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# Personal Finance Management Skills and Financial Sustainability Literacy Knowledge of Generation Y: An Empirical Analysis in Lithuania

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**Abstract**

*Purpose*

We research Generation Y personal finance management skills by integrating three financial literacy measurement perspectives: financial knowledge, behaviour, and attitude towards sustainability.

*Design/methodology/approach*

A financial literacy measurement approach aligned with the OECD methodologies and comparative approach to evaluate the financial literacy competence of the Lithuanian youth (N=426) in the global context were applied. Analysis of variance using Levene's test for equality of variances and t-test for equality of means were employed to check for the differences in Generation Y financial literacy patterns. The correlation between all three financial literacy perspectives was evaluated.

*Findings*

The results unfold Lithuanian millennials' intermediate level financial literacy competence: moderate financial knowledge, positive financial behaviour, and more positive financial attitude towards sustainability, where the latter exceeds the global sustainability concern. Furthermore, our tests indicate the differences in Generation Y financial knowledge in terms of gender and education and the differences in their attitude on financial sustainability in terms of gender, education, income source, and monthly income. Moreover, our research evidences the statistically significant proportional relationship between Generation Y financial behaviour and their attitude towards the sustainability principles application in the financial services.

*Originality/value*

In terms of financial literacy, global research extensively focuses on selected countries; Lithuania, the Baltic States, or Eastern and Central European countries are seldom considered. Previous research identifies the existing differences between age groups when evaluating their financial literacy and level of personal finance planning skills. In contrast, our research contributes to increasing the body of knowledge of financial sustainability literacy, and to a better understanding of financial literacy by shedding light on the patterns of Generation Y in Lithuania and provides roots for developing insights for both finance literacy policy makers and financial service providers.

**Keywords:** personal finance management, financial literacy, financial behaviour, financial sustainability literacy, Generation Y

**JEL:** D14; G4; G53; Q56

## 1. Introduction

The global relevance of financial literacy and personal finance management is evidenced by both researchers (Lusardi et al., 2010; Lusardi and Scheresberg, 2013; Fornero and Monticone, 2011; Almenberg and Säve-Söderbergh, 2011, Scheresberg et al., 2020; etc.) and international institutions (OECD, SCHRODERS, DELOITTE, etc.). Research results document a relatively low financial literacy level in most countries. Financial literacy competence is not always related to the economic power and financial strength of a country. Financial illiteracy is observed in the countries marked by the rapid change of their financial markets as well as unexpectedly in the countries with well-developed financial markets (Lusardi and Mitchell, 2011). This indicates that populations are not inclined to plan their personal budget, resulting in ineffective borrowing (i.e., amounts of credits, their sources, and borrowing price), low saving rate (i.e., low retirement change rate, inability to evaluate investment risk, inflation, and interest norm, and the impact of saving time on short-term and long-term saving goals). However, global research focuses on selected countries only, ignoring the financial literacy and financial behaviour in smaller economies such as Lithuania. High-level financial literacy is relevant to all groups of society, especially for young people who start their individual life by earning and spending their income, to properly plan their expenses and chose the financially sound decisions appropriate to their needs. This article focuses on the finance management skills of Generation Y (a.k.a. millennials, who are born in 1980-1999 (Seppanen and Gualtieri, 2012)), with the goal to evaluate their financial literacy competence to serve identifying measures, the application of which might contribute to strengthening their financial literacy competence, active and sustainable personal finance management. Previous studies aimed at explaining financial literacy by measuring financial knowledge; recently, there is a limited concern at examining which factors affect financial behaviour and financial attitude, both of which in line with financial knowledge build the concept of financial literacy (Kadoya and Khan, 2020). To reduce this gap, our research builds upon all three components of financial literacy. The implementation of the widely publicly discussed measure of financial education creates the need for going through the process of identifying groups and their underlying patterns (Oliver-Marquez et al., 2021). In line with this, our special interest is in contributing to narrowing down all the generic financial education recommendations/plans as a common financial literacy research outcome, from the entire population based and generalised ones, to the subdivision level of population groups. The determined salient patterns of these groups could be closer and better tied to more solution-centred outcomes, i.e., proposals, leading them to the exploration of clusters and layers of society to better serve policy makers actions. We build the groups on socioeconomic categories as identifiers and evaluate the effects of socioeconomic factors on financial literacy competence to extract and distinguish the ones that more than others signalise and call for attention. Additionally, we establish a novel, untraditional, look in the personal finance management field by drawing a relationship between the two concepts of well-being: a traditional financial literacy and a newly emerging financial sustainability literacy. We largely draw attention on the latter, as it is entering the financial world as a new concept shaping financial business in line with the overwhelming trends of overall sustainability and as an approach that affects and is applied in personal finance management and can be observed through sustainability focused behavioural and attitudinal financial decision-making (Muñoz-Céspedes et al., 2021).

## 2. Literature Review

### *2.1 Perception of the Concepts of Financial Literacy and Sustainable Consumer Behaviour*

Literally perceived as financial health and its care (Krechovská, 2015), financial literacy competence pools awareness, knowledge, skills, and behaviours into a powerful tool (Muñoz-Céspedes et al., 2021) that allows orienting in the financial world and enabling informed financial decisions for managing personal budget and reducing the finance management erring probability (e.g., Beal and Delpachitra, 2003; Marcolin and Abraham, 2006). Even with no common agreement on the financial literacy key definition, or with in some studies reflected its “ill-defined” terms (Muñoz-Céspedes et al., 2021), the scientific literature analysis allows composing its unified perception, defined as the measurement of how individuals perceive and use personal financial information (Huston, 2010). This definition raises two aspects of measuring financial literacy – knowledge (understanding) and skills (usage of knowledge). Houston (2010) systemised financial literacy measurement criteria used in previous research. Many researchers applied three criteria for finance knowledge level measurement: understanding of (1) key definitions, (2) concept of borrowing, (3) concept of savings/investments. Moreover, financial literacy can be measured by attitude and behaviour when taking daily financial decisions. Kadoya and Khan (2020) state that by adding financial behaviour and attitude to financial knowledge a more rigorous comprehension and implementation of financial literacy can be grasped. Furthermore, Muñoz-Céspedes et al. (2021) indicate that some studies, explaining financial literacy definition, additionally incorporate other factors such as sociodemographic characteristics and financial training; these authors observe that financial literacy has been studied as a disciplinary competence in 2014-2021. Apre and Wuttke (2016) aimed at setting the stage for an educationally sound financial literacy assessment framework which includes a competence-oriented approach. A financially literate person should be able to understand the relevance of every daily financial decision and to take these decisions by applying the possessed knowledge. The adequately taken decisions can lead to reduced expenses, future savings, or life quality improvement. Even one’s simple(st) decisions depend on life circumstances and experiences.

Financial literacy research clearly highlights its alignment with sustainability-oriented actions and behaviour at a personal, corporate, societal and/or economic level. Financial literacy development as a whole can be monitored through countries’ economic indicators such as household debt, payment discipline, household and business bankruptcies and insolvencies, and property repossessions (Krechovská, 2015). There is observed an appearing research attention on the relationship between financial literacy and financially sound, informed, and sustainable decision making. In this context, the focus is on the behavioural profile of financial decision makers and financial product consumers, including their attitudes, values and beliefs, matters. The financial product consumers start to control financial service providers by becoming inclined to purchase financial products that are expressively linked with or possess the elements of sustainability. This leads financial service providers to think about and behave according to sustainability principles; this should be demonstrated to the consumers so that they would acknowledge such sustainable behaviour.

Mandell and Schmid Klein (2009) underline the necessity of financial literacy education of those who will obtain secondary education, as in the beginning of their life they face, and have to take, crucial financial decisions. Research shows that the financial literacy education level in Lithuania is rather lower than that of other researched countries and does not reach the average (OECD, 2017; OECD, 2020). After graduation and at the beginning of receiving a work income inflow, young people face the situations when they must take financial decisions, e.g., choice of retirement pension accumulation ways and choice of services for financial obligations. Although financial literacy is an obligatory competence for persons who start their individual lives, previous research documents a tendency of reducing financial literacy with each next generation of the last grade secondary school students (Mandell and Schmid Klein, 2009). Insufficient financial literacy, acquired during the school study period, results in inadequate financial knowledge for arranging their household budget and taking crucial financial decisions.

Financial services have become increasingly complex and modern; nevertheless, young people are unable to answer even simple financial questions which serve as an indicator of their financial literacy. Scheresberg (2013), reviewing research of financial literacy leaders such as Annamaria Lusardi and Olivia S. Mitchel, states that young people face difficulties when making simple calculations of interests or money sharing, and that their knowledge about inflation or risk diversification is remarkably low. Besides, most young people are not inclined to plan their budget, to save or accumulate for their retirement pension.

Financial literacy is a must for living a greatly satisfactory and autonomous life that contributes to sustainable development of economies and societies. Ensuring this requires societies and their individuals transforming their thinking and behaviour into a conscious, i.e., future generation needs focused, attitude and mode of life that is framed by their finance management related behaviour held and/or organised in a sustainable manner (Krechovská, 2015). The emergence of a definition for sustainable finance and corresponding practices became more widely acknowledged in the last five years, both in the academic literature and finance industry. Lagoarde-Segot and Paranque (2017) argued that crucially the sustainability of financial practices and financial models does not only concern finance professionals and academics, but also citizens. Lagoarde-Segot (2019), using a critical realist framework, argued that the rise of sustainable finance entails deep qualitative finance practice changes that are essentially incompatible with a positivist framework. Bernardes et al. (2019), after conducting a systematic literature review on the attitude-behaviour gap towards sustainable consumption of Generation Y, suggest encouraging and educating consumers to live a more sustainable lifestyle and to design and implement responsible marketing tools to communicate the value of sustainable consumption. Donath (2020) indicates that 75% of the labour force will be supplied by Generation Y, so sustainability issues shall be addressed with a relatively higher priority than just financial and economic business performance. It is widely acknowledged that tackling the ongoing global economic, social, and ecological issues will require redefining simultaneously the existing sustainability criteria for the financial services and understand the behaviour of younger generations to implement sustainable future development.

Budget planning can guarantee a more sustainable future and improve quality of life. Advanced technologies and fast improving digitalisation provide new possibilities to arrange household budget. The increasing internet service variety provides the possibility to buy, sell, invest, accumulate pension, etc. The biggest part of the financial service industry has moved from one’s decision dependence to automated data analysis dependence (Frame et al., 2018). The demographic tendencies with the decreasing number of marriages indicate people’s increasing choice to live alone without creating a family, thus their financial decisions are more often taken singly (OECD, 2017). More young Lithuanians choose to study abroad, therefore, even fastening their assimilation to individual life when personal finance management skills for assessing life expenses, study credit conditions, etc. are needed. Having financial literacy competence is a must, as contemporary humans have to take financial decisions more often individually.

Generation Y financial literacy and financial decisions will significantly shape and impact the social and economic welfare of future generations. When evaluating its financial literacy, the growth of this generation must be considered. Generation Y is the most educated ever: inclined to contradict optimists, sociable, and politically more active than the previous generations (Seppanen and Gualtieri, 2012). Even though the beginning of the social responsibility movement goes behind the boundaries of this generation, Generation Y is the most involved in fostering principles of business social responsibility and sustainability. Business social responsibility gained momentum in the mid-20th century when a few hundred of the largest world companies became vitally core powers and decision-making centres. Most of these companies' actions impacted the human behaviour of their clients and society members (Carroll, 1999). Ever more people looked at business as the key solution to the biggest social, economic, and political problems. Moreover, Generation Y is the most technologically educated and spends most time on social media (Seppanen and Gualtieri, 2012). Information disseminated in social media along with communities on the internet probably has the largest impact on its knowledge and attitude towards ecological, social, economic, and political problems. The increasing human consciousness about social and ecological problems impacts the investment industry; more people prioritise the sustainability of the company they invest in; many Generation Y representatives declare the necessity for social responsibility for their job place (SHRODERS, 2018). 76% of Generation Y believe that business is an extremely socially impactful power; 77% are involved in charity, voluntarism, and other social welfare activities (DELOITTE, 2017). There is a clearly altruistic worldview specific to Generation Y; evaluating its financial literacy for taking personal financial decisions requires defining their attitude towards organizational sustainability factors.

### *2.2 Previous Research Findings Addressing Financial Literacy Competence*

In the scientific literature, financial literacy as a concept is marked by its diverse range of definitions that "makes it difficult to find a homogeneous model that allows financial literacy indicators to be measured in a predictable and repeatable way" (Muñoz-Céspedes et al., 2021). There is no "consensus on a definition that would lead to finding common measurable indicators that allow assessing financial literacy and understanding its educational impact" (Muñoz-Céspedes et al., 2021).

The existing research covers predictors of financial literacy such as, among others, financial education. Duarte et al. (2021) surveyed online a sample of 185 Portuguese college BSc and MSc students, attending Economics, Management, Marketing courses in February-March 2019. By employing descriptive and inferential statistics, i.e., analysis of variance and regression analysis, they found out that financial literacy correlates positively with both one's study degree (bachelor and master) and parents' academic background level.

Killins (2017) was interested in examining behavioural and personality traits that influence cognitive and financial decision-making. He researched 149 Generation Y surveys collected via two college campuses in Canada in October 2016 and April 2017, and by conducting descriptive statistical and regression analyses, he found out that more extroversive individuals have lower levels financial literacy than those who are more introvert ones. The other finding indicated that individuals with a higher score on consciousness tend to have a greater financial literacy degree. The remaining three personality traits of the Big Five, i.e., agreeableness, neuroticism, and openness, do not prove a statistically significant impact on financial literacy. Moreover, this study does not indicate statistical significance of the gender variable in determining financial literacy levels.

Ansar et al. (2019) examined a sample of 146 online respondents born in 1981-2001, i.e., Generation Y, selected from Malaysia's states (Sabah, Sarawak, Selangor, Kuala Lumpur, Johor, Penang) based on their location, i.e., three West and two East regions, four and two states respectively with the highest bankruptcy case numbers in 2013-2017. By using structural equation modelling and partial least squares, the authors confirmed the positive effects of financial literacy together with future orientation on personal financial management, however, they did not find out any moderating role of gender between financial literacy and future orientation on personal financial management practices.

With her research, Krechovská (2015) aimed at highlighting the significance of financial literacy for global economic and societal sustainable development. For this, the author on a basis of a questionnaire, built on the standardized OECD question set, employed a sample of 600 BSc and MSc students at universities of both an economic and non-economic focus in Czech Republic in October 2014 – May 2015. By means of descriptive analysis the study revealed that an economic study field results in better financial literacy when compared with non-economic fields (the latter group provided 10% more incorrect answers). Moreover, it was shown that master studies lead to higher financial literacy when compared with bachelor studies (the latter group provided 7% more incorrect answers). Furthermore, the data indicated that men perform better than woman in terms of financial literacy (the latter group had 8% more incorrect answers).

Alwi et al. (2015) surveyed 70 business students at Malaysian Taylor's University (Finance and Banking, Economic and Finance, Accounting and Finance, Business Administration), to investigate factors that affect savings habits of Millennials / Generation Y. By means of regression analysis the authors found out that saving habits are largely affected by self-dominance (1.108, p=0.000), then by parental socialization (0.526, p=0.000) and peer influence (0.432, p=0.012) and least by financial literacy (0.136, p=0.000).

Additionally, when analysing previous research efforts, it is rather observable that there is a researchers' attempt to group and analyse financial literacy in smaller subsets and investigate predictors within these groups. One of the analyses that differentiates the research sample to high and low financial literacy individuals reveals that financial knowledge on financial concepts is the predictor for low financial literacy, meanwhile, gender and professional situation are the predictors for high financial literacy individuals (Duarte et al., 2021).

## 3. Research Methodology

### *3.1 Existing Research Practices and Limitations for Financial Literacy Measurement: Data Collection and Analysis Methods*

Financial literacy is prioritised, measured, and monitored at the institutional level: internationally largely by the OECD and nationally by banks. Cross country financial literacy measurements tend to be conducted not fully regularly and not fully comprehensively/exhaustively, i.e., having in mind the fact of incomplete/selective list of countries which is the case for this paper when different country sample based and, therefore, partly missing financial literacy data for Lithuania does not allow a methodologically correct comparison of its financial literacy development over time or across demographical groups (age, gender, etc.). By lacking a single methodology-based dataset this acts as a hurdle for a methodologically sound and systematic financial literacy research at a country level. The existing applicable institutional methodologies additionally combined with financial literacy research methodologies, derived from, or build on, the OECD techniques and collected on targeted samples, among which convenience sampling is taking the lead, can help us holistically evaluate the total picture in terms of time and population subgroups' perspectives.

In the financial literacy measurement most common practice, a questionnaire-based survey is employed. Even though some documents such as the financial literacy questionnaires published by the OECD International Network on Financial Education (counting from 2008) could globally serve as a basis for deriving individual national financial literacy questionnaires, in line with the Krechovská's (2015) observation, we can affirmingly state that financial literacy measurements have continuously been conducted by various institutions in different countries on diverse samples, thus raising the challenging issue of result comparability and framing financial literacy measurement as highly lacking a global approach in terms of global data collection instrument, methodology, and dataset as its outcome.

The aforementioned limitations create a financial literacy research 'lock-in' effect at a national level. This is observable when analysing the existing financial literacy scientific research during the recent years (Duarte et al., 2021; Ansar et al., 2019; Killins, 2017; Alwi et al., 2015; Krechovská, 2015), where one country focused financial literacy research is present. Moreover, the other salient methodological pattern of financial literacy body of research is its focus on the selectively targeted population that at the time of one's research efforts is under their higher education acquisition. The employed samples are composed of students enrolled at universities and colleges in bachelor and master study programs within either economics, business, and management fields or two opposed study fields – economic and non-economic ones (Duarte et al., 2021; Killins, 2017; Alwi et al., 2015; Krechovská, 2015), or of those who early in their lives earned their business experience (e.g., may have faced around or experienced themselves business bankruptcies) (Ansar et al., 2019). A term of a case study in terms of sampled students at a selected university is used by researchers too (Alwi et al., 2015). The expressed and applied preference for convenience sampling is justified by the concentration of young generation under 'one umbrella' and the relative ease of accessing them through mainly educational institutions that gather students from different geographical areas of an analysed country. Furthermore, the sample size of these research is a three-digit number independently on the country's population, among others, taking into consideration highly populated countries (e.g., such as Canada or Malaysia) (Ansar et al., 2019; Killins, 2017; Alwi et al., 2015). The limited sample research is restricted to a particular target, and, therefore, this restricts the generalization of existing research findings to other students from other educational institutions as well as to other remaining youth that does not belong to educational institutions and/or those other youth who has not been exposed to successful or unsuccessful business establishment and development cases.

The analysed studies tend not to present their questionnaires; however, researchers indicate that they construct and adjust their research instruments based on the publicly available OECD financial literacy measurement methodologies. Given the absence of a universally accepted conceptual definition of financial understanding and the qualitative nature of financial knowledge measuring (Muñoz-Céspedes et al., 2021), there is a space left for its contents structure and presentation in an interpretative and to some degree creative way, as it is a special type of questionnaires in the field of questionnaires which largely collects free choice and opinion-based data. The financial literacy surveys are more like academic knowledge examination tests than a typical survey, as similarly to, e.g., language proficiency tests, as they integrate questions, i.e., finance-related real-life situations, which have the only one correct answer as opposed to typical surveys which do not have correct answers. They check the financial literacy level of a respondent in terms of their financial knowledge, financial skills, and financial competences. The most common research practice is to integrate into financial literacy questionnaires the three fundamental financial literacy pillars: financial knowledge, financial behaviour, and financial attitude.

Considering data analysis methods, we find that the fundamental basis for financial literacy competence measurement is constructed by employing descriptive and inferential analysis, the latter of which mainly involves either analysis of variance or regression analysis and its elaborations to structural equation modelling (Duarte et al., 2021; Ansar et al., 2019; Killins, 2017; Alwi et al., 2015; Krechovská, 2015).

Considering the existing research practices and limitations for financial literacy measurement, we build our research methodology, including research instrument and methods, as described and elaborated below.

*3.2 Study Data and Sampling Process*

High-level financial expertise and financial management skills are crucial for all age groups. Nevertheless, it is especially important to educate school-age students as they will have to face key financial questions/decisions.

In this study, we surveyed a 16-26-year-old population to grasp which financial literacy competence level they have reached after they started living on their own. Respondents were recruited on social media channels, using convenience sampling. 426 qualified respondents (criteria: Lithuanian speaking; age; fully completed questionnaire) residing in Lithuania (Lithuania's population: 2 794 184 citizens), representing the total population of 343 287 of the chosen age category (Department of Statistics, Lithuania) were surveyed. Sample error calculated using Paniotto sample size formula (Gordiienko-Mytrofanova et al., 2018): 4.744% at 95% confidence interval (a criterion of sample error of 5% is applied requiring 384 respondents and adjusted based on a higher number of surveyed respondents than initially planned, i.e., 426).

The survey covered mostly citizens of the two largest Lithuanian cities: Vilnius – 47.5% and Kaunas – 12.7 %. Most participants were aged 19-26, having a secondary school or equivalent education, living on a "free" up to 400 EUR net monthly income from their families. 12.2% of the total sample indicated that they are students in the field of management, business administration or economics.

*3.3 Methodology*

Our research questionnaire builds upon the financial literacy measurement approach in line with OECD financial literacy measurement practiced methodologies (OECD, 2018; Kempson, 2009), including the questions that cover the recommended areas and, therefore, are to a high degree defined in their nature, and applying the suggested principles and techniques for processing and transforming the collected data to synthetised measures, i.e., quantitative expressions that could be employed for comparative goals within this and other studies. It follows the financial literacy measurement concept, underlining the measurement of financial knowledge and applicative skills thereof, and, thus, by means of simple and clear-cut, however, meaningful indicators providing a way of capturing the state, levels, and underlying patterns of financial literacy as well as leading to implicative reasons for concern. The questionnaire involved four question sets.

1. Testing/identifying one's financial knowledge level (Table 1 Q1.1-1.5): purchasing power related to inflation (Q1.1); investments, i.e., diversification of investment risks and relationship between risk and return (Q1.2, 1.4); interest rates, i.e., ability to calculate saving benefits and to differ between simple and compound interests (Q1.3, 1.5).

2. Identifying financial behaviour as a form of one's financial decisions (Table 2 Q2.1-2.5): 5-point scale (1-"Never", 2-"Seldom", 3-"Sometimes", 4-"Often", 5-"Always"). Financial behaviour is treated as very good if respondents choose "Often"/"Always" for Q2.1-2.4 and "Never"/"Seldom"/"Sometimes" for Q2.5. This means that individuals plan their household budget, i.e., fulfil their financial obligations, consider their every financial decision, follow their financial progress, income, and expenses, and set long-term financial goals.

3. Identifying one's financial attitude towards the sustainability principles application in financial service industry (Table 3 Q3.1-3.6): 5-point scale (1-"Not important at all", 5-"Extremely important"). This set tests one's sustainability literacy through a finance management perspective by clarifying the considerations that the youth base their decisions on whether to invest in one or another company, investment fund or pension fund.

4. Identifying one's key demographic/socio-economic characteristics, i.e., gender, age, education, income source, and income amount (Table 4 Q4.1-4.5).

The questions and answer options are detailed in the data analysis section.

The dataset for financial knowledge was transformed to a nominal-scale data with 1(True) and 0(False) values. Following the OECD guidelines for examining financial knowledge (OECD, 2018; Kempson, 2009), the number of total correct answers and the total average mean for Generation Y were calculated.

In line with the OECD methodologies (OECD, 2018; Kempson, 2009), the data for financial behaviour and financial attitude on sustainability were collected by using a 5-point scale. The scale for Q2.5 was reversed to align its values with other question negative-to-positive values, for calculating the individual means and the total average means for Generation Y.

Cronbach alpha for the construct of financial behaviour: 0.69; financial attitude towards application of sustainability principles in the financial service business: 0.88. Both values indicate reliability of these two constructs (a criterion of 0.7 is commonly used, but lower values close to it are accepted too).

The financial literacy aspects of the researched Lithuanian youth are evaluated in the context of other countries based on the previous OECD research by applying a comparative approach.

First, all three financial literacy perspectives of Generation Y are analysed by identifying the level of their financial knowledge, financial behaviour, and financial attitude on sustainability, and comparing the performance of Generation Y in Lithuania with performance in countries, analysed in previous research. Second, analysis of variance is conducted by applying Levene's test to check the homogeneity of variances and using independent samples T-test to check the differences of means in terms of demographic and socio-economic characteristics. Finally, the correlation analysis is performed to statistically test the relationships between all three financial literacy perspectives.

## 4. Data Analysis and Results

### *4.1 Financial Knowledge*

Financial knowledge is the key constituent of financial literacy – grasping simple financial processes one can evaluate financial service market, calculate, and understand cash flows, make proper financial decisions. High-level financial knowledge allows easier household budget arrangement, expense planning and future savings. A financially knowledgeable person can properly react to changing market environment and leading trends and understand simple international economics processes.

Financial knowledge is firstly and sometimes solely analysed financial literacy constituent. Oliver-Marquez et al. (2021) focused on the extensive research of financial knowledge in terms of three dimensions, i.e., inflation, compound interest and risk diversification, analysing a country subpopulations' gaps through an urban-rural perspective and additionally integrating moderating effects of other socioeconomic factors such as age, gender, and birthplace.

Knowledge about inflation can help young individuals understand international macroeconomic financial processes. Knowing the inflation mechanism, one can adjust and react to market changes. The conducted research illustrates that 75.6% of respondents correctly answered when asked about their understanding of how inflation impacts purchasing power (Table 1 Q1.1). The youth is more literate about the relationship between inflation and purchasing power as compared to the overall population (67% in 2016); conversely, in an international context (30 countries) Lithuania's youth is ranked 18th, overtaking only the Netherlands from the Western Europe countries. Even though the inflation rates of Lithuania during the survey period were 2.5%, considering its citizens experienced higher inflation previously, this is aligned with a statement that people are more knowledgeable about inflation if their countries have faced it recently (Lusardi and Mitchell, 2011).

Table 1. Survey questions and research results identifying the level of Generation Y financial knowledge

| No. | Question | Purpose | Answer options | Answers distribution, % |
|---|---|---|---|---|
| 1.1 | Deposit annual interest rate: 1%. Annual inflation: 2%. How many of the same goods/services can you buy with the same amount in 1-year? | Test understanding of inflation impact on purchasing power. | More than today | 17.37 |
| | | | The same as today | 7.04 |
| | | | *Less than today* | *75.59* |
| 1.2 | "Risk of investment to stock market can be reduced by investing to a wide range of company stock shares." True/false? | Test familiarity with benefits of investment diversification. | *True* | *63.38* |
| | | | False | 18.78 |
| | | | Do not know | 17.84 |
| 1.3 | Deposit: 100 EUR with 2% interest rate for 5-years. How much will you have | Test skills to calculate savings compound interests. | *>100 EUR* | *55.87* |
| | | | 110 EUR | 40.14 |
| | | | <100 EUR | 3.99 |

| | | | | |
|---|---|---|---|---|
| | accumulated in 5-years? | | | |
| 1.4 | "Investment with a high return has a high risk." True/false? | Test understanding of relationship between risk and return. | *True* | *62.44* |
| | | | False | 15.49 |
| | | | Do not know | 22.07 |
| 1.5 | Will you earn more with a term deposit with simple or compound interests? | Test understanding of difference between simple and compound interests. | The same in both cases | 4.93 |
| | | | More with simple interests | 10.33 |
| | | | *More with compound interests* | *84.51* |

The survey questions compiled based on OECD and this article authors' research results.

*In *Italic* font: the part of correctly answered respondents

Our results show that 40.5% of respondents do not invest their income at all. Knowledge about investment possibilities can provide a huge potential to accumulate capital and open opportunities for a broader spectrum of financial decisions. 63.4% of respondents correctly answered about the benefits of investment diversification (Table 1 Q1.2). As compared to the population of Lithuania (75% correct), the Lithuanian youth is significantly less familiar with investing/investments. Knowledge about investment risk and return ratio is significant to the youth for understanding the investment system and grasping its risks; 62.4% correctly answered this question (Table 1 Q1.4). This result is the lowest in the international context (30 countries) (Table 2).

Table 2. The world level of adult financial knowledge

| **Country** | **Inflation definition** | **Diversification** | **Interest calculation plus principal** | **Risk&return** | **Compounding over 5 years actual response** |
|---|---|---|---|---|---|
| | **Q1** | **Q2** | **Q3** | **Q4** | **Q5** |
| Albania | 75 | *65* | 48 | *77* | 28 |
| Austria | *85* | 62 | *68* | *86* | 44 |
| Belarus | 67 | *68* | 28 | *66* | 7 |
| Belgium | *80* | 56 | *63* | *83* | 50 |
| Brazil | 58 | *77* | 50 | *84* | 30 |
| British Virgin Islands | *78* | 50 | 23 | *67* | 32 |
| Canada | *92* | *68* | *58* | *86* | 56 |
| Croatia | 74 | *66* | *62* | *69* | 33 |
| Czech Republic | 73 | *69* | *58* | *71* | 34 |
| Estonia | *88* | *65* | *79* | *85* | 43 |
| Finland | 58 | *66* | *79* | *89* | 58 |
| France | *87* | *75* | *57* | *87* | 54 |
| Georgia | *85* | 63 | 51 | *80* | 46 |
| Hong Kong | *97* | *74* | *79* | *96* | 58 |
| Hungary | *89* | *65* | 53 | *84* | 33 |
| Jordan | *77* | *80* | 43 | *87* | 22 |
| Korea | *88* | *84* | *68* | *89* | 58 |
| Latvia | *86* | *64* | *72* | *82* | 48 |
| **Lithuania** | **67** | *75* | ***68*** | ***75*** | **41** |
| Malaysia | 75 | 48 | 35 | *73* | 33 |
| Netherlands | 74 | 53 | *76* | *73* | 61 |
| New Zealand | *91* | *68* | *64* | *88* | 60 |

| | | | | | |
|---|---|---|---|---|---|
| Norway | 74 | 59 | *80* | *86* | 65 |
| Poland | 69 | 56 | *61* | *77* | 30 |
| Portugal | *87* | *73* | *61* | *82* | 41 |
| Russia | 67 | 41 | 48 | *78* | 46 |
| South Africa | *86* | 55 | 42 | *76* | 36 |
| Thailand | 63 | 42 | 53 | *86* | 20 |
| Turkey | *84* | *74* | 54 | *90* | 32 |
| UK | *80* | 52 | *57* | *74* | 52 |
| **Average, all countries** | ***78*** | **64** | ***58*** | ***81*** | **42** |
| **Average, OECD countries** | ***81*** | ***65*** | ***65*** | ***83*** | **48** |
| **Lithuania 16-26, (this article authors' data)** | **Q1.1** | **Q1.2** | **Q1.3** | **Q1.4** | **Q1.5** |
| | **76** | **63** | **56** | **62** | **85** |

Compiled based on OECD and this article authors' research results.

*In *Italic* font: the data of countries above the average of the researched population

42.8% answered correctly both questions about investments (Table 1 Q1.1, 1.4), suggesting that young Lithuanians do not care much about their financial literacy. We can state that those, who have acquired secondary education or are studying at higher education schools, do not understand much about investment. Making them familiar with the investment-based opportunities would give them more possibilities and motivation to invest/accumulate capital and to plan budget.

Understanding the mechanisms and principles of interests is essential to grasp benefits when saving and borrowing money. 55.9% correctly answered about interests in 5-years saving (Table 1 Q1.3). For comparison, the total Lithuanian population was better by 11 percentage points, whereas in the international context (30 countries) Lithuania exceeds only less economically developed countries. The compound interests answer (Table 1 Q1.5) was correct for 84.5% of respondents. However, only 49.4% answered both questions correctly (Table 1 Q1.3, 1.5). This indicates that the Lithuanian youth knows the difference between simple and compound interests, however, their skills to calculate compound interests or to envisage approximately their amount are insufficient.

Research data show that 51.2% answered correctly four out of five questions representing their financial knowledge; 18.8% answered correctly all five questions. Considering that the questions were simple and in fact focused on checking basic financial knowledge, the correct question percentage is relatively low.

*4.2 Financial Behaviour*

Financial literacy is both one's baggage of financial knowledge, skills, and competencies. Analysis of behavioural particularities can show how and how often the Lithuanian youth completes daily financial functions and operations, and how they apply their acquired financial knowledge in practice. A household budget is a tool that should help avoid leading to deprivation, saving, and following financial progress.

The data analysis on financial behaviour of the sampled population allows stating that young Lithuanians are rather focused on short-term perspective regarding their personal finance management (Table 3 Q2.1-2.5). 64.3% indicated that they "Always" pay for the daily living services (accommodation, internet, etc.) and carry out their financial obligations (e.g., credit payments) on time; 89.9% indicated "Always" /"Often", confirming their responsible behaviour towards living expenses and financial obligations (Table 3 Q2.4). When directly asked about setting and following their long-term financial goals, only 39.2% of respondents indicated "Often"/"Always" and only 14.3% declared "Always"; this indicates that the Lithuanian youth lacks financial maturity in defining and putting effort on achieving their long-term financial goals (Table 3 Q2.2). However, 86.6% think about the future when spending money; it is "Never"/"Seldom"/"Sometimes" that they do not think about future and live merely in this day (Table 3 Q2.5). When young Lithuanians go shopping, the majority knows how much they can spend: 75% indicated "Often"/"Always", confirming their inclination not to make spontaneous spendings and to follow their budget (Table 3 Q2.1). In contrast, when asked about the application of active daily personal finance management means, merely 47.2% indicated "Often"/"Always" with 18.1% of those who "Always" actively follow their every financial action, signifying low involvement of the Lithuanian youth to their financial budget tracking (Table 3 Q2.3).

Table 3. Survey questions (statements) and research results identifying Generation Y financial behaviour

| QNo. | Question | Purpose | Answers distribution, % | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Never | Seldom | Some-times | Often | Always | Mean / Standard deviation |
| | | | 1 | 2 | 3 | 4 | 5 | |
| 2.1 | When shopping, I know how much I can spend. | Identify spending habits (spontaneous or not), compliance with planned budget. | 2.58 | 6.34 | 15.96 | *41.31* | *33.80* | 3.97 / 0.99 |
| | | | | | | *75.11* | | |
| 2.2 | I define long-term financial goals and put effort on achieving them. | Identify saving experience. | 6.57 | 19.95 | 34.27 | *24.88* | *14.32* | 3.20 / 1.12 |
| | | | | | | *39.20* | | |
| 2.3 | I actively follow my every financial action. | Identify budget tracking behaviour. | 4.69 | 14.55 | 33.57 | *29.11* | *18.08* | 3.41 / 1.09 |
| | | | | | | *47.19* | | |
| 2.4 | I pay for the received services (e.g., accommodation rent, internet services) and carry out my financial obligations (e.g., credit payments) on time. | Identify financial responsibility and obligations behaviour. | 2.11 | 1.41 | 6.57 | *25.59* | *64.32* | 4.49 / 0.85 |
| | | | | | | *89.91* | | |
| 2.5 | When spending money, I do not think about the future. I live in this day. | Identify goal-oriented spending habits (spontaneous or not). | *23.71* | *39.44* | *23.47* | 9.86 | 3.52 | 2.30 / 1.05 |
| | | | | *86.62* | | | | |

The survey questions compiled based on OECD and this article authors' research results.

*In *Italic* font: part of the respondents with positive financial behaviour

23.5% of the respondents indicated "Often"/"Always" to Q2.1-2.4 and "Seldom"/"Never" to Q2.5; they can be classified as having positive financial behaviour. 23.9% can be characterised as having rather positive financial behaviour, as they selected "Often"/"Always" for Q2.1-2.4. The cumulative sum of these percentages presents that 47.4% of the Lithuanian youth to a certain level tracks their financial behaviour in terms of their household budget.

Navickas et al. (2014) conducted a research of Lithuanian youth financial literacy; their results show that only about 32% of the sampled population track their budget. Our research shows that some of the Lithuanian youth, who track their financial budget, is 15.4 percentage points higher than it was in 2014. Nevertheless, this allows stating that the Lithuanian youth is not sufficiently familiar with the personal/household budget definition and personal/household budget management, whose concept was decomposed in Q2.1-2.5.

In the global context, the score of the Lithuanian youth is overtaken by Poland (54%), Ireland (54%), Albania (59%), and Malaysia (74%) (Atkinson and Messy, 2012). Countries, performing the best in their financial knowledge, e.g., Norway or Germany, are the ones with the smallest part of the population tracking their household budget (33% and 35%, respectively) (di Salvatore et al., 2017).

*4.3 Attitude towards the application of sustainability principles in the financial service business*

The business world is increasingly surrounded by consciousness of developing and doing sustainable business or employing sustainability principles in its performance. In line with this, the sampled population was surveyed on the application of sustainability principles in the financial service business that may result in financial decisions when considering purchasing investment management services.

Research data shows that the Lithuanian youth rather cares of sustainability when choosing their finance manager: the importance of application of the employed sustainability principles range from 4.19 to 3.44 in a 5-point scale (Table 4 Q3.1-3.6). The aspect of transparent activity and anticorruption gained the highest value when assessed by the respondents, followed by employee safety care, healthcare, and education (mean values: 4.19; 4.10) (Table 4 Q3.1, 3.3). The relatively least cared for issue was the company's profit given to expansion of its local community activities and voluntarism encouragement (mean value: 3.44) (Table 4 Q3.6).

Table 4. Survey questions (statements) and research results on the importance of the application of sustainability principles in the financial service business for Generation Y who chose their finance management service provider, i.e., "how important to you are each of the following areas of engagement/influence that fund managers can have on companies they invest in?"

| **QNo.** | **Question** | **Global all ages / Global, age 18-24** | **Lithuania, age 16-26** | | | | | | **Lithuanian youth performance compared to the global all ages context / compared to the global age 18-24** |
|---|---|---|---|---|---|---|---|---|---|
| | | **Mean** | | **Answers distribution, %** | | | | | |
| | | **SHRODERS, 2018** | **This article authors, 2019** | **5-point scale from 1 "Not important at all" to 5 "Extremely important"** | | | | | |
| | | | | **1** | **2** | **3** | **4** | **5** | |
| 3.1 | Transparent activity and anticorruption | 3.95 / <u>3.50</u> | *4.19* | 4.46 | 3.05 | 9.86 | 33.80 | 48.83 | +0.24 / +0.69 |
| 3.2 | Use of renewable energy and pollution reduction | 3.80 / <u>3.40</u> | 3.89 | 3.05 | 6.34 | 19.95 | 39.67 | 30.99 | +0.09 / +0.49 |
| 3.3 | Employee safety care, healthcare, and education | 3.70 / <u>3.40</u> | *4.10* | 3.29 | 3.76 | 13.15 | 39.67 | 40.14 | +0.40 / +0.70 |
| 3.4 | Climate change | 3.65 / <u>3.40</u> | 3.72 | 4.93 | 6.57 | 27.93 | 32.86 | 27.70 | +0.07 / +0.32 |
| 3.5 | Equal rights and diversity encouragement at a workplace | <u>3.35</u> / <u>3.25</u> | 3.90 | 4.23 | 6.34 | 18.78 | 36.38 | 34.27 | +0.55 / +0.65 |
| 3.6 | A part of earned profit is given to local community activity expansion and voluntarism | - | <u>3.44</u> | 6.10 | 10.56 | 31.92 | 35.92 | 15.49 | - |

| | |
|---|---|
| | encouragement |

Compiled based on SHRODERS (2018) and this article authors' research results.

*In *Italic* font: mean values >4.00; in <u>Underlined</u> font: mean values ≤3.50

As compared to research data of SHRODERS (2018) in the global context, the Lithuanian youth does not differ much; however, the mean values are relatively higher, especially in assessing equal rights and diversity encouragement at a job place and employee safety, care, healthcare, and education (+0.55 and +0.40, respectively) (Table 4 Q3.5, 3.3). This might be related to the respondents' age, as the young people are more familiar with world trends and are more involved in solving social problems than the elder ones.

Another angle of comparative analysis allows us grasping the attitude of the Lithuanian youth (age 16-26) and the global youth (age 18-24) towards the application of sustainability principles in the financial service business. SHRODERS (2018) documents a relatively low concern towards this issue of those aged 18-24 when measured at the global level: the mean values of all five aspects range from 3.25 to 3.50 (Table 4 Q3.1-3.5). As compared to the world youth, the Lithuanians have considerably higher expectations for employment of sustainability principles in the financial service business. This research presents values ranging from +0.32 to +0.70 units higher (Table 4 Q3.1-3.5), depicting the remarkably stronger concern for application of sustainability principles in a financial service provider such as employee safety care, healthcare, and education, transparent activity and anticorruption, and equal rights and diversity encouragement at a workplace (+0.70, +0.69, and +0.65, respectively) (Table 4 Q3.3, 3.1 and 3.5).

The overall data analysis of the individuals' attitude on the application of sustainability principles in the financial service business indicates that the Lithuanian youth is, more than the rest of the world and considerably more than the youth on average in the world, concerned about the sustainability issues in terms of the defined key areas of engagement/influence that fund managers can have on companies they invest in. Young Lithuanians relate financial sustainability largely with the holistically fair, transparent, bribery-free, corruption-free, and fraud-free performance of the financial service provider, where the treatment of the company's workforce is largely concerned, including safety, healthcare, education, diversity, and equal-right concerns. The global environmental sustainability issues such as a use of alternatives such as renewable energy to save scarce global resources, pollution reduction and climate change are of a slightly smaller and more secondary concern to the Lithuanian youth.

*4.4 Financial Literacy of Generation Y in the Light of Demographical and Socio-Economic Characteristics*

Next, we conducted a testing for differences in means. We presumed that the financial literacy of Generation Y, measured through perspectives of financial knowledge, financial behaviour, and financial attitude on sustainability, might be different depending on their demographical and socio-economic characteristics (Table 5).

Table 5. Survey questions (statements) and research results identifying financial literacy perspectives of Generation Y through the demographical and socio-economic characteristics

| **Q No.** | **Question** | **Options** | **Sample distribution** | | **Financial knowledge (Mean 3.42)** | | **Financial behaviour (Mean 3.76)** | | **Financial attitude on sustainability (Mean 3.87)** | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | **Respondents** | **%** | **Mean** | **Sig. Sig.(2-tailed)*** | **Mean** | **Sig. Sig.(2-tailed)*** | **Mean** | **Sig. Sig.(2-tailed)*** |
| 4.1 | Gender | Male | 128 | 30.05 | 3.76 | .259 | - | - | 3.47 | .002 |
| | | Female | 298 | 69.95 | 3.27 | .000 | - | - | 4.05 | .000 |
| 4.2 | Age | 16-18 | 112 | 26.29 | - | - | - | - | - | - |
| | | 19-26 | 314 | 73.71 | - | - | - | - | - | - |
| 4.3 | Education | Secondary or equivalent | 281 | 65.96 | 3.33 | .413 | - | - | 3.95 | .843 |
| | | Higher education, including | 145 | 34.04 | 3.59 | .0.34 | - | - | 3.73 | .010 |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | unfinished degree | | | | | | | | |
| 4.4 | Income source | “Free” income from parents, relatives, etc. | 265 | 62.21 | - | - | - | - | 3.95 | .061 |
| | | Own income earnings: salary, scholarship, dividends, etc. | 161 | 37.79 | - | - | - | - | 3.75 | .013 |
| 4.5 | Monthly income, EUR | ≤400 | 331 | 77.70 | - | - | - | - | 3.92 | .450 |
| | | >400 | 95 | 22.30 | - | - | - | - | 3.72 | .045 |

*Levene’s test for equality of variances (Sig.); if Sig.>0.05, then T-test for equality of means, Equal variances assumed (Sig.(2-tailed)); if Sig.≤0.05, then T-test for equality of means, Equal variances not assumed (Sig.(2-tailed)).

**Empty cells “–”: no differences in means were found when testing the presented data categories under a given financial literacy perspective

We found out that there exists a difference between genders in evaluating the financial knowledge construct: males statistically significantly perform better than females (mean values: 3.76 and 3.27, respectively, based on Levene’s test for equality of variances, Sig.=.251, Equal variances assumed, Sig.(2-tailed)=.000, based on t-test for equality of means). Furthermore, we found out that there exists a difference between genders in evaluating the construct of financial attitude towards the application of sustainability principles in a financial company, where females are statistically significantly more positive than males (mean values: 4.05 and 3.47, respectively, based on Levene’s test for equality of variances, Sig.=.002, Equal variances not assumed, Sig.(2-tailed)=.000, based on t-test for equality of means).

Also, we found some differences between Generation Y individuals when looking at the educational perspectives. Our research shows that the mean financial knowledge at the secondary school and at a high education institution are unequal: highly-educated individuals possess slightly better knowledge than those educated at a secondary school (mean values: 3.59 and 3.33, respectively, based on Levene’s test for equality of variances, Sig.=.413, Equal variances assumed, Sig.(2-tailed)=.034, based on t-test for equality of means); however, financial attitude on sustainability are slightly better at a secondary school than at a high-education institution (mean values: 3.95 and 3.73, respectively, based on Levene’s test for equality of variances, Sig.=.843, Equal variances assumed, Sig.(2-tailed)=.010, based on t-test for equality of means).

Another finding is the income source difference among Generation Y. The mean financial attitude on the application of sustainability principles in the finance service business are unequal in terms of individuals income source: the attitude towards employment of sustainability principles is more positive for those who get “free” income from parents, relatives, etc. than for those who get income in one or another way in a form earnings in exchange of their own work/study/business effort done (a salary, scholarship, dividend, etc.) (mean values: 3.95 and 3.75, respectively, based on Levene’s test for equality of variances, Sig.=.061, Equal variances assumed, Sig.(2-tailed)=.013, based on t-test for equality of means).

Finally, our research documents unequal financial attitude towards the application of sustainability principles in the finance service business with respect to the amount of income. The mean of the attitude on sustainability is more positive for those Generation Y whose monthly net income does not exceed 400 EUR as compared to those with a higher monthly income (mean values: 3.92 and 3.72, respectively, based on Levene’s test for equality of variances, Sig.=.450, Equal variances assumed, Sig.(2-tailed)=.045, based on t-test for equality of means).

We also tested all three constructs for differences of means considering the age subcategories and can conclude that our research does not provide sufficient evidence to suggest that the financial literacy perspectives between different age groups are different. However, if we look at a larger age scale sampled research, we may observe that all three constructs of financial literacy with every subsequent higher age group (20-30, 30-40, and 40-50) acquire higher values within each of these constructs, where financial behaviour and financial attitude variation among age groups are statistically significant at .05 level (Das and Dutta, 2014). The general level of financial literacy competence increases over time in parallel with one's lifetime (<30, 31-44, 45-64) too (Kadoya and Khan, 2020).

Our research allows suggesting that financial attitude on sustainability differs between such demographical/socio-economic subcategories as gender, education, income source, and monthly income, while financial knowledge differs between gender and education subcategories; however, it provides no sufficient evidence to state that financial behaviour differs between different demographical/socio-economic subcategories (Table 5).

*4.5 The Relationship Between Financial Knowledge, Financial Behaviour, and Financial Attitude on Sustainability*

Finally, we checked the statistical relationships between our three financial literacy constructs.

The correlation testing conducted on our sampled data does not demonstrate relationships between financial knowledge and financial behaviour nor between financial knowledge and financial attitude on sustainability (in both cases Sig.(2-tailed)>.05).

However, the statistical testing identifies an existing statistically significant relationship between Generation Y financial behaviour and financial attitude on sustainability (0.21, Sig.(2-tailed)=.000). In social science, such a correlation coefficient indicates a moderate dependency and consistency between these variables. The more responsibly personal finance management behaviour is carried out by a Generation Y millennial, the more sustainability conscious attitude in terms of the application of sustainability principles in the finance service business is brought into concern, and vice versa.

We observe that our result is largely consistent with similar research efforts to identify the linkage among the three financial literacy competence pillars on a larger age scale of sampled respondents. Das and Dutta (2014) similarly identified a clear – positive and strong relationship between financial behaviour and financial attitude (.719, Sig.(2-tailed)=.01). Moreover, their research, in line with ours, does not confirm statistically significant relationship between financial knowledge and financial behaviour, however, differently from ours, indicates a negative moderate strength relationship between financial knowledge and financial attitude (-.226, Sig.(2-tailed)=.05).

The undefined correlation between financial knowledge and financial behaviour may be explained by the insufficient/low financial knowledge level, which consequently does not induce its processing and application as could be observed in individuals' financial behaviour actions and operations. Contrarily, it may also be explained by the high level of individuals' financial knowledge at the theoretical level when the knowledge for some reason is not employed in practice. These situations may occur and be caused by a postponed decision, as long-term perspective financial management seems to have no strict deadline, contrary to short-term financial management responsibilities and obligations.

The undefined correlation between financial knowledge and financial attitude on sustainability may be similarly explained by the individuals' either insufficient/low financial knowledge level or insufficient/low sustainability concern, both at a general level and in relation to specifically their personal finance management choices. Conversely, individuals may have such a high-level financial knowledge or expertise that they solely focus on the personal finance management costs-benefits criteria and their justified match with the high field competence of a finance service provider, in which the application of sustainability principles by a finance service provider does not play an interconnected role in their financial decision-making. We suppose that sustainability issues might be ignored by individuals with a high financial knowledge, whose decisions are measured in a traditional way. However, the application of sustainability issues in the financial world might be of concern to global thinkers and initiativists.

## 4. Key Findings and Discussion

As compared to the previous research results, our results in relation to financial knowledge reveal a moderate, however, improving situation of Generation Y in Lithuania, where males are significantly more financially knowledgeable than females, and where financial knowledge at the higher education schools is slightly higher than at the secondary schools, but which at both institutional levels requires higher performance. However, as compared to other countries, the general financial knowledge level of Generation Y Lithuanians is relatively low in general and specifically lower than in the other developed OECD countries; on the one hand, Generation Y is better than the overall country's population at understanding the impact of inflation on purchasing power and exceptionally better than the other OECD countries in understanding the difference between simple and compound interests, but on the other hand, they are less knowledgeable in understanding a range of important issues such as investment diversification benefits, risk-return relationship, and in compound interests calculation skills.

Our research results regarding financial behaviour unfold the rather positive, responsible personal finance management skills of Generation Y. They tend to pay for their daily living services such as accommodation, internet services and financial obligations such as credit payments on time. They are not inclined towards spontaneous spendings. However, their involvement in personal or household budget finance tracking is low and passive; most of them do not continuously follow their financial actions. Their focus on short-term rather than long-term perspectives in their personal finance management allows emphasizing their lack of financial maturity. They focus on the daily living expenses and financial obligations within hand reach without setting and following their long-term financial goals. Generation Y is more than the overall country's population involved in tracking their financial budget and they perform well in the context of other countries, yet they are not still sufficiently familiar with the personal and household budget definition and personal and household budget management.

Our research results regarding financial attitude towards the application of sustainability principles in the finance service business in a possible investment situation indicate that Generation Y gives importance to so-called sustainable investments, i.e., when finance/investment management service providers such as pension funds, investment funds, insurance companies, etc. apply sustainability principles in their activities. The comparison of our results with similar research conducted in other countries worldwide provides evidence that, at both global context of all age groups and of age 18-24, the Lithuanian youth cares more about their investments being managed by companies whose performance is based on the application of sustainability principles. The application of sustainability principles such as finance service provider's transparent activity and performance together with employees physical, mental, and emotional well-being take the lead. Our research proves the higher financial sustainability concern of females over males, secondary school students over higher education school students, "free" income receivers over income earners, and those with less than 400 EUR net monthly over higher income earners.

When measuring the relationship among the three financial literacy competence pillars, we notice that, similarly to Das and Dutta (2014) study, financial knowledge appears as a component that is independent on the other two ones. However, Das and Dutta (2014) with a 100-respondent, aged up to 50, clustered sample of one Indian district document a strong positive relationship between financial behaviour and financial attitude (.719, (Sig.(2-tailed)=.01)). Similarly, we found out that Generation Y financial attitude towards the application of sustainability principles in the finance service business goes in parallel with its financial behaviour. Our research contributes with a specific concern of measuring millennials' financial attitude towards sustainability and in this case its relationship with financial behaviour is consistent with the findings of Das and Dutta's (2014) research that does not focus on financial sustainability issue: we found out the positive moderate strength correlation. The growth of personal finance management and planning skills and positive financial behaviour leads to a higher concern of financial sustainability, and a more positive attitude towards and choice of financial service providers, who apply sustainability principles in their performance, encourage a more conscious financial behaviour. This finding and our research holistically allows placing the two concepts of individuals' well-being – financial literacy and sustainability literacy – at the heart of a closer relationship and calls for further research on sustainable finance literacy from both conceptual and applicative viewpoints.

As for previous studies, we found out that Kadoya and Khan (2020) similarly aimed at getting more rigorous insights on the relationship between financial literacy and demographic and socio-economic variables. Our research supports a few findings of their research. Their study, based on a sample of 25000 individuals in Japan, focused on the analysis of the demographic and socio-economic factors that justify financial literacy by segregating it into financial knowledge, financial behaviour, and financial attitude. Our findings confirm that of Kadoya and Khan (2020) by providing evidence that males show better results than females in financial knowledge, though, females perform better than males regarding financial attitude. Also, our research supports Kadoya and Khan's (2020) research in confirming the finding that education is positively related with financial knowledge; however, contrary to their results, ours show a negative relation with financial attitude. Based on our findings, we suppose that the youngest subgroup of Generation Y is more global, welfare-caring, sustainability knowledgeable, and sustainability conscious in general and expect that financial service providers simply take part in solving sustainability issues. Conversely, the older subgroup of Generation Y prioritises traditionally acknowledged approaches of choosing a financial service provider when the financial expertise of the provider is valued over other possible factors.

## 5. Concluding Words

The assessment of our research results allows providing the following recommendations for both finance literacy policy makers and financial service providers. First, it is purposeful to strengthen the skills of personal finance literacy and personal finance planning of the youth in terms of financial knowledge in both the secondary and higher education, with a higher concern for educating the female category, e.g., in female-concentrated study programmes. Second, to improve financial behaviour and to achieve an increased level of financial literacy of young people, it is crucial to strengthen their finance planning skills by extending them to a long-term finance planning horizon, and to induce active life-long budget tracking skills. Third, finance and investment management service providers should align their performance, especially with a concern to transparency and employees' wellbeing, in line with the more sustainability-knowledgeable youth and integrate sustainability principles in their performance activities, because Generation Y, as our research of the Lithuanians aged 16-26 documents, besides investment return, draws a considerable attention on sustainability aspects of a financial company when choosing saving and investment services.

In line with the conceptual evolution of financial literacy understanding, the future research should consider combining the academic approach with a more informal approach, in this way exploring and supplementing the field with the perception of financial literacy through observations of its informal discussions and usage, e.g., in social networks, through conversation threads, feelings, sentiments, emotions, trust, etc., as financial decisions are not always built on knowledge, logic, reasoning, and analysis. Besides, emotions, heuristics, prejudice, personal values, social pressure, and other subjective evaluation aspects come into play which call for inter- and multi- disciplinary studies. Muñoz-Céspedes et al. (2021) initiate a new type of research effort focusing on a more informal context and a natural language analysis, as their research driving force is the recognition that financial literacy requires not only knowledge and understanding of financial products, but also "developing positive attitudes and the ability to identify and manage human tendencies that, at times, undermine the achievement of our financial plans and objectives". Therefore, financial literacy concept acquires a less rationally defined, however, more opened, and elastic shape in terms of its set of explanatory variables and their analysis' approaches.

## References

Almenberg, J., & Säve-Söderbergh, J. (2011). Financial literacy and retirement planning in Sweden. *Journal of Pension Economics and Finance, 10*(4), 585-598.

Aprea, C., & Wuttke, E. (2016). Financial literacy of adolescents and young adults: setting the course for a competence-oriented assessment instrument. In C. Aprea, et al. (Eds.), *International Handbook of Financial Literacy* (pp. 397-414). Springer: Singapore. Retrieved from https://link.springer.com/content/pdf/10.1007%2F978-981-10-0360-8.pdf

Atkinson, A., & Messy, F. A. (2012). Measuring financial literacy: results of the OECD / International Network on Financial Education (INFE) pilot study. *OECD Working Papers on Finance, Insurance and Private Pensions, 15*, OECD Publishing. Retrieved from https://financnigramotnost.mfcr.cz/assets/cs/media/PSFV_Studie_2010_Measuring-financial-literacy-results-of-the-OECD-INFE-pilot-study-EN.pdf

Beal, D. J., & Delpachitra, S. B. (2003). Financial literacy among Australian university students. *Economic papers, 22*(1), 65-78.

Bernardes, J. P., Ferreira, F., Dinis Marques, A., & Nogueira, M. (2019). "Do as I say, not as I do" – a systematic literature review on the attitude-behaviour gap towards sustainable consumption of Generation Y. *IOP Conference Series: Materials Science and Engineering, 459*, 012089. Retrieved from https://iopscience.iop.org/article/10.1088/1757-899X/459/1/012089/pdf

Carroll, A. B. (1999). Corporate social responsibility: evolution of a definitional construct. *Business & Society, 38*(3), 268-295.

Das, N., & Dutta, H. (2014). Financial literacy in rural Assam: a reality check on MFIs' clients with special reference to Sonitpur Dsitrict of Assam. *Conference UGC SAP DRS*, National Seminar on "Managing rural development in North East India: perspectives, policies and experiences", November 2014, India.

DELOITTE (2017). Apprehensive millennials: seeking stability and opportunities in an uncertain world. *The 2017 Deloitte Millennial Survey*. Retrieved from https://www2.deloitte.com/content/dam/Deloitte/global/Documents/About-Deloitte/gx-deloitte-millennial-survey-2017-executive-summary.pdf

di Salvatore, A., Franceschi, F., Neri, A., & Zanichelli, F. (2017). *Measuring the financial literacy of the adult population: the experience of the Bank of Italy*. Retrieved from https://www.bis.org/ifc/publ/ifcb47f.pdf

Donath, L., Boldea, M., & Popa, A. M. (2020). Nudging generation Y towards education for sustainability. In S. Sava, et al. (Eds.), Collective capacity building: shaping education and communication in knowledge society. *International Issues in Adult Education, 30*, 123-136.

Duarte, P., Silva., S., Ramalho Feitosa, W., & Sebastião, R. (2021). Are business students more financially literate? Evidence of differences in financial literacy amongst Portuguese college students. *Young Consumers, EarlyCite*, 18.

Fornero, E., & Monticone, C. (2011). Financial literacy and pension plan participation in Italy. *Journal of Pension Economics and Finance, 10*(4), 547-564.

Frame, W. S., Wall, L. D., & White, L. J. (2018). Technological change and financial innovation in banking: some implications for fintech. *Working paper, 2018-11, Federal Reserve Bank of Atlanta*, GA.

Gordiienko-Mytrofanova, I., Pidchasov, Y., Sauta, S., & Kobzieva, I. (2018). The problem of sample representativeness for conducting experimental and broad psychological research. *Psycholinguistics, 23*(1), 11-46.

Huston, S. J. (2010). Measuring financial literacy. *Journal of Consumer Affairs, 44*(2), 296-316.

Kadoya, Y., & Khan, M. S. R. (2020). Financial literacy in Japan: new evidence using financial knowledge, behaviour, and attitude. *Sustainability, 12*(9), 3683.

Kempson, E. (2009). Framework for the development of financial literacy baseline surveys: A first international comparative analysis. *OECD Working Papers on Finance, Insurance and Private Pensions, 1,* OECD Publishing.

Krechovská, M. (2015). Financial literacy as a path to sustainability. *Trendy v podnikání – Business Trends, 2*/2015, 1-12.

Lagoarde-Segot, T. (2019). Sustainable finance. A critical realist perspective. *Research in International Business and Finance, 47(January)*, 1-9.

Lagoarde-Segot, T., & Paranque, B. (2017). Sustainability and the reconstruction of academic finance. *Research in International Business and Finance, 39*(Part B), 657-662.

Lusardi, A., & Mitchell, O. S. (2011). Financial literacy around the world: an overview. *Working paper, 17107, National Bureau of Economic Research*, MA.

Lusardi, A., Mitchell, O. S., & Curto, V. (2010). Financial literacy among the young. *The Journal of Consumer Affairs, 44*(2), 358-380.

Lusardi, A., & Scheresberg, C. d. B. (2013). Financial literacy and high-cost borrowing in the United States. *Working Paper, 18969, National Bureau of Economic Research*, Cambridge, MA. Retrieved from https://www.nber.org/papers/w18969.pdf

Mandell, L., & Schmid Klein, L. (2009). The impact of financial literacy education on subsequent financial behavior. *Journal of Financial Counseling and Planning, 20*(1), 15-24.

Marcolin, S., & Abraham, A. (2006). Financial literacy research: current literature and future opportunities. In P. Basu, G. O'Neill, & A. Travaglione (Eds.), *Proceedings of the 3rd International Conference on Contemporary Business*, Leura NSW, 21-22 September 2006, Charles Stuart University, Faculty of Commerce, Australia.

Muñoz-Céspedes, E., Ibar-Alonso, R., & de Lorenzo Ros, S. (2021). Financial literacy and sustainable consumer behavior. *Sustainability, 13*(16), 9145.

Navickas, M., Gudaitis, T., & Krajnakova, E. (2014). Influence of financial literacy on management of personal finances in a young household. *Verslas: teorija ir praktika / Business: theory and practice, 15*(1), 32-40.

OECD (2016). *OECD/INFE International Survey of Adult Financial Literacy Competencies*. OECD, Paris. Retrieved from www.oecd.org/finance/OECD-INFE-International-Survey-of-Adult-Financial-Literacy-Competencies.pdf

OECD (2017). *PISA 2015 Results (Volume IV): Students' Financial Literacy*. PISA, OECD Publishing, Paris. Retrieved from http://dx.doi.org/10.1787/9789264270282-en

OECD (2018). *OECD/INFE Toolkit for measuring financial literacy and financial inclusion*. OECD, Paris. Retrieved from https://www.oecd.org/financial/education/2018-INFE-FinLit-Measurement-Toolkit.pdf

OECD (2020). *PISA 2018 Results (Volume IV): Are Students Smart about Money?* PISA, OECD Publishing, Paris. Retrieved from https://doi.org/10.1787/48ebd1ba-en

Scheresberg, C. D. B. (2013). Financial literacy and financial behaviour among young adults: evidence and implications. *Numeracy: Advancing Education in Quantitative Literacy, 6*(2), Article 5, 1-23.

Scheresberg, C. D. B., Hasler, A., & Lusardi, A. (2020). Millennial mobile payment users: a look into their personal finances and financial behavior. *ADBI Working Paper, 1074, Asian Development Bank Institute*, Tokyo. Retrieved from https://www.adb.org/sites/default/files/publication/562156/adbi-wp1074.pdf

Seppanen, S., & Gualtieri, W. (2012). *The millennial generation*. Research review. National Chamber Foundation (NCF). Retrieved from https://www.uschamberfoundation.org/sites/default/files/article/foundation/MillennialGeneration.pdf

SHRODERS (2018). *Global investor study: is information the key to increasing sustainable investments?* Retrieved from https://www.schroders.com/en/sysglobalassets/digital/insights/2018/pdf/global-investor-study/sustainability/global_investor_study_2018_sustainable_investment_report_final.pdf