)	0.3001
Fin	0.233075	(0.161078)	0.1620
Cap	0.179071	(0.183437)	0.3396
TPE	−0.108540	(0.182823)	0.5588
FO	−0.0964225	(0.155262)	0.5410
PPS	0.355209	(0.174892)	0.0545 *
LI	0.497093	(0.147260)	0.0027 ***
SW	−0.174843	(0.267838)	0.5207
N	280		
McFadden R-squared	0.486229		

Source: author's calculations based on survey data
Notes: *p<0.1; **p<0.05; ***p<0.01.

Pearson correlation matrix of variables of the study (Table 2.5) is prepared to examine and evaluate another way how different social and demographic factors are related to the knowledge of interest compounding in private savings accumulation. Represented results of the correlation coefficients between variables are based on the dataset generated from a questionnaire.

Table 2.5. Pearson correlation matrix

Wage worker	Higher educa-tion	Finance	Capital	Third party income	Financi-al obligati-ons	Pension pillars system	Long invest-ment	Skilled worker	Interest compo-unding	
1.0000	0.1000	0.1667	0.0199	0.2457	0.0000	0.3333	0.2631	0.0657	0.2020	Wage worker
	1.0000	0.3500	0.1554	0.4856	-0.3500	0.3500	0.2675	0.6565	0.0886	Higher educati-on
		1.0000	0.0598	0.3468	-0.0455	0.3182	0.4824	0.3283	0.5129	Finance
			1.0000	0.1917	-0.2390	0.0598	0.1782	0.1020	0.2731	Capital
				1.0000	-0.2168	0.3468	0.1901	0.3188	0.1658	Third party income
					1.0000	0.2273	-0.2193	-0.1313	-0.0933	Financi-al obligati-ons
						1.0000	0.2193	0.5252	0.3730	Pension pillars system
							1.0000	0.2706	0.6829	Long invest-

		ment
1.0000	0.1592	Skilled worker
	1.0000	Interest compo-unding

Source: author's calculations

Worth noticing, in accordance to the results in Table 2.5 strong correlation is created between variables "Skilled worker" and "Higher education", and equals 0.6565 what can be claimed that with higher education level better work position is gained and a more qualified specialist becomes (OECD 2012). Another strong correlation of 0.6829 is discovered between variables "Interest compounding" and "Long investment" which may be since with long-term investments it becomes relevant to obtain additional benefits through interest compounding (McKenzie, Liersch 2011).

3. RESULTS

Despite the fact that the revealed theories at the beginning of the work were discussed, still remains open the issue posed in the title of the entire study or what are the leading factors in deciding whether to hold a private accumulation fund in the long-run for the residents of the Baltics countries. Thus, the respondents of the sample for data collection were selected from citizens of Estonia, Latvia, Lithuania. With the reference to descriptive statistics in Table 2.1 it can be extracted that 0.64 of the sample is competent of three pillars of pension systems introduced by the governments and 0.29 of the group assumed size of retirement benefits. At the same time, just over one-sixth of the surveyed group joined the voluntary third pillar. Thus, it can be concluded that the majority of respondents feel unsafe or find undesirable to rely on additional accumulation of savings by the method of the third pillar of state pension savings plans, which is in favor of the stated assumption in the first hypothesis suggesting that less than half of the sample joined the voluntary third pillar.

The second hypothesis proposes that more than half of the sample is on the way to creation or already have personal savings. With the respect to results in Table 2.1 it can be picked out that most participants in the amount of 0.86 find important creating third-party accumulations or already have such. This serves as a good confirmation of the second hypothesis and the fact that modern society is largely turned to third-party methods of financial savings.

Assumption in the third hypothesis suggests that less than half of the sample is familiar with investment instruments in long-term personal savings and anticipates the results. As a consequence, descriptive statistics do not fully confirm the assumption set in the third hypothesis, since on the basis of the analysis it can be summarized that interest in long-term investment accumulations exceeds 50% of responses in the case of a survey of the current sample, however the second part of this hypothesis is fully confirmed, because the smaller half of the sample in the

size of 43% is ready to be patient in anticipation of the exponential growth of investments in their values while others feel insecure with regard to economic and social conditions.

The fourth hypothesis assumes that the willingness to long-term investment with an interest compounding implementation depends on the age, employment status, income, life experience and investment knowledge or personal experience. The solution for the fourth hypothesis is based on a separately constructed Table 2.2 and Table 2.3. Thus, there is apparent positive change in income and employment status of one's with the growth in age (Table 2.2). In addition, the attitude towards one's own savings and ways of achieving financial stability in the future changes with age and it becomes more relevant topic to keep and grow private accumulation funds (Table 2.3). It can be a consequence of gaining life experience in understanding personal financial needs and ways how money can be raised aside as well as having theoretical financial literacy in investing or practical experience in it. Based on the above, the fourth hypothesis can be fully confirmed in relation to dependent variables, namely age, employment status, income, life experience, and investment knowledge and/or first-hand experience.

3.1. Results of the regression analysis

Significant associations were found between independent and dependent variables in section "Regression model" to identify major factors influencing the use of long-term investing for personal savings. Based on this, there can be identified a pattern between long-term investments (LI) variant and compound interest in terms of coefficient of determinants (Table 2.4) in the value of 0.5 as well as low rate in p-value as regards statistically weak chance of the difference between values what can fact strong variability of one factor caused by its relationship with another related factor. This stable relationship is also confirmed by Pearson correlation matrix analysis (Table 2.5) with the value of correlation equal 0.6829. In addition, this relation of two determinants is detected as the most stable among others presented in the study in relation to coefficient and correlation between those two. However, according to the calculations there can be highlighted another solid relationship as the awareness of three pillar pension funds system (PPS) facilitates the recognition of private savings due to achieved high coefficient value as well as close to statistically significant p-value determinant. Nonetheless, correlation level between competence of three pillar pension

system and the awareness of private accumulations in the correlation matrix represents a moderate linear relation with the value of 0.37. At the same time, another affinity in determinants can be highlighted in perception of finance related education or job title with the magnitude 0.51 which can be elaborated as moderately correlated. But the straightness of this relationship remains frail and unimportant.

3.2. Implication of the results

With the findings achieved during the work the following conclusions as a proposal for implementation and further research opportunities can be done. Proceeding from the fact that at the state level there is an understanding created that in the future the pension budget will not be able to cope with the growing number of elderly people, measures are being taken to form people's initiative in creating additional volunteer savings in the third pillar as an additional part of pension income. In this case, it may be proposed to create a more aggressive policy of offering the creation of personal saving funds from the side of the local banking sector and to make it more socially considerable to start not just saving money in an electronic piggy bank but also subject it to a gradual growth over time with the help of intelligent usage of interest compounding.

This will positively affect both the state due to the growth in GDP as well as favorably impact the financial position of each resident participating in the investment as personal money would rise up in passive form. Furthermore, that proposition would make people more financially cultured and prepared for the period close to retirement in terms of personal saving planning along with increasing the standard of living of each person separately and the society.

CONCLUSION

The major goal of the study is to investigate and discover the most perceptible factors which have the strongest relation with the perception of personal savings growth and its realization among the residents of Baltic countries. By analyzing the theoretical part and the studies already carried out as well as conducting independent methodological studies there can be concluded about the most considerable results of evaluation of hypotheses which have been established in the very beginning of the study. In addition, the empirical part of the study was conducted in the way of collecting the sample of residents of Estonia, Latvia or Lithuania, and screening their perception of governments retirement systems as well as attitude towards personal financial accumulations.

To attain the goal of the study next hypotheses were established:
H1. Less than half of the sample has joined the third pillar of the pension system.
H2. More than half of the respondents think about creating or already have their own savings for the future.
H3. Less than half of the respondents are familiar with the long-term accumulation methods of personal funds and ready to expect results from them.
H4. Readiness to long-term investments with compounding growth highly depends on age, employment status, income, life experience, and investment knowledge or first-hand experience.

While going through established hypotheses and their statements, next determinations can be done. On the basis of the results obtained from the participants of the questionnaire it can be concluded that the outcomes are at odds with the statement of the first hypothesis, that is, the fact that more than half of the respondents have a positive attitude towards the voluntary third pillar of the pension system proposed by the state. At the same time, the second hypothesis is fully confirmed since it states that over half of the respondents have a plan to start or already hold a third-party income generation. Verification of the third hypothesis is a divergence in the expounded

theoretical statement and analysis of the responses to the compiled questionnaire as there is a tendency in familiarity with the topic of voluntary savings, but at the same time there's a relative unwillingness recognized to create a long-term funds and expect results. It was discovered that the fourth hypothesis can be totally approved in the terms of impact of chosen dependent variables on the knowledge of and acceptance of third-party investment instruments in personal savings accumulations.

Separate analysis was taken in revealing the main factors in choosing a compound interest as an approach to creating an additional growth in personal saving funds. An enduring relation was discovered between interest in funds with a long-term investment, education and job title in finance, recognition of three pillar system and interest compounding method cognition. It can be concluded in the way that people with a finance education background, familiarity with all three pension pillars and concern of long-term investment schemes would be more conscious of compound interest in personal savings and how to have a more profitable outcome for oneself.

Unfortunately, since the sample of this paper included 441 participants that gave their opinion in the questionnaire then it is inadmissible to consider the results as completely objective and tie them up to the entire population's attitude among the Baltics. It is worth noting the reasons for such a judgment which are tough to be avoided as a limitation of the sample as well as chance of biases and some statistical insignificance of variables which should be taken into account with the problem of appointing a sufficiently representative sample.

The objective of the study set by author was achieved. The answer to the stated research question has been received. In the following research, more respondents can be added to the sample and additional variables can be measured.

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APPENDICES

Appendix 1. Questionnaire in English language

*****necessary to respond

Personal info:

1) Sex*
    a) Male
    b) Female

2) Age*

    _____

3) Country of living (on the territory of Baltics) *
    a) Estonia
    b) Latvia
    c) Lithuania

4) Place of living*
    a) Large - inhabited locality with more than 250 thousand people
    b) Big - inhabited locality with 100-250 thousand people
    c) Medium - inhabited locality with more than 50-100 thousand people
    d) Small - inhabited locality with less than 50 thousand people

5) Highest level of education achieved*
    a) Middle school
    b) Secondary education

c) Higher education - Bachelor degree
d) Higher education - Master degree
e) Higher education - Doctorate degree

6) Primarily occupation*
   a) Agriculture, food, natural resources
   b) Architecture and construction
   c) Arts, communications and entertainment
   d) Business administration and management
   e) Education and training
   f) Finance
   g) Government and public administration
   h) Health science
   i) Hospitality and tourism
   j) Human services
   k) Information technology
   l) Law and public security
   m) Manufacturing
   n) Marketing and sales
   o) Science, technology and engineering
   p) Transportation and logistics
   q) Student
   r) Unemployed
   s) Retired

7) Occupation skill level*
   a) Unskilled worker (work includes simple tasks)
   b) Semi-Skilled worker (work requires attention to details and risks but doesn't include complex responsibilities)
   c) Skilled worker (work requires judgment from employee in making decisions and asks for specific qualifications)

8) Higher education or/and job title in finance sphere*
    a) Yes, both higher education and job title in finance are achieved
    b) No, only higher education/job title in finance sphere (please stress out one element)
    c) No educational or professional background in finance

9) Total number of years of work*

    _____

10) Evaluate own life experience in understanding and managing money (experience and knowledge gained through living) from 1 to 10*

    _____

Marital status:

11) Married/not married*
    a) Married (inc. close relations with another person)
    b) Not married (inc. living alone)

12) Having children*
    a) Yes
    b) No

13) Shared savings with another (close) person*
    a) Yes, the money earned is kept together with close person (fully or partially)
    b) No, I control my savings myself (both for people in relationships and for those who live alone)

14) Working members in a family / people in close relationships*
    a) Both members are tied to work (fully or partly) (inc. those who live alone)
    b) Only one of the members in the relationship takes part at work activities

Cash flow:

15) Employment condition*
    a) Full-time employee
    b) Part-time employee
    c) Self-employed professional
    d) Handyman / freelancer
    e) Unemployed / temporarily unemployed
    f) Pensioner

16) Method of income generation*
    a) Earned income for full-time (part-time) employment
    b) Business income for being as self-employed (owning a business)
    c) Interest income from lending money to someone/something to use
    d) Dividend income from holding shares of any company
    e) Income from renting out real estate
    f) Capital gains from an increase of assets owned
    g) State / social benefits (inc. pension payouts)

17) Monthly wage before deductions*
    a) less than €500
    b) €500-1000
    c) €1000-1500
    d) €1500-2000
    e) €2000-2500
    f) more than €2500
    g) no income

18) Recent financial obligations to be carried out*
    a) mortgage
    b) equipment or vehicle in leasing
    c) loan
    d) other

e) no financial obligations to be performed

Voluntary saving/investing

19) Joining 3rd pension pillar*
    a) Yes
    b) No

20) Tried to calculate retirement rate (amount to be received from the state) upon reaching pension period*
    a) Yes, I managed it
    b) Yes, I tried, but I could not understand everything
    c) No, I didn’t

21) Only pension is enough to maintain a comfortable standard of living in retirement*
    a) yes, that's sufficient level
    b) no, that's not enough to cover personal needs and wants
    c) Difficult to answer

22) Satisfied with the amount of the pension to be paid upon reaching retirement period according to professional achievements (salary,% paid to pension funds) *
    a) Yes
    b) No
    c) No idea how much my pension should be

23) Planning or already have additional ways of money inflow to grow personal financial wealth (investing, savings plan, etc.) *
    a) Already took this sort of actions to grow money
    b) No, but planning to start one day
    c) Never thought about it

24) Save money using pension pillars proposed by government*
    a) Yes

b) No

25) Familiar with different methods of investing/money growth plans*

a) Yes, aware of some investment methods and/or use/planning to use them in practice, please name them:

_____

b) Absolutely don't know anything about it

Interest compounding in savings growth

26) See it rational and effective to invest money for a period of several decades with a constant addition of small amounts to the main account*

a) Yes, totally agree
b) No, waste of time and money
c) Difficult to answer

27) Once heard about the method of interest compounding (interest is added to the invested principal amount, and then the interest rate obtains to the new (bigger) principal) for savings growth*

a) Yes, familiar with this method
b) No, never heard about it
c) Difficult to answer

28) Ready to keep the investment account intact (and stably supplement small amounts there) for several decades with the aim of exponential growth in the case of long-term investment (15 to 30 years) *

a) Yes, completely ready
b) No, feel insecure about it
c) Difficult to answer

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