THE ANALYSIS OF THE FACTORS DETERMINING DIGITAL INVESTMENT OF INDIVIDUALS IN THE BALTIC AND NORDIC COUNTRIES

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Annotation

Digital investment is becoming more and more popular and accessible not only to legal entities, but also to individuals. The article examines the factors that determine successful digital investment – financial literacy and digital literacy. Research aim – to analyse the factors determining the digital investment of individuals in the Baltic and Nordic countries. Two countries from each region have been selected for the analysis: Latvia and Lithuania from the Baltic countries, and Finland and Sweden from the Nordic countries. Research methods: the analysis of the scientific literature; the analysis of statistical data; systematisation and generalisation.

It has been identified that, during the analysed period, the household investment rate varied unevenly, but in Sweden it stood out the most significantly – it was about twice as high as in Finland and in the Baltic countries. The lowest household investment rate was in Latvia. It has been observed that the share of individuals with basic digital skills was significantly higher in the Nordic countries than in the Baltic countries. Although Finland's real GDP (gross domestic product) per capita was significantly higher than in the Baltic countries, the analysis revealed that the dynamics of household investment rates was not as high as in Sweden, only slightly higher than in the Baltic countries. Arguably, Sweden had the highest digital investment opportunities in terms of household investment rates and the share of individuals with basic digital skills.

Keywords: digital investment, financial literacy, digital literacy.

Introduction

Relevance of the topic. Nowadays, finance management is inseparable from digitalisation. As the world becomes increasingly digitised, a certain level of digital skills is required to manage both personal and professional life. In 2019, a third of adults in the EU in employment or looking for work – i.e., more than 75 million people, did not have at least basic digital skills or had not used the internet at all during the previous three months. The share of such persons was higher for those with low levels of education, older people and the unemployed (Europos Audito Rūmai, 2021). This shows that digital investment is becoming more and more popular and accessible not only to legal persons, but also to individuals. This became especially relevant during the global COVID-19 pandemic, when the financial operations of individuals (including investments) changed from physical to electronic.

According to Elsinger et. al. (2018), financial technology (fintech) allows a larger share of the population access to a larger variety of financial products. Fintech does not only affect payments and transfers but also insurance, credit and savings. Therefore, consumers need new forms of financial literacy, closely related to concepts of media literacy. Silgoner, Greimel– Fuhrmann and Weber (2015) prove the importance of financial literacy by suggesting that this lack of financial knowledge may be conducive to risky financial behavior, such as insufficient saving for bad times or retirement, basing financial decisions on little advice or comparison or taking out loans for adverse reasons, e.g. impulse purchases or gifts. But when it comes to investments, a higher level of financial literacy is needed, because an individual must choose an investment instrument that meets his expectations: investment amount, risk, return, period, etc. What is more, individuals must have digital skills in order to invest digitally.

Research problem – what factors determine to successful digital investment for individuals.

Subject matter of the research – the factors determining successful digital investment of individuals.

Research aim – to analyse the factors determining the digital investment of individuals in the Baltic and Nordic countries. Two countries from each region have been selected for the analysis: Latvia and Lithuania from the Baltic countries, and Finland and Sweden from the Nordic countries.

Research tasks:

1. To identify the factors that determine the success of digital investment by individuals.
2. To determine the level of digital investment of individuals in the Baltic and Nordic countries.

Research methods: the analysis of the scientific literature; the analysis of statistical data; systematisation and generalisation.

1. Factors determining digital investment

Different variants of the definition of investment can be found in national and foreign literature. For example, the Law on Investment of the Republic of Lithuania (Lietuvos Respublikos Seimas, 1999) defines investments as funds and tangible, intangible and financial assets assessed in the manner prescribed by laws and other legal acts, invested in order to obtain from the object of investment profit (income), social result (in education, culture, science, health and social security as well as other similar spheres) or to ensure the implementation of state functions. The concept of investment has been extensively analysed by Lithuanian (Tomaševič, Mackevičius, 2010; Gižienė, Simanavičienė ir Palekienė, 2012) and foreign (Huang, Kang, 2018; Aydin, Kahraman and Kabak, 2018) authors. Investment is defined by Goud (2022) as the sacrifice of some present value for an uncertain future reward. In a general sense, investment is the investment of funds with the aim of obtaining profit in the future.

Digital investment of individuals is inseparable from financial literacy and digital literacy. Baihaqqy et. al. (2022) defines financial literacy as a person's knowledge and ability to manage finances, improve the quality of life, when the decision can affect society, the country and the economy of the world. Kvieskienė (2016) describes financial literacy as the set of skills necessary to correctly understand and interpret financial information in order to make the right financial decisions. Yuneline and Suryana (2020) define financial literacy as a state when a person has certain skills and abilities that enable him to use the available resources to achieve a goal.

The Programme for International Student Assessment (PISA) is the largest worldwide study of fifteen-year-old students in reading, mathematics and science. It is carried out every three years since 2000. The purpose of this study is to evaluate how fifteen-year-olds are ready to apply the acquired knowledge and skills of the aforementioned fields in order to overcome challenges of the modern life. This study is initiated and organised by the Organisation for Economic Co-operation and Development. In addition to reading, mathematics and science, this study also assesses other young people's skills, namely financial literacy (internationally assessed since 2012) and collaborative problem-solving. Financial literacy is studied from three perspectives, which must be understood as different and hierarchically independent dimensions of the same phenomenon: the content of financial knowledge and understanding; procedural skills; and situational contexts (Nacionalinis egzaminų centras, 2017).

Table 1. The framework of financial literacy in the PISA study

The content of financial knowledge and understanding	Procedural skills	Situational contexts
Money and transactions	Identification of financial information	Education and work
Planning and managing finances	Analysis of information from a financial perspective	Home and family
Risk and reward	Evaluation of financial decisions	Individual
Financial landscape	Application of financial knowledge and understanding	Societal

Source: OECD, 2017

According to Lecke (2020), one of the essential characteristics of innovative financial services is the application of new technologies, which is also related to other exceptional characteristics of innovative financial services: automation, digitalisation, accessibility and dynamism. According to Eshet-Alaklai (2004), digital literacy is technical-procedural, cognitive and emotional-social skills. Martin (2009) distinguishes three levels of digital literacy:

1. Digital competence (skills, concepts, approaches, attitudes).
2. Digital usage (professional, discipline application).
3. Digital transformation (innovation, creativity).

The above listed levels of digital literacy are listed from the lowest to the highest. In order to ensure that as many individuals as possible could reach the highest level, on 9 March 2021, the European Commission presented a vision and avenues for Europe's digital transformation by 2030. The Commission proposes a Digital Compass for the EU's digital decade that consists of four main aspects (see Figure 1).

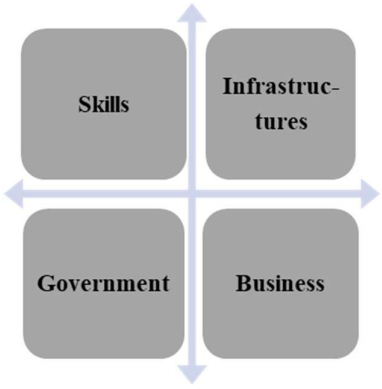

Figure 1. A compass for the EU's digital decade
Source: European Commision, 2021

The skills area includes a target of 80% of the population with at least basic digital skills and the growth in the number of ICT specialists to 20 million with convergence between women and men. A secure and sustainable digital infrastructure includes a Gigabit network for everyone and 5G coverage everywhere; doubling the EU's share of advanced semiconductors in global production; 10,000 climate neutral highly secure edge nodes; and the first computer with quantum acceleration. Digitisation of public services includes fully online public services; all citizens having access to medical records; 80% of citizens using a digital ID. The digital transformation of businesses includes the following goals: 75% of enterprises in the EU using cloud/big data/Artificial Intelligence technologies; doubling the number of unicorns in the EU due to more intensive development and financing of innovative companies; more than 90% of SMEs reaching at least a basic level of digital intensity (European Commision, 2021).

To sum up, it can be stated that the main factors determining successful investment of individuals are financial literacy and digital literacy. The financial literacy can be described as the set of skills necessary to correctly understand and interpret financial information in order to make the right financial decisions. The level of financial literacy can be determined by assessing the content of financial knowledge and understanding, procedural skills and the context of situations. The digital literacy is technical-procedural, cognitive and emotional-social skills. The European Commission proposes a Digital Compass for the EU's digital decade that consists of four main aspects: skills, infrastructures, government, business.

2. The situation in the Baltic and Nordic countries

The countries analyzed in the study are of different economic development, therefore, before starting to analyze the digital investment opportunities of individuals, it is necessary to assess the economic capacity of the countries. Real GDP per capita is a measure of economic activity and is also used as a proxy for the development in a country's material living standards. The indicator is calculated as the ratio of real GDP to the average population of a specific year. Figure 2 shows the dynamic of real GDP per capita (€).

During the analyzed period, real GDP per capita had a growing trend in all analyzed countries. It is noticeable that the real GDP per capita in the analyzed period in the Baltic countries was three times lower than in the Nordic countries. The mentioned indicator was the highest in Sweden and reached about 44 thousand euros. Sweden's economic decisions were and are consistent, based on detailed

calculations. From 1980 to 2018 Sweden's real GDP per capita has almost doubled, and is now a key part of the Swedish economy a feature is openness and a liberal approach to trade and business (Lietuvos bankas, 2020).

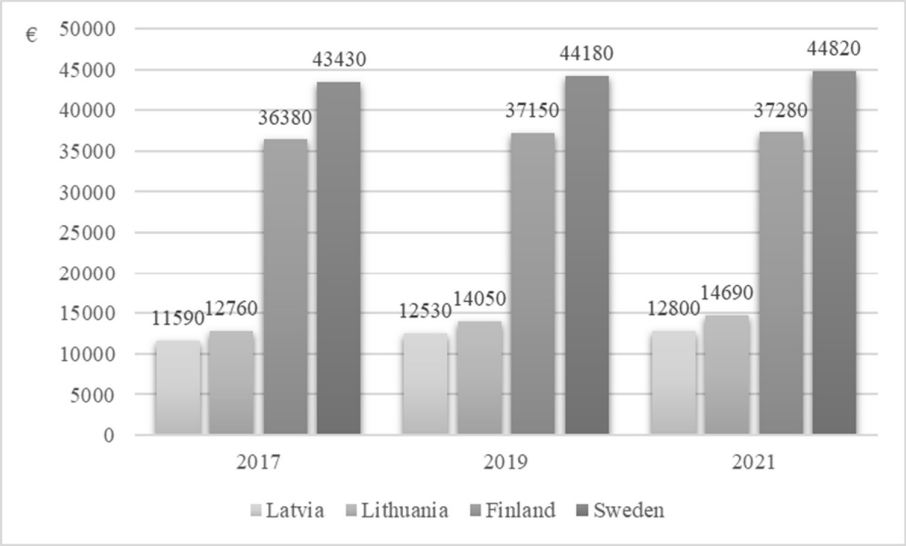

Figure 2. The dynamics of real GDP per capita
Source: Eurostat, 2022c

One of the most important indicators showing the level of household investment is the investment rate. The household investment rate is defined as gross investment by the household sector (gross fixed capital formation; mainly dwellings) divided by gross disposable income (adjusted for the change in pension entitlements) of the household sector in national accounts. Household investments mainly consist of housing purchases and renovations. Durable goods (including passenger cars) are not considered a household investment (Eurostat, 2022a).

Figure 3 shows the dynamics of household investment rates in two Baltic countries (Latvia and Lithuania) and two Nordic countries (Finland and Sweden).

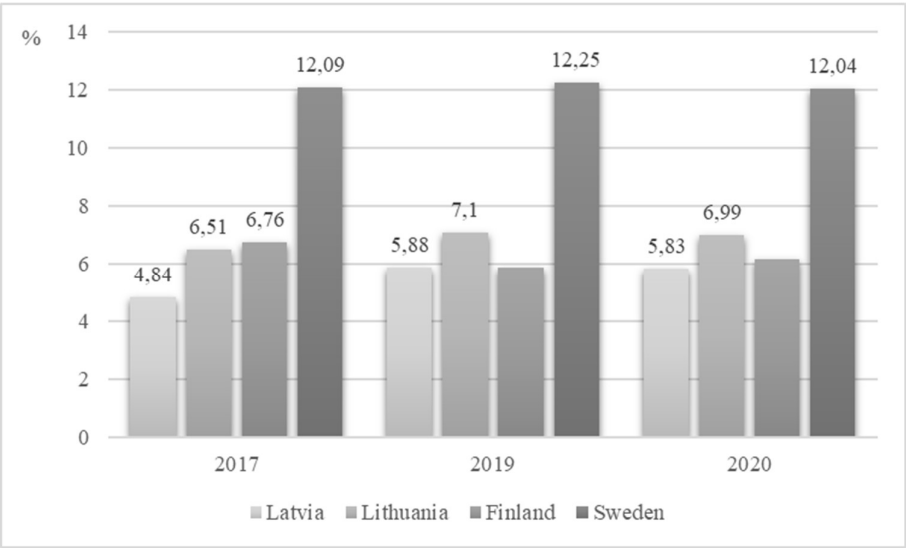

Figure 3. The dynamics of household investment rates
Source: Eurostat, 2022a

It can be noted that the household investment rate varied unevenly during the analysed period, but the household investment rate in Sweden stands out the most – during the analysed period, it fluctuated between 12.04–12.25 % and was about two times higher than in Finland and Baltic countries. The lowest

household investment rate was in Latvia; it reached only 4.48–5.83 %. In 2020, compared to 2019, the rate of household investment decreased slightly in all analysed countries, (except for Finland – here the analysed indicator increased). This can be associated with the global COVID-19 pandemic, when households tended to save.

Figure 4 shows the share of individuals with basic digital skills in the analysed countries.

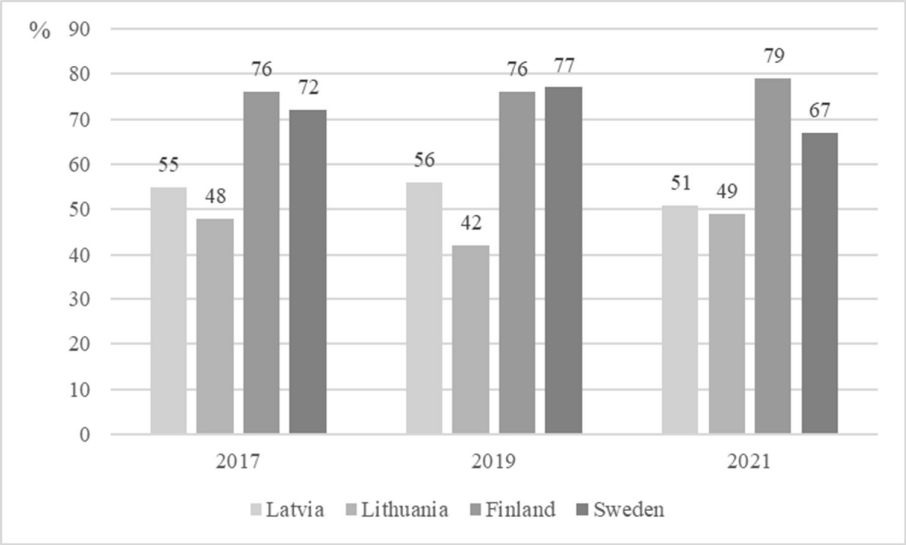

Figure 4. The share of individuals with basic digital skills
Source: Eurostat, 2022b

From Figure 4 it is obvious that during the entire analysed period (2017–2021), the share of individuals with basic digital skills in the analysed Baltic countries was significantly lower than in the Nordic countries. In Lithuania, the share of individuals with basic digital skills was the lowest. It fluctuated between 42–49 %. A slightly higher share of individuals with basic digital skills was in Latvia (51–56 %). In Finland and Sweden, the share of individuals with basic digital skills varied between 67–79 %.

Summarizing the analyzed statistical data, it can be stated that according to the indicators of the household investment rate and the share of natural persons with basic digital skills, the greatest opportunities for digital investment were in Sweden, and the real GDP (gross domestic product) per capita of this country was created the highest in this country. Finland's real GDP per capita was almost three times higher than in the Baltic countries, the level of digital literacy was the highest compared to the analyzed countries, but the rate of household investment was close to the rate of the Baltic countries, so it can be concluded that Finland households also had real opportunities to invest in digital way.

Conclusions

1. The main factors determining successful digital investment of individuals are financial and digital literacy. The financial literacy can be described as the set of skills necessary to correctly understand and interpret financial information in order to make the right financial decisions. The level of financial literacy can be determined by assessing the content of financial knowledge and understanding, procedural skills and the context of situations. The digital literacy is technical-procedural, cognitive and emotional-social skills. Three levels of digital literacy are distinguished: digital competence (skills, concepts, approaches, attitudes); digital usage (professional, discipline application); digital transformation (innovation, creativity). The European Commission proposes a Digital Compass for the EU's digital decade that consists of four main aspects: skills, infrastructures, government, business.

2. It has been identified that the household investment rate varied unevenly during the analysed period, but the Swedish household investment rate stood out the most – during the analysed period, it

was about twice as high as in Finland and the Baltic countries. The lowest household investment rate was in Latvia. It has been observed that the share of individuals with basic digital skills was significantly higher in the Nordic countries than in the Baltic countries. Although Finland's real GDP per capita was significantly higher than in the Baltic countries, the analysis revealed that the dynamics of household investment rates was not as high as in Sweden, only slightly higher than in the Baltic countries. Arguably, Sweden had the highest digital investment opportunities in terms of household investment rates and the share of individuals with basic digital skills.

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FIZINIŲ ASMENŲ SKAITMENINĮ INVESTAVIMĄ LEMIANČIŲ VEIKSNIŲ ANALIZĖ BALTIJOS IR ŠIAURĖS ŠALYSE

Aurelija Zonienė, Audronė Meškelienė, Sabina Jurkaitienė

Santrauka

Šiais laikais finansų valdymas yra neatsiejamas nuo skaitmenizacijos. Finansinės technologijos (fintech) leidžia didesnei daliai gyventojų gauti įvairesnių finansinių produktų, o tai turi įtakos ne tik mokėjimams ir pervedimams, bet ir draudimui, kreditui ir santaupoms. Todėl vartotojams reikia naujų finansinio raštingumo formų, glaudžiai susijusių su skaitmeninio raštingumo sąvokomis. Šis finansinių žinių trūkumas gali paskatinti rizikingą finansinį elgesį, pvz., nepakankamas santaupas sunkiems laikams ar išėjus į pensiją, impulsyvius pirkinius ir pan. Kita vertus, skaitmeninis investavimas tampa vis populiaresnis, prieinamas ne tik juridiniams, bet ir fiziniams asmenims. Ypač tai tapo aktualu pasaulinės COVID-19 pandemijos laikotarpiu, kai fizinių asmenų finansinės operacijos (įskaitant ir investavimą) iš fizinių tapo elektroninėmis. Siekiant kokybiškai investuoti skaitmeninėmis priemonėmis, reikalingas aukštesnis finansinio raštingumo lygis, nes asmuo turi pasirinkti tokį investavimo instrumentą, kuris atitinka jo lūkesčius: investicijos sumą, riziką, grąžą, laikotarpį ir kt. Be to, asmenys turi turėti skaitmeninių įgūdžių norėdami investuoti skaitmeniniu būdu.

Mokslinė problema – kokie veiksniai lemia sėkmingą fizinių asmenų skaitmeninį investavimą.

Tyrimo tikslas – išanalizuoti fizinių asmenų skaitmeninį investavimą lemiančius veiksnius Baltijos (Latvijos ir Lietuvos) bei Šiaurės (Suomijos ir Švedijos) šalyse.

Tyrimo metodai: mokslinės literatūros analizė, statistinių duomenų analizė, sisteminimas ir apibendrinimas.

Teorinė analizė parodė, kad pagrindiniai veiksniai, lemiantys sėkmingą fizinių asmenų skaitmeninį investavimą yra finansinis raštingumas ir skaitmeninis raštingumas. Finansinis raštingumas mokslinėje literatūroje apibrėžiamas kaip įgūdžių ir sugebėjimų, reikalingų tinkamai suprasti ir aiškinti finansinei informacijai, ir ja remiantis priimti teisingus finansinius sprendimus, visuma. Finansinio raštingumo lygį galima nustatyti įvertinant finansinių žinių ir supratimo turinio, procedūrinių gebėjimų bei situacijų kontekstą. Skaitmeninis raštingumas yra techniniai–procedūriniai, kognityviniai ir emociniai–socialiniai įgūdžiai. Išskiriami trys skaitmeninio raštingumo lygiai: skaitmeninė kompetencija (įgūdžiai, sąvokos, požiūriai, nuostatos), skaitmeninis naudojimas (profesionalus, disciplininis taikymas), skaitmeninė transformacija (novatoriškumas, kūrybiškumas).

Atliktas tyrimas atskleidė, kad Baltijos ir Šiaurės šalių namų ūkių investicijų norma analizuojamu laikotarpiu kito netolygiai, tačiau Švedijos namų ūkių investicijos norma išsiskyrė ženkliausiai – analizuojamu laikotarpiu ji svyravo tarp 12,04-12,25 proc. ir buvo apie du kartus didesnė nei Suomijoje bei analizuojamose Baltijos šalyse. Mažiausia namų ūkių investicijų norma buvo Latvijoje, ji siekė 4,48-5,83 proc. Pastebėta, kad 2020 m. palyginus su 2019 m. visose analizuojamose šalyse namų ūkių investicijų norma neženkliai sumažėjo (išskyrus Suomiją – šioje šalyje analizuojamas rodiklis padidėjo), tai galima sieti su visą pasaulį apėmusia COVID-19 pandemija, kuomet namų ūkiai buvo linkę taupyti.

Visu analizuojamu laikotarpiu (2017-2021 m.) skaitmeninių įgūdžių pagrindus turinčių asmenų dalis analizuojamose Baltijos šalyse buvo ženkliai mažesnė nei Šiaurės šalyse. Skaitmeninių įgūdžių pagrindus turinčių fizinių asmenų dalis Lietuvoje buvo mažiausia. Ji svyravo tarp 42-49 proc. Šiek tiek didesnė skaitmeninių įgūdžių pagrindus turinčių fizinių asmenų dalis buvo Latvijoje (51-56 proc.). Suomijoje ir Švedijoje skaitmeninių įgūdžių pagrindus turinčių fizinių asmenų dalis svyravo tarp 67-79 proc.

Apibendrinant analizuotus statistinius duomenis galima teigti, kad pagal namų ūkių investicijų normos ir skaitmeninių įgūdžių pagrindus turinčių fizinių asmenų dalies rodiklius didžiausios skaitmeninio investavimo galimybės buvo Švedijoje, o šios šalies realusis BVP (bendrasis vidaus produktas) gyventojui buvo sukuriamas didžiausias. Suomijos realusis BVP vienam gyventojui buvo beveik tris kartus didesnis nei Baltijos šalyse, skaitmeninio raštingumo lygis buvo didžiausias visose analizuotose šalyse, tačiau šios šalies namų ūkių investicijų norma buvo artima Baltijos šalių normai, todėl galima formuluoti išvadą, kad Suomijos namų ūkiai, nors ir turėjo galimybes, tačiau nebuvo linkę investuoti.

***Raktiniai žodžiai**: skaitmeninis investavimas, finansinis raštingumas, skaitmeninis raštingumas.*