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Effects of COVID-19 on people's self-assessment of their financial situation in the Baltic States

Master thesis

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I have written this master's thesis independently. All viewpoints of other authors, literary sources and data from elsewhere used for writing this paper have been referenced.

Abstract:

This study analyzes the effects of the COVID-19 crisis on the households' financial situation based on their self-assessment, and average unemployment rate on Baltic states in comparison with South European countries (Greece, Spain, Italy). When great recession happened in 2007 and 2008 years, South EU countries were the most affected ones in terms of unemployment rate, people's financial situation among other EU countries, also the same results followed in COVID-19 period after great recession, and they had highest statistics regarding average unemployment rate in the pre-crisis and crisis period (2017,2018,2019,2020,2021), therefore the author decided to compare Baltic States with specially Southern EU countries. In this thesis, firstly, Eurostat statistics were used to analyse changes in the unemployment rate and GDP per capita in Baltic states and EU countries in 2017,2018,2019,2020,2021 years. Secondly, microdata from Eurofond Living, Working and COVID-19 survey dataset (2020,2021) and logistic regression model is used to analyse which factors are related to people's self-assessment of their financial situation. Results show that South EU countries' average unemployment rate and GDP per capita were higher than Baltic states. Also, factors that affected people's self-assessment of their financial situation were similar in Baltic and South EU countries. These factors are losing jobs either permanently or temporarily, decreasing in usual working hours and urbanisation level.

Keywords: COVID-19, Average Unemployment Rate, GDP per capita, Financial situation, Microdata, Logistic Regression model, Baltic states, South EU countries

1. Introduction

Nowadays, Covid 19 is a renowned research topic worldwide because of its remarkable impact on the financial situation of households based on self-evaluation and changes in average unemployment rate. Therefore, there is significant interest in this topic. After arising from Wuhan city in China, the virus extended to more than 125 countries globally, including Baltic countries (Gupta *et al.*, 2020). Due to the COVID-19 crisis many people were pushed into self-isolation and that had also serious consequences on their employment and economic situation.(Buheji *et al.*, 2020).

Considerable effects of COVID-19 were demonstrating itself on the financial situation of Baltic countries' households as well. Therefore it is perceivable to compare Baltic countries' situation within EU and South EU countries and see the difference or similarities in terms of factors that can possibly affect their financial situation, GDP per capita, and average unemployment rate between these countries. Some EU countries such as Greece, Spain, Luxembourg, Ireland, and Denmark had the highest statistics regarding GDP per capita and average unemployment rate.

The following research question is addressed in the thesis: **RQ.** *How households' financial situation based on their self-assessment has been affected by the consequences of COVID19 in Baltic states compared to European and South EU countries?* The reason for choosing specially Baltic countries' situation during COVID-19 is these countries were doing transportation and allowed border-crossing among each other during the pandemic which were not available in EU countries as seen from the previous articles. One of the main focuses is to investigate: **RQ2.** *How these allowances affected households' financial situation or how it helped to deal with the consequences of COVID-19 compared to other EU specially South EU countries.*

Financial situation is defined as people's self-evaluation of his/her situation in this research in the acquired data . It was found that people's financial situation based on their self-assessment was affected by losing jobs, change in normal working hours. Using microdata from Eurofond Living, Working and COVID-19 survey (2020,2021), factors that affect households' financial situation are found using the logistic regression model. There were three rounds of the survey, Round1 was between 9 April 2020 and 11 June 2020, round2 was between 22 June 2020 and 27 July 2020, and round3 was between 15 February and 30 March 2021. At the same time, "Eurostat statistics" allowed to measure the overall statistics of average unemployment rate and GDP per capita of EU and Baltic countries according to the years (2018,2019,2020, 2021).

The reason for comparing Baltic states with South EU countries (Greece, Spain, and Italy) in a logistic regression model is that South EU countries had the highest statistics in terms of average unemployment rate compared to other EU countries in crisis (2020) and pre-crisis period (2019), also during great recession in 2007 and 2008 years, South EU countries was hitted strongly by the

consequences of great recession regarding to people's financial situation and unemployment rate, and the same results followed in COVID-19 period in these countries that people had difficulties in their financial situation and there was huge increase in unemployment level.

Also, most of the previous articles only analysed the statistics of either other European countries, Baltic states or South EU countries, however in this research, analysing and comparing the results of these countries at the same time will be a novelty of this thesis.

As seen from the results, Baltic countries have not been influenced more strongly than most of the European countries in terms of unemployment rate. For example, on one hand, according to the analysis, the average unemployment rate of Baltic countries in 2021 was accordingly 7.1% for Lithuania, 7.6% for Latvia, 6.2% for Estonia in Figure4, on the other hand, average unemployment rate for Latvia, Lithuania, and Estonia was 6.3%, 6.3%, and 4.5% in pre-crisis period (2019). For Greece, Spain and Italy as South EU countries, average unemployment rate showed itself at the highest level among other EU countries, it was 15%, 15%, and 10% relatively in 2021, while for the year 2019, it was 17%, 14% and 10% respectively for Greece, Spain, and Italy.

However, based on the analysis of Eurostat statistics by the author, GDP per capita in Baltic countries in 2021 was 16,3K for Estonia, 14,7K for Lithuania, 12,8K for Latvia in Figure2, However GDP per capita was 15,5K, 14,1K, 12,5K relatively for Estonia, Lithuania, Latvia in the pre-crisis period (2019). Meanwhile, for EU countries in the year 2021, Luxembourg was representing the highest GDP per capita, 87K in Figure1. About Greece, Italy, and Spain it was 18K, 27K, and 24K respectively in 2021. Additionally, GDP per capita was 85K, 27K, 25K, and 18K relatively for Luxembourg, Italy, Spain, and Greece in the pre-crisis period (2019). The measurement for GDP per capita is used as Euro in the statistics. It is obvious from these figures that GDP per capita for Baltic countries was lower than GDP per capita of most of the EU countries during the pandemic (2021). GDP per capita increased in EU countries in 2021 relative to 2020. Also, it decreased in Baltic countries in 2020 compared to 2019.

The governments of European countries implemented necessary policy measures to prevent people and businesses from possible severe consequences of the pandemic. Social distance, quarantine, shutting down of the schools, businesses or workplaces, transportation, monetary and fiscal can be included in the policy measures (Anderson *et al.*, 2020). Policy measures were applied either successfully or not in Baltic and EU countries. For instance, in European countries such as Austria, Germany, Italy's government system applied strong quarantine measures after observing the first cases of the virus in March 2020. In particular, according to the IMF (International Monetary Fund) report, the government applied both fiscal and monetary policy measures for supporting human beings to get better in their financial situations. Anderson *et al.* (2020) mentioned that the government accomplished two support packages to assist people in the fiscal policy measures, one of them was funding health centres' personal or small businesses and the second package was about

to pay the employees who were fired from large businesses and worked in the tourism area, meanwhile in terms of monetary policy measures, on 25th March, these countries' Central Bank was available to supply money for the government when there was a need.

In the Baltic countries, from Estonia's policy measures' aspect, the government put essential rules related to economic and health fields. There were restrictions on the flights abroad or vice versa, restaurants, schools, and events. Must, (2020) gives an overview that the government allocated €2.3billion supporting package as a fiscal policy measure and this package's purpose was to assist the companies in investigation, health insurance fund, unemployment insurance fund to adjust wages' decline. Besides, the government supported the areas that restrictions influenced them vigorously, such as sport and culture represented in the IMF report. If we consider Lithuania and Latvia public measures, it is evident that these measures have the same content as Estonia, including closing public places such as restaurants, borders, schools, and activities that are included indoors and outdoors. However, the government's supporting packages amount was distinct from the aspect of a fiscal measure, it was 3.8 billion euros in Latvia 2.5 billion euros in Lithuania (Navickė, 2020, fiscal policy measures are implemented in Baltic countries compared to other EU countries such as allocating money to education, health sectors, SMEs, unemployment and both Lithuania and Latvia's central banks supported large companies' SMEs based on the information of the IMF report.

In general, the consequences of implemented measures affected Baltic countries' people's financial situation in different aspects. On the one hand, when restrictions are applied to some public places where the people can earn money with the help of customer service, these people's income dropped down because of the closure of restaurants, cafes, indoor or outdoor activity event places. On the other hand, supporting unemployed people, large or small companies that lost their income during the restrictions, assisted them in adjusting their budget, and increased their income on account of fiscal and monetary policy measures.

To ascertain the main factors that were affecting their self-assessment of financial situation, the author used a method such as the Logistic Regression Model. Considering the logistic regression analysis, decreasing in normal working hours, losing a job either permanently or temporarily, urbanisation level as a control variable were the main reasons for decline in people's financial situation. People's self-assessment was showing how much people's financial situation was worse in terms of their perception.

Overall, the main results were some factors that caused the change in households' financial situation were almost same in both South EU and Baltic countries, average unemployment rate of three Baltic countries (Estonia, Latvia, Lithuania) was lower than average unemployment rate of South EU countries such as Greece, Spain, Italy during the pandemic (2020). Additionally, GDP per capita

for Baltic and European countries increased in 2021 rather than 2020. Nevertheless, GDP per capita of some EU countries was greater than GDP per capita of three Baltic countries in 2021.

Additionally, the structure of the research is following: Section 1 gives an information about the overall view of COVID19 in Baltic and EU countries and some opinions of other previous articles' authors related to the pandemic, Section 2 describes observations of previous studies about policy measures, households' financial situation, methods that are used for analysing the situation during the pandemic. Section 3 explains which methodology and data is used to get statistics about average unemployment rate, GDP per capita, and financial situation of households. Section 4 shows information regarding empirical results and discussion about main statistics generally, while section 5 clarifies Conclusion and Limitations part together. Some tables are shown in the Appendix section.

CERCS: S215 Social problems and welfare, social security

2. Literature Review

Numerous empirical studies have focused on COVID- 19 affection about comparison between the EU, South EU, and the Baltic States. Compared with South European countries such as Italy and Spain, the pandemic did not have intense influence in the Baltic states (Černikovaitė and Karazijienė, 2021). Lots of authors investigated the impact of COVID-19 in Italy, Spain, Germany, Austria, Ireland, Switzerland and Belgium on the households' income. During the pandemic, both European and Baltic countries' governments implemented mostly the same rules and policy measures to mitigate the terrible consequences of the crisis (Černikovaitė and Karazijienė, 2021). Another research determined by Krasnopjorovs, (2020) mentions that, compared with some EU countries, the Baltic states were less influenced by the COVID-19 in terms of average unemployment rate.

The Foresight Center of Parliament of Estonian (2020) pointed out that, in these three Baltic countries (Estonia, Latvia, Lithuania), Lithuania was the one that was influenced more vigorously by the effects of the pandemic according to the statistics in comparison with Estonia and Latvia. In terms of applied measures, these countries were supporting each other regarding mitigation or removing restrictions and tried to develop communication skills and also they were utilising each other's policy strategies in their countries, in the meantime they were preferring experts' thoughts to apply successful policy measures, as cooperation among three Baltic countries was improved during the pandemic, thus they were indicating this kind of cooperation as a mitigation plan to prevent the virus, and with the help of it they had successful cooperation with strong organisations such as The World Health Organisation, The International Monetary Fund, and these things were influencing to unravel the COVID-19 effects (Must, 2020).

Also Webb *et al.* (2021) thinks that these three countries had a strong collaboration regarding travel restrictions, and they reopened their borders to each other for travel purposes. From the author's point of view, removing travel restrictions among three Baltic countries had a purpose in decreasing poverty inside of the countries, as they are well-known as a tourism country, and they are fixing budget mostly when the tourism sector is processing beneficially. Besides that, the government was using some communication channels to deliver daily, weekly statistics to people, bringing experts to the area to evaluate the level of virus, giving some recommendations about how to mitigate the upcoming risks and their consequences, and applying policy measures.(Webb *et al.*,2021) He gave evidence that these governments of these countries were using HSRM (Health System Response Monitor) for checking all day statistics about death, conditions, unemployment level, and effects of policy measures and they preferred to use some platforms and dashboards such as Github ArcGIS for chasing data about mortality infection cases.

Foresight Center of Parliament of Estonian (2020) highlighted that by the second half of 2019, the rate of economic growth in Estonia and Latvia was affected by the pandemic which resulted in slight decline in the growth, whereas the stable growth was captured in the economy of Lithuania. They gives an information that the lack of employment opportunities was the cause of several problems including decline in production and the level of exported goods in Estonia and Latvia, and those issues were the main reasons for decline in the economic growth, at the same time the growth was reduced by 1% in Latvia while it was decreased 0,7% in Estonia in the year 2020. From the other side, Estonia and Latvia were lucky countries related to policy measures rather than Lithuania, as its government believed that when they used other Baltic countries' strategy, policy in mitigation restrictions in their country, it did not give positive consequences and they faced some difficult cases (Must, 2020).

Černikovaitė and Karazijienė, (2021) gives an information that Lithuania had difficult times due to the outcomes of the pandemic, for instance, employers should keep the employees in the company to prevent unemployment and reduce the number of people who were willing to leave, additionally people who had personal business was in the risky situation, therefore the government had to support to avoid the effects of crisis to these people, furthermore because of the restrictions, education places, kindergartens are closed, thus there was a need to get support from the government for these families. To overcome these challenges, Lithuania enhanced the salaries 60/100% (Webb *et al.*, 2021). These policy measures were applied to intercept unemployment during intense pandemic times.

Must (2020) mentioned that in terms of accomplished connection among these three Baltic countries, it reasoned to generate "Baltic Bubble" that was about the sharing and merging of all information, strategies, restrictions that they did apply among each other, and with the help of it, it was allowed to foreign citizens to pass the borders and come to Baltic countries. Opening the

borders means that there were plenty of tourists that came to these countries,and some businesses and tourist places worked and benefited from it successfully.

Kutsar and Kurvet-Käosaar, (2021) used the data from the semi-structured interviews during the pandemic, and the Bronfenbrenner's social ecological model was applied to analyse people's assessment on their lives in Estonia, and the analysis showed that 55% of people felt a decrease in their income while 36% of unemployed lost their job.

Šteinbuka et al, (2022) used macroeconomic assessment and survey-based analysis to measure socio-economic factors of pandemic on people' lifes in Latvia, also they used Eurostat statistics data (2021) to measure the GDP rate and according to the results there were income inequality, decrease in GDP, and the reason for having low GDP was low productivity.

Černikovaitė and Karazijienė, (2021) analysed social and economic effects of COVID-19 in Lithuania with the help of Eurostat statistics data, Bank of Lithuania, and Department of Statistics of the Republic of Lithuania, and used comparative and statistical analysis, so results showed that after applying fiscal and policy measures, Lithuania's real GDP rate was raised by 3.1% in the year 2021, also due to the consequences of the pandemic, export growth declined by 2.4%.

Due to the lockdown restrictions, there were an increase in the unemployment rate in Latvia, however to support the people's well-being, the government of Latvia applied monthly allowance that supports in the amount of 200 euro (LV PEAK of the University of Latvia and Government Strategic Analysis Center (STRATA) of Lithuania, 2020). In Estonia, Latvia, Lithuania, the government was funding health care places' employees with additional payment, especially in Latvia, there were cases raising work hours to 60 each week, like in Belgium.(Webb *et al.*, 2021) He highlighted that in return, they were getting a bonus salary of 20/50%, which belonged to health sectors such as doctors and nurses, meanwhile Estonia applied the precise structure of policy measures in the country, boosting people's salaries in the health sector.

Furthermore, COVID-19 influenced the economy of the Baltic states, as there were small companies that could be affected and destroyed by consequences of the crisis, thus there was a need for mitigation, however, Baltic countries learned that they should be together and respond against pandemic effects. Also, there were financial crises in the previous years, such as 2009, and it also affected the country's economy and people's living style (Webb *et al* 2021).

Effects of COVID-19 showed itself also in the EU and specially in South EU countries. Backhaus et al (2022) gives an information that there was a great recession in 2007 and 2008 years in EU countries, thus it affected people's lives, their employment level in Italy, and increase in unemployment rate was felt, also there were inequalities in the labour market due to the effects of the great recession, he used meta analysis for measure the impact of great recession with the help

of PubMed and Scopus data. Additionally, Haw et al (2015) used narrative review method to find impact of great recession on households' unemployment, income level, and job insecurity, and he found that there was a significant impact of pandemic on households' financial situation, data used from MEDLINE, PsychINFO, Embbase and CINAHL.

Casquilho-Martins and Belchior-Rocha, (2022) studied that South EU countries had a challenging great recession in 2007 and 2008 years, while COVID-19 had significant impact on Southern EU countries in terms of social and economic impacts, and he used a mixed methods approach that contains elements of quantitative and qualitative research, and the data was coming from Eurostat statistics in order to compare socioeconomic factors. According to the opinion of Ferrara, Hemerijck and Rhodes, (2000), these countries had high statistics in the unemployment level of young people, and had gender inequality during the great recession.

Kolluru, Hyams-Ssekasi and Rao, (2021) investigated that both the great recession and COVID-19 had disruptive effects on the economy of EU countries, people's employment level, financial situation, however, Germany was the one country that was recovered after the financial crisis (2007/2008) quickly, while Italy and Spain was affected too much by effects of great recession and it took a lot time for recovering, but they were not recovered totally, because after great recession (2007/2008), another crisis COVID-19 started and significantly impacted to these countries.

Kolluru, Hyams-Ssekasi and Rao, (2021) conducted qualitative analysis for GDP rate based on the World Bank data (2000-2019), and analysis showed that GDP rate was the highest in South EU countries such as Italy, Spain, and most of the young and low paid people w
as affected too much in Italy and Spain during the great recession.

According to the information that Comolli, (2017) gives, the unemployment rate increased more than 15% in great recession times in South EU countries (Italy, Spain), and data was used from Eurostat statistics (2000-2013). Also, (Moreira et al., 2021) says Spain and Italy were the countries that were influenced more not only in the great recession (2007/2008), but also in COVID-19, and reduction in employment and GDP level was felt vigorously in Spain.

Spain is a South EU country where households' financial situation is affected by the consequences of COVID-19 based on their self-assessment. Sánchez-Rodríguez *et al* (2022) conducted the online survey on social media, institutional sites among the participants in order to get the statistics about the change in household income based on their self-assessment with the help of logistic regression model, and number of participants was 493, and 58% of participants responded that there was not any change in their income level based on their self-assessment, while 39% of participants felt reduction in their income. Moreno-Luna et al., (2021) studied that Spain had the highest unemployment rate in Q2,2020, and he used comparative analysis in order to find the changes in unemployment rate during the pandemic, he also used data from International Labour Organisation

(ILO), Eurostat statistics, the State Public Employment Service (SEPE) for analysing, and additionally he found that most of the touristic areas of Spain are affected more in terms of unemployment rate.

Almeida et al (2021) analysed the impact of COVID-19 on EU countries' people's income with the help of EUROMOD, the EU microsimulation model, version I2.0+, and he used the survey data from European Union Statistics on Income and Living Conditions (EU-SILC). Actually he found that fiscal policy measures prevent income losses of households, for instance, in the Non-policy measures scenario, people's income was decreasing 9,3% by the consequences of COVID-19, while after applying policy measures, their income level was declining 4,3%, in a nutshell, policy measures such as fiscal had a main role in mitigating the effects of COVID-19 (Almeida et al., 2021).

Kokkinos, Tsouloupas and Voulgaridou, (2022) conducted a research about effects of COVID-19 on students' financial situation, satisfaction with the life, mental health in Greece, and he utilised online survey that consisted of 1653 respondents with the help of mediation model, and the results showed that effects of pandemic had significant role on their financial situation, and it was directly leading to decrease in life satisfaction.

Mariolis, Rodousakis and Soklis, (2021) focused to find an impact of pandemic on GDP and unemployment rate in Greece, and for making analysis he used data from the Supply and Use Table of Greek Economy and applied a multi sectoral model. He found that there was a decrease in GDP and unemployment rate relatively 0.57% and 0.61% during the pandemic.

Pereirinha and Pereira, (2021) used data at individual level from Eurofound, Living, Working, and COVID-19 (April,June,2020) in order to build a logistic regression model for comparing financial situation of households based on their self-assessment. From social effects of the COVID-19 pandemic's aspect, change in working hours, losing job either permanently or temporarily, making ends meet were chosen as variables, and he analysed that people's working hours decreased a lot in Italy and Spain as South EU countries, and they lost their jobs temporarily and permanently, also they had great difficulties in making their ends meet during the pandemic.

Christl et al., (2022, p. 19) used a reweighting approach and microsimulation model in order to analyse the effects of COVID-19 on people's income, income inequality in Austria, and used EUROMOD model. In this model, he took into account changing working hours as a variable, and they found that there were differences in terms of gender inequality in unemployment level due to decrease in working hours, and the results showed that females had a greater difficulty in their financial situation compared to males. Due to the effects of COVID-19 in Austria, the government tended to apply policy measures to alleviate the consequences of the virus on human beings' income levels. At the same time, both females and males would benefit from these measures that the

government applied. It is a fact that Austria is known and developed as a tourism country; thus, its economy countered the crisis' affections. Compared to other European countries, the reduction was higher, and he mentioned that the GDP of this country was 6.6% during the pandemic, meanwhile the crisis influenced the unemployment rate, which led to a rise in the rate and peaked at 12%. In response to the increase, the short-time work (STW) scheme was applied by the government of Austria to reduce the unemployment rate and stabilise the effects of a pandemic on income. (Christl *et al.*, 2022) STW means that employees' work hours will be diminished while salary is not amended. Moreover, he mentioned that the government applied additional policy measures such as payments for households based on the number of children to boost their income, and studied that as STW schemes were very successful during the financial crisis of 2008, not only did the government of Austria rely on those schemes, but some of the other EU countries such as Germany had followed the same actions to adjust the unemployment rate.

The intense financial crisis's consequences in 2008 and 2009 in Germany were the same with COVID-19 depending on the drop in the labour market, and GDP was reduced by 5% according to the data De Poli (2021) shared and he highlighted the government of Germany implemented SWT schemes in the financial crisis years, and they utilised the same structure in the pandemic period, meanwhile DPM (discretionary policy measure) was also applied to cushion virus outcomes for households with children for 300 euro for each child, and additionally, raising tax allowance from 1,908 euro in 2019 to 4,008 euro in 2020 influenced the families' living when the effects of the crisis showed itself strongly.

Italy was the first country that was affected by the crisis in Europe. When reactions to the virus spread to Italy during the pandemic, the government started to perform restrictions rules such as social distancing and closing plenty of places. Italy was one of the countries based in Europe that was affected strongly by the crisis (Manenti *et al.*, 2020), Italy is the most well-known country in terms of recreational tourism prospects, and it accepts plenty of tourists every month, thus, he says that the government in Italy even decided to close the borders for foreigners for travel to avoid spreading infection to the people. Besides this, depending on the information of Riccardo *et al.*, (2021), they determined to measure the upcoming risks to prevent further actions that can happen to the country; they implemented the ECDC (European Center for Disease Prevention and Control) software program and they tracked and surveyed weekly reports to get precise data about the recent news of the country's virus situation and used it to detect what kind of restrictions they could apply. Furthermore, on the 5th March, the government of Italy applied another policy measure related to restrictions in some activities such as closing restaurants, pubs, bars, cafes. However, they gave allowance to people for the most critical demands, such as purchasing food from the shops (Carta and de Philippis, 2021), they described that another restriction happened on 26th March, and the activities that were not significant were closed by government decision. Indeed, many of these restrictions remained for a long time till June, and others just mitigated because of people's mental health and living style in May.

Carta and de Philippis, (2021) say that death cases were too much in Italy, approximately 65,000, and the infection cases were roughly 1.9 million and fundamentally this kind of situation showed the government that they should apply social distance measures to drop the infection cases in October, according to his opinion, due to pandemic consequences, the number of unemployed were rising, and it was affecting the economy of Italy in a bad way. For instance, ISTAT (Italian National Institute of Statistics) gave statistics that the percentage of unemployed was rising by about 17%, they observed that, in that case, the government started to give people a short time work allowance in the total amount of 2,8 billion, and self-employed also were getting € 600 in benefits.

ESRI *et al.*, (2020) shows that the crisis spread to Ireland, including its effects and consequences as well, it caused them to shut down workplaces or just minimise the number of employees a little bit, and it generated a considerable unemployment level inside the country, and regarding supporting people's well-being, the government applied essential policy measures such as PUP, which means COVID-19 Pandemic Unemployment Payment, and this support belonged to all employees, including the self-employed; the amount of support was €350 for each week, there was also additional support regarding the payment called TWSS (Temporary Wage Subsidy Scheme), consisting of €410 for each week, besides, DCYA (Department of Children and Youth Affairs) provided the employees engaged in childcare areas with the amount of €350 for each week. Ireland also announced plans to close the education and public places to intercept the consequences of the crisis such as an increase in mortality as the Baltic'countries did the same. On the other hand, closing these places was causing people to lose their jobs. In addition to this information that ESRI *et al.*, (2020) gives, the government used a distance policy measure among the people to protect them from spreading virus impact to each other.

Van Loenhout *et al.*, (2022) says that the figures displayed 1.2 million cases in Belgium during the pandemic till September of 2021. As other countries' policy measures shown in previous studies, the government of Belgium applied lockdown measurement, meaning closing most of the places and gathering. These measurements were serious about implementing and complying with the habitants. Thereby, there were mild restrictions in the summer of 2020. Nevertheless, there was an increase in the statistics of cases from September. Consequently, the government put more vigorous restrictions, and the second quarantine was launched, and closing restaurants and cinema places were also included in this policy measure.

There was another policy measure in Belgium called a temporary unemployment scheme and was a little bit similar to the STW scheme in Austria and Germany. (Hendrickx, Taes and Wouters, 2020), according to their thoughts, this scheme was about stopping work temporarily because of economic circumstances and in that case, an employer can postpone the salary that employee was getting from work, and the employer provides such an amount of salary for him/her. They have mentioned that 25% of job sectors stopped working temporarily in the crisis period. It is a fact that

the government in Belgium applied one more measure to adjust the country's unemployment level and economics sides. There was permission to work overtime voluntarily, which means the work hours were raised up to 220 from April 2020 till June 2020. However, overtime working hours could not be counted as mean weekly hours of employees, and there was no payment for additional working hours (Hendrickx, Taes and Wouters, 2020), moreover, the government applied another policy measure that was about parental leave, it means that the parents who have children and should take care of/her children were receiving some money, such as the policy measure applied in Germany.

As seen from the general dedicated information between all European countries and Baltic countries, the governments applied similar policy measures such as lockdown, funding, extra payments, parental leave to prevent unemployment, and the terrible consequences of COVID-19 in poverty, financial situation, and income level. Also, COVID-19 influenced households' financial situation significantly in Baltic states and EU, South countries, and previous studies used different methods to measure the unemployment rate, people's financial situation.
Also, **Table 1** shows the summary of main previous articles related effects of COVID-19 on households' financial situation, unemployment level and GDP rate.

Table 1. *Main articles from Literature Review*

Author name	**Method**	**Data**	**Results**
Haw et al., (2015)	narrative review	Electronic database - MEDLINE, PsychINFO, Embbase and CINAHL	There was an increase in unemployment rate in great recession in South EU countries
Backhaus et al (2022)	meta analysis	PubMed and Scopus	There was a great recession in 2007 and 2008 years in EU countries, thus it affected people's lives,their employment level in Italy, and increase in unemployment rate was felt, also there were inequalities in the labour market due to the effects of the great recession.
Sánchez-Rodríguez et al (2022)	Logistic regression model	Online survey on social media, institutional sites	58% of participants responded that there was not any change in their income level based on their self-assessment, while 39% of participants felt reduction in their income in Spain
Pereirinha and Pereira, (2021)	Logistic regression model	Eurofound, Living, Working, and COVID-19 (April,June,2020)	He took into account changing working hours as a variable, and they found that there were differences in terms of gender inequality in unemployment level due to decrease in working hours, and the results showed that females had a greater difficulty in their financial situation compared to males. GDP of this country was 6.6% during the pandemic, meanwhile the crisis influenced the unemployment rate, which led to a rise in the rate and peaked at 12% in Austria
Šteinbuka et al, (2022)	macroeconomic assessment and survey-based analysis	Interviews/ Eurostat statistics data (2021)	There were income inequality, decrease in GDP, and the reason for having low GDP was low productivity in Latvia.

Author name	Method	Data	Results
Casquilho-Martins and Belchior-Rocha, (2022)	mixed methods (contains elements of quantitative and qualitative research)	Eurostat statistics	South EU countries had a challenging great recession in 2007 and 2008 years, while COVID-19 had significant impact on Southern EU countries in terms of social and economic impacts.
Christl et al., (2022, p. 19)	Reweighting approach, microsimulation model	EUROMOD model	He took into account changing working hours as a variable, and they found that there were differences in terms of gender inequality in unemployment level due to decrease in working hours, and the results showed that females had a greater difficulty in their financial situation compared to males. GDP of this country was 6.6% during the pandemic, meanwhile the crisis influenced the unemployment rate, which led to a rise in the rate and peaked at 12% in Austria
Kokkinos, Tsouloupas and Voulgaridou, (2022)	Mediation model	online survey with students that consisted of 1653	Effects of pandemic had significant role on their financial situation, and it was directly leading to decrease in life satisfaction.
Moreno-Luna et al (2021)	comparative analysis	International Labour Organisation (ILO), Eurostat	He found that most of the touristic areas of Spain are affected more in terms of unemployment rate
Kutsar and Kurvet-Käosaar, (2021)	Bronfenbrenner's social ecological model	semi-structured interviews based on people's assessment on their lives	55% of people felt a decrease in their income while 36% of unemployed lost their job in Estonia.

3. Methodology and Data

The author built two models to learn about which factors are related to the people's self-assessment of their financial situation, one of them shows statistics about each of three Baltic countries (Estonia, Latvia, Lithuania) separately, and another one demonstrates statistics of Greece, Spain, Italy as South EU countries. The reason for analysing specifically Baltic states with South EU countries is Baltic states had a great cooperation among each other and they allowed to do transportation and border-crossing during the pandemic, and to measure how these kind of allowances supported to detail with COVID-19 effects, and had better situation compared to South EU countries? Also, the author chose specifically South EU countries for analysing, because Italy, Spain, Greece had difficulties in unemployment and GDP rate due to great recession in 2007 and 2008 years and they could not recover fully after great recession and afterwards again COVID-19 effects happened to these countries significantly in terms of financial situation, average unemployment and GDP rate, and author analysed that how people's financial situation based on their self-assessment in South EU countries affected by the consequences of COVID-19 after great recession.

In order to compare average unemployment rate by years (2018/2019/2020/2021), the dataset which is collected from Eurostat statistics is used and analysed in the PowerBI visualisation tool. Secondly, GDP per capita for EU and Baltic countries for 2018, 2019, 2020, 2021 years is analysed in bar charts in order to figure out the decrease or increase in the statistics, and data source is also from Eurostat statistics for GDP per capita. In this research, GDP per capita will be measured

as Euro. As a third step, to define the people's financial situation based on their self-assessment, logistic regression model was used with the help of Eurofound Living, Working and COVID-19 survey dataset (2020,2021). The number of respondents for Baltic states is 10875, while for South EU countries (Greece, Italy, Spain) is 957. In this research, the research gap will be the analysis of not only Baltic states, but also comparison of South European countries' situation with Baltic states together. In that case, it will be understandable which countries were the most affected ones and had the worst situation, also had some similarities to each other in terms of average unemployment rate, GDP per capita, and financial situation during the pandemic.

Due to the impact of COVID-19, in both the South EU(Greece, Spain, and Italy) and Baltic countries, households' financial situation and employment level was influenced. Thus, to perform microdata analysis, the author used Eurofound Living, working and COVID-19 survey dataset (2020,2021) that consists of approximately 10875 respondents for three Baltic states (Estonia, Latvia, Lithuania) and 957 respondents for South EU countries, and logistic regression model to see which factors had an impact on people's self assessment of their financial situation. Number of respondents for Estonia, Latvia, Lithuania was 2522, 2460, and 5892 respectively among 10875 responses. However, the number of rows were reduced because of N/A variables when the logistic regression model was done.

3.1. Logistic Regression Analysis

In a nutshell, the author tried to get estimates with the help of logistic regression models in Eurofound Living, Working and COVID-19 survey dataset (2020, 2021) while to achieve the statistics and difference of average unemployment rate, and GDP per capita from 2018 till 2021th year in macrodata that belongs to Eurostat statistics (2020,2021) dataset.

It is a fact that previous studies such as Rababah *et al.* (2020) also used a logistic regression model in his study and explored the possible effects of COVID-19 on the financial situation of the companies using microdata from the CSMAR database. (China Stock Market & Accounting Research). He found a significant relationship between variables, and observed that companies' financial situation was strongly affected by the consequences of COVID-19 such as decline in investment, profit/margin, and revenue. Another example can be given from Wilson *et al.* (2020) that the regression model was used to get insights about job insecurity and financial situation related to consequences of COVID-19 and found some significant correlation between the variables in his study. Rababah *et al.* (2020) studied that there was a decrease in profit/margin, revenue and investment of Chinese companies during the pandemic. Overall, they learned how companies' financial situation and job insecurity was affected by the consequences of COVID-19. Therefore, it is reasonable to use a logistic regression model to find the dependency level of a dependent variable from the explanatory variables and the significant correlation between variables precisely.

Logistic regression model is the following one:

$$\textbf{Financial Situation} = \beta_0 + \beta_1 \text{ENDS\_MEET} + \beta_2 \text{LOSE\_JOB} + \beta_3 \text{CHANGE\_WORKHOURS}_t + \beta_4 \text{AGE-GROUP} + \beta_5 \text{GENDER} + \beta_6 \text{URBANISATION\_LEVEL} + \beta_7 \text{EDUCATION\_LEVEL} + \varepsilon$$

Table 2. *Explanation of Variables*

Variable	Question	Type of Variable	R programming language coding	Coding used in this work
Financial Situation	When you compare the financial situation of your household 3 months ago and now would you say it has become better, worse or remained the same ?	Dependent Variable	0 – worse 1 – better 1 – same	0 - worse
Ends_meet (ref – Easily)	Is your household able to make ends meet?	Explanatory Variable	1. With some difficulty 2. Very easily 3. With difficulty 4. Easily 5. Fairly easily 6. With great difficulty	1. Very easily 2. Fairly easily 3. With difficulty 4. With great difficulty 5. With some difficulty
Lose_job (ref – No)	During the COVID-19 pandemic have you lost your job(s)/contract(s) ?	Explanatory Variable	1. No 2. Yes, permanently 3. Yes, temporarily	1. Yes, permanently 2. Yes, temporarily
Change_workhours (ref – Decreased a little)	During the Covid-19 pandemic have your working hours changed?	Explanatory Variable	1. Stayed the same 2. Increased a little 3. Increased a lot 4. Decreased a little 5. Decreased a lot	1. Stayed the same 2. Increased a little 3. Increased a lot 4. Decreased a lot
Age_group (ref – Adult)	Age group of respondents?	Control Variable	1. Between 17 y.o and 35 y.o – **Young** 2. Between 35 y.o and 60 y.o – **Adult** 3. More than 60 y.o - **Elder**	1. Between 17 y.o and 35 y.o – **Young** 2. More than 60 y.o - **Elder**
Gender (ref – Female)	Gender of respondents	Control Variable	Female Male	Male

Variable	Question	Type of Variable	R programming language coding	Coding used in this work
Urbanisation_level (ref – A City or City suburb)	Where is the living place of the respondent?	Control Variable	A city or city suburb A village/small town A medium to large town The open countryside	1. A village/small town 2. A medium to large town 3.The open countryside
Education_level (ref – Primary)	What type of education does the respondent have?	Control Variable	Primary Secondary Tertiary	Secondary Tertiary

Source: explanations prepared by the author based on the Eurofound (2020, 2021), Living, Working and COVID-19 dataset, Dublin, (https://www.eurofound.europa.eu/data/covid-19)

In **Table 2**, Financial situation is a dependent variable, "Ends_meet", "Lose_job", and "Change_workhours" are the independent (explanatory) variables. However, "Age_group", "Gender", "Urbanisation_level", and "Education_level" are control variables that have an impact on the people's self-assessment of their financial situation, additionally reference groups for all variables are shown (see Table2).

Author specially chose these variables among other variables that were given in Eurofond Living, Working and COVID-19 survey dataset (2020, 2021) for analysing in the logistic regression model, because there was a significant correlation among financial situation of households based on their self-assessment and these variables. And, this significant correlation in the model was showing what variables can have an impact on people's self-assessment of their financial situation, also Pereirinha and Pereira, (2021) and Christl et al., (2022, p. 19) used some of these variables in his analysis such as changing in working hours, losing job, making ends meet, and they also found a significant correlation between the dependent and explanatory variables.thus it is doable to use these variables in logistic regression model.

To aim for research, the author built a logistic regression model in R programming language with the help of Eurofond Living, Working and COVID-19 survey dataset (2020, 2021). Therefore, to see the comparisons between the South EU and Baltic countries, the model was analysed in two parts. One of them will show the statistics of all these variables for Baltic countries (Estonia, Latvia, Lithuania), another will display for South EU countries(Greece, Spain, and Italy) separately.

3.2. Descriptive statistics

First of all, about GDP per capita of Baltic countries by 2021, **Figure 1** indicates that GDP per capita for Estonia, Lithuania, Latvia was respectively 15,5K, 14,1K, and 12,5K in pre-crisis period (2019), however it was 15K, 14K, 12.1K for Estonia, Lithuania, and Latvia in 2020, Besides that, for the year 2021, GDP per capita for Estonia was 16.3K, for Lithuania and Latvia it was 14.7K and 12,8K respectively in 2021. It seems that it increased statistically in 2021 compared to 2020, however it decreased in 2020 compared to 2019. Estonia had the highest decrease among Latvia and Lithuania in 2020 rather than 2019. At the same time there was the highest increase in Estonia in 2021 compared to 2020 among the other two Baltic states.

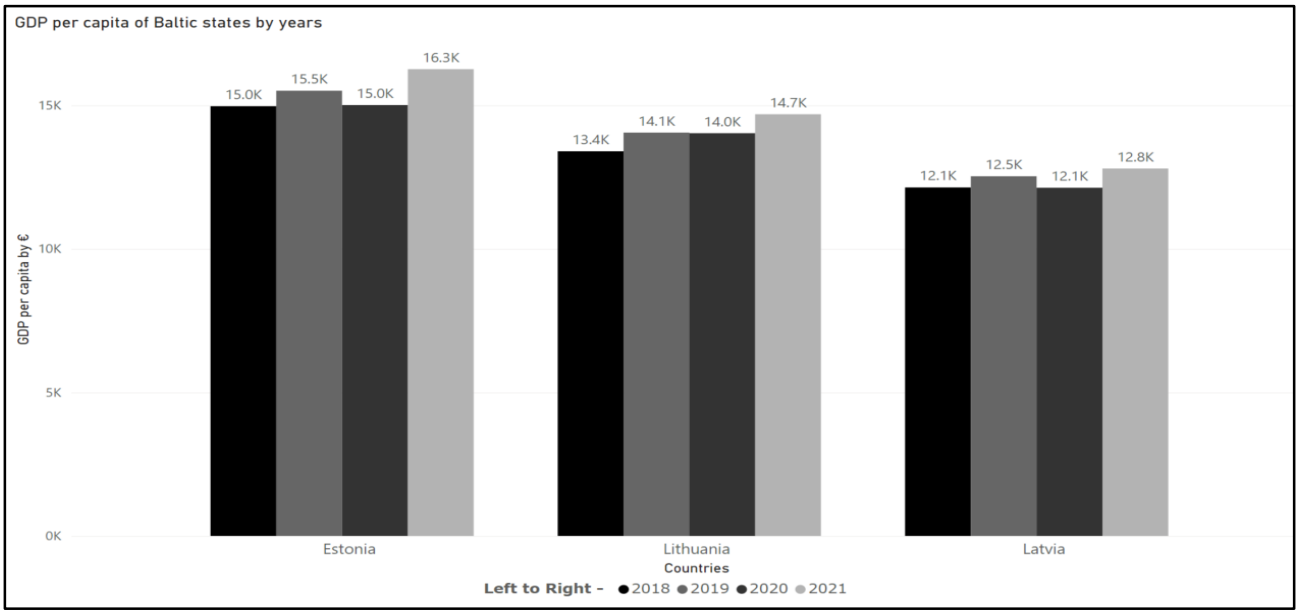

Figure 1. *GDP per capita of Baltic countries by 2018, 2019, 2020,and 2021 years*

Source: analysis was done by the author based on the Eurostat statistics ***(***https://ec.europa.eu/eurostat/databrowser/view/sdg_08_10/default/table?lang=en***)***

Afterwards, **Figure 2** demonstrates GDP per capita for EU countries in 2018, 2019, 2020, and 2021 years. The highest GDP per capita was in Luxembourg, about 87K in 2021. Second highest statistics for GDP per capita was showing itself in Ireland as 71K, moreover for Greece, Italy, and Spain, it was 18K, 27K, and 24K relatively in the year 2021. For the year 2020, it was 82K, 63K, 25K, 22K, and 16K respectively for Luxembourg, Italy, Spain and Greece. However, it was 85K, 60K, 27K, 25K, and 18K relatively for Luxembourg, Ireland, Italy, Spain and Greece in the pre-crisis period (2019). For South EU countries, GDP per capita decreased 2K for Italy and Greece, at the same time it decreased 3K for Spain in 2019 compared to 2020, however it increased 2K for these countries in 2021 compared to 2020.

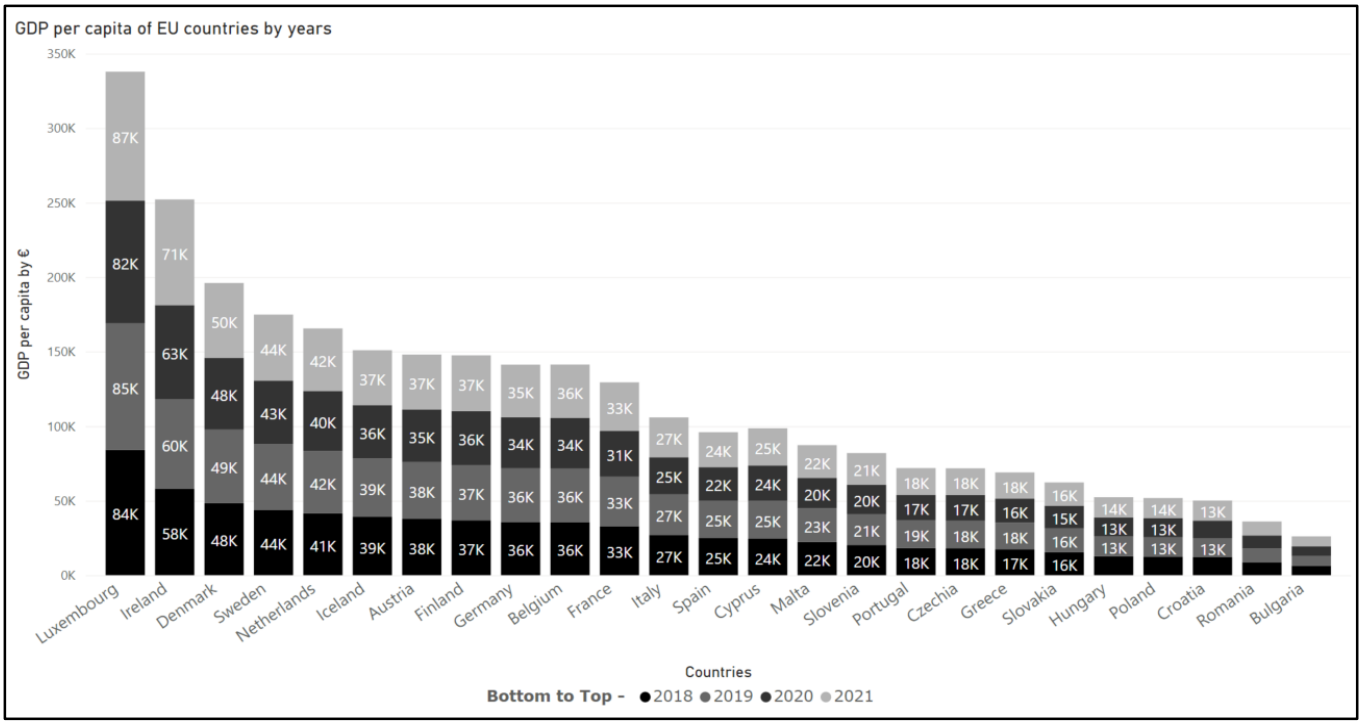

Figure 2. *GDP per capita of EU countries by 2018, 2019, 2020,and 2021 years*

Source: analysis was done by the author based on the Eurostat statistics (https://ec.europa.eu/eurostat/databrowser/view/sdg_08_10/default/table?lang=en)

Overall, it seems from the graphs that, Baltic and EU countries' GDP per capita statistics improved in 2021 compared to 2020.

COVID-19 had major effects on the average unemployment rate, thus it is measured for Baltic states and EU countries. **Figure 3** demonstrates 3 Baltic states (Estonia, Latvia, Lithuania) statistics related to Average Unemployment rate over the years 2018,2019,2020, 2021. Lithuania had the highest average percentage of unemployment rate (8.5%) for 2020 between Estonia and Latvia. Actually, there was a great recession in Baltic countries in 2007, therefore it influenced the labour market significantly. At the same time, the average unemployment rate was 6.3%, 6.3%, and 4.5% respectively for Latvia, Lithuania, and Estonia. It seems that three Baltic states' average unemployment rate increased in 2020 compared to 2019, and the highest increase was observed in Estonia as 2.5%. Meanwhile, for the year 2021, average unemployment rate was 7.6%, 7.1%, and 6.2% accordingly for Latvia, Lithuania, and Estonia. Statistics show that there was a decrease in 2021 compared to 2020 in average unemployment rate for three Baltic states. According to the author's assumption, there was applied successful policy measures to prevent increase in average unemployment rate in 2021, therefore statistics shows the reduction in 2021 rather than 2020.

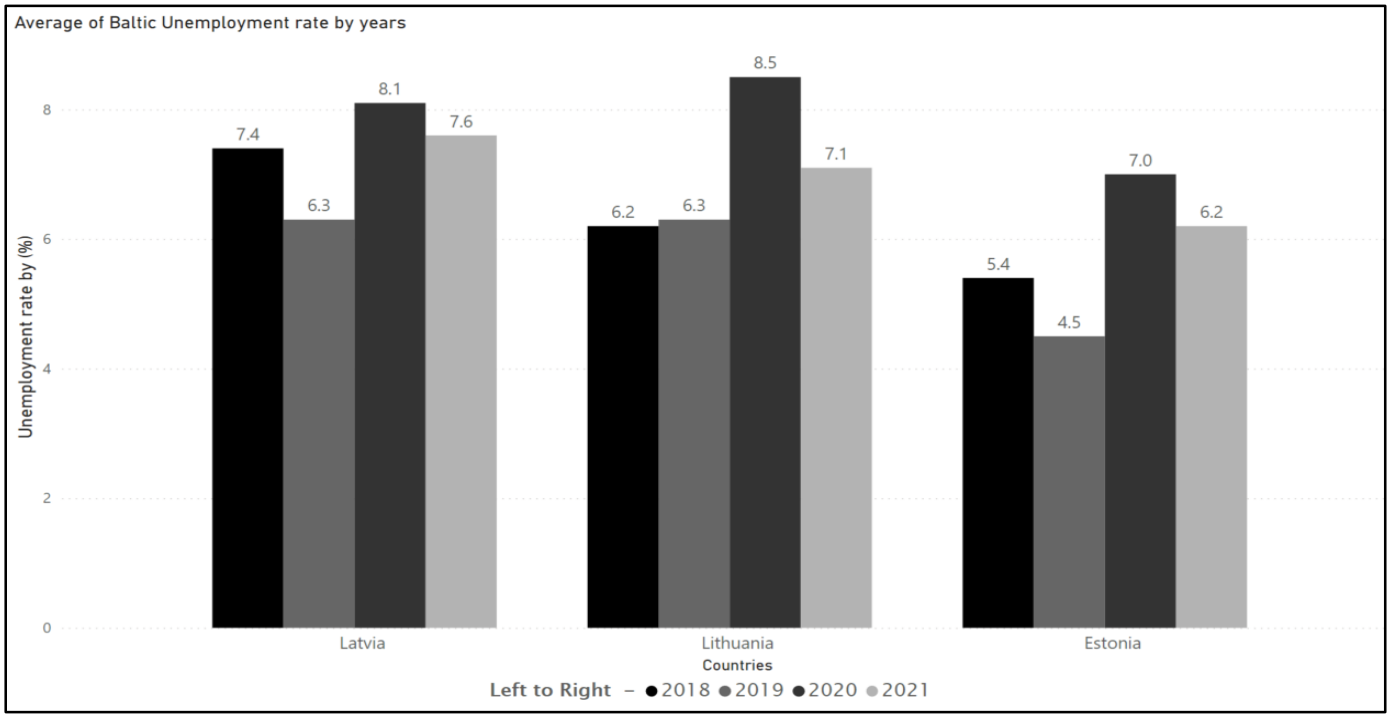

Figure 3. *Average of Baltic unemployment rate by 2018, 2019, 2020, 2021 years*

Source: analysis was done by the author based on the Eurostat statistics(https://ec.europa.eu/eurostat/databrowser/view/tipsun20/default/table?lang=en)

Mainly, **Figure 4** interprets the statistics about Average EU Unemployment rate for 2018,2019,2020,2021. It seems from the bar chart that Greece had the highest statistics among other EU countries related to average unemployment rate, it was 15% for 2021, 16% for 2020, 17% for 2019, 19% for 2018. The reason for the highest numbers is the financial crisis about debt for 2017 based on the information that Hausken and Welburn (2022) gives and it affected the year 2018 statistics of average unemployment rate. Spain and Italy's average unemployment rate were 15% and 10% in 2021, however it was 16% and 9% in 2020 respectively. Meanwhile, in the pre-crisis period (2019), it was 14% and 10% for Spain and Italy and statistics show that there was the highest increase (2%) in Spain in 2019 compared to 2020, however for Greece and Italy there was a decrease in average unemployment rate (1%) in 2019 compared to 2020.

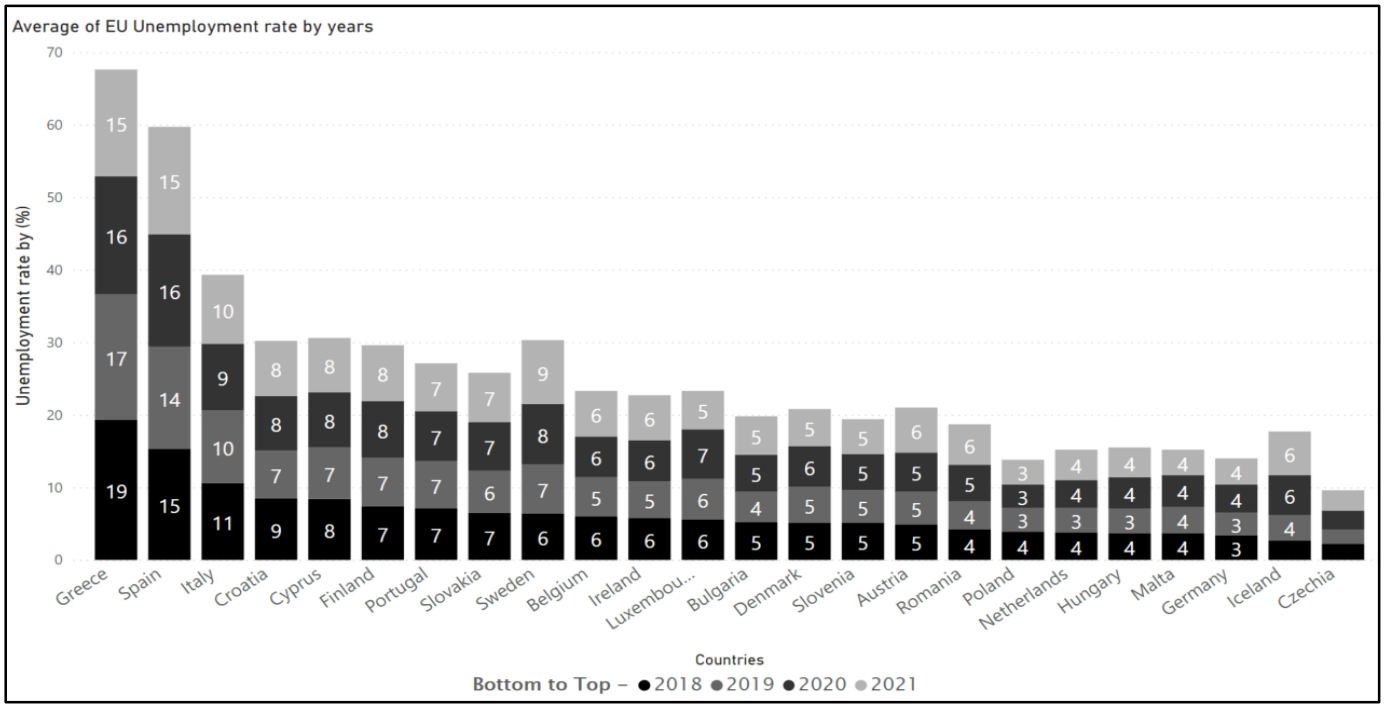

Figure 4. *Average of EU unemployment rate by 2018, 2019, 2020 ,2021 years*

Source: analysis was done by the author based on the Eurostat statistics(https://ec.europa.eu/eurostat/databrowser/view/tipsun20/default/table?lang=en)

Additionally, according to the descriptive statistics of Age as continuous variable, minimum age of respondents in Baltic states and South EU countries was 18 while maximum age was 85, 90, 88, 81 relatively in Estonia, Latvia, Lithuania and South EU countries (see more in **Appendix 1**)

Furthermore, gender proportion for Baltic and South EU countries was shown in **Appendix 2**, and number of female respondents was the highest one (4524) in Lithuania, however number of male respondents was the lowest one (334) in South EU countries.

4. Empirical results and Discussion

First of all, for measuring average unemployment rate and GDP per capita for Baltic and EU countries, bar charts were prepared in PowerBI visualisation tool with the help of Eurostat statistics data. Besides that, to find the factors that can have possible significant effects on the people's self-assessment of their financial situation, the author used a logistic regression model with the help of Eurofound Living, Working, and COVID-19 survey dataset (2020, 2021). This logistic regression model was analysed in two parts such as Baltic states (Estonia, Latvia, and Lithuania) separately and South EU countries (Greece, Spain, and Italy).

4.1. Labour market situation and average unemployment rate

It seems from the overall results that Estonia had the highest statistics in terms of GDP per capita in 2021 compared to other two Baltic states (Lithuania and Latvia), also Estonia had the highest increase in 2020 compared to pre-crisis period (2019). From EU countries' GDP per capita aspect, while Luxembourg had the highest statistics in the crisis period (2020,2021) in comparison with other EU countries, the second highest statistics were shown for Ireland. Additionally, among three South EU countries (Italy, Spain, and Greece), Spain had the highest decrease in 2019 compared to 2020 in regards to GDP per capita, but Italy had the highest statistics in 2021 compared to Spain and Greece.

In terms of average unemployment rate, the highest increase was observed in Estonia in the pre-crisis period (2019) compared to 2020 between Latvia and Lithuania. However Latvia had the highest statistics regarding average unemployment rate in 2021. There was the highest increase in Spain between in 2019 compared to 2020 between two South EU countries (Italy, and Greece) while Italy and Greece had the same decrease in average unemployment rate compared to Spain. Also, Greece and Spain were showing the highest statistics in 2021 compared to Italy.

4.2. People's self assessment of their financial situation

Logistic regression model was analysed in order to find significant correlation among the variables that have possible effects on the people's self-assessment on their financial situation. Basically, this model was analysed in two parts such as Baltic states (Estonia, Latvia, and Lithuania) separately and South EU countries (Greece, Spain, and Italy).

The logistic regression model is shown in **Table 3**, and represents three Baltic countries' statistics separately. It seems from the statistics of Estonia that people who had great difficulty in making ends meet during the pandemic, their financial situation was worse compared to the people who were able to make ends meet easily. Also, people lost their job temporarily due to the effects of COVID-19, and it affected their financial situation worse than those who did not lose their job. Furthermore, during the pandemic, households' normal working hours decreased a lot, and their financial situation was again worse compared to those whose working hours decreased a little. There is an opposite significant correlation between urbanisation level and people's financial situation. It means that the people who lived in the open countryside had a better financial situation in comparison with the people who lived in a city or city suburb.

The statistics of Latvia represent that people had the same situation as in Estonia in terms of making ends meet. They also were making ends meet with great difficulty compared to the people who were making ends meet easily, and it was influencing their financial situation badly.

The same situation again followed about losing a job temporarily like in Estonia, Latvian people were losing their job temporarily and had a worse situation than people who did not lose their job during the pandemic. Moreover, households' working hours decreased a lot, and their financial situation became worse compared to the people whose working hours decreased a little. People who were living in large towns had a worse financial situation in comparison with the people who were living in a city or city suburb.

About the statistics of Lithuania, the same situation followed here also as in Estonia and Latvia on account of making ends meet, losing a job, and change in working hours. However, people who were Elder were not affected compared to Adult ones by the consequences of COVID-19. It displays that people who were adults had a worse financial situation. The reason is the number of Elder people's responses were 2251 and it was less than responses of adult and young ones.

Overall outcome gives a clarification that three Baltic countries' people (Estonia, Latvia, Lithuania) had a worse financial situation regarding making ends meet, losing a job, and changing working hours. But, there was a special situation in Lithuania regarding Adult people who was affected more by the results of COVID-19 and had worse financial situation compared to Elder people.

Table 3. *The effect of COVID-19 on households' financial situation based on their self-assessment in three Baltic states in Logistic Regression Model*

	Estonia			Latvia			Lithuania		
	B	(se)	p	B	(se)	p	B	(se)	p
Ends_meet (ref– Easily)									
Fairly easily	0.452	0.344	0.189	1.153*	0.462	0.012	1.001***	0.218	4.46E-06
Very easily	-0.778	0.606	0.199	0.053	0.667	0.937	0.325	0.291	0.265
With difficultly	3.142***	0.523		2.814***	0.536	1.52E-07	2.541***	0.262	< 2e-16
With great difficultly	3.357***	0.795		3.646***	0.67	5.24E-08	2.721***	0.298	< 2e-16
With some difficultly	1.306***	0.344	0	2.082***	0.468	8.81E-06	1.770***	0.213	< 2e-16
Lose_job (ref – No)									
Yes, permanently	2.016	1.327	0.128	1.69	1.261	0.18	1.501	0.769	0.05
Yes, temporarily	1.814***	0.371		2.175***	0.462	2.50E-06	2.076***	0.241	< 2e-16
Change_workhours (ref– Decreased a little)									
Decreased a lot	0.939**	0.357	0.009	1.01**	0.388	0.009	0.872***	0.206	2.25E-05
Increased a little	-0.869*	0.414	0.036	-0.538	0.397	0.175	0.481*	0.194	0.013
Increased a lot	0.567	0.449	0.206	-0.454	0.46	0.323	-0.588**	0.219	0.007
Stayed the same	-0.740*	0.332	0.026	-0.574	0.322	0.075	-0.763***	0.164	3.11E-06
Educational_level (ref- Primary)									
Secondary	-0.436	0.762	0.567	-0.622	1.106	0.574	1.208	0.852	0.156
Tertiary	0.401	0.756	0.596	-0.263	1.099	0.811	1.244	0.837	0.137
Age_group (ref– Adult)									
Elder	-0.258	0.358	0.471	-0.612	0.425	0.15	-0.539*	0.224	0.016
Young	0.203	0.287	0.476	0.333	0.288	0.247	0.146	0.154	0.342

Urbanisation_level (ref–A City or City suburb)									
A village/small town	-0.031	0.317	0.921	0.57	0.316	0.071	-0.018	0.162	0.912
A meedium to large town	-0.398	0.303	0.19	0.822***	0.299	0.006	-0.067	0.141	0.633
The open countryside	-0.960*	0.409	0.019	-1.369**	0.457	0.003	-0.137	0.464	0.768
Gender (ref– Female)									
Male	-1.627	0.906	0.072	-0.187	0.311	0.547	-0.778	0.151	0.606

***Source**:* calculations prepared by the author based on the Eurofound (2020, 2021), Living, Working and COVID-19 dataset, Dublin, https://www.eurofound.europa.eu/data/covid-19.

Second analysis of the logistic regression model is about people's assessment of their financial situation in Greece, Spain, Italy as South EU countries. The reason to choose these three South EU countries among other EU countries is to have the highest statistics in average unemployment rate during COVID-19, also these countries were affected more vigorously by the consequences of the great recession in 2007 and 2008 years, and they could not recover fully after great recession till COVID-19, and then consequences of COVID-19 directly affected too much to these countries especially in terms of average unemployment rate and people's financial situation. (see more in **Table 4**)

Table 4. *Logistic Regression Model for analysing households' financial situation based on their self-assessment in Greece, Spain, Italy as South EU countries*

Dependent variable: assessment of how households evaluated their financial situation during COVID-19 (assessed using scale 1 – Worse, 0 – Better, 0 - Same)	Greece, Spain, Italy		
	B	(se)	p
Ends_meet (ref– Easily)			
Fairly easily	0.644***	0.039	2.00E-16
Very easily	-0.559***	0.058	2.00E-16
With difficultly	2.212***	0.485	2.00E-16
With great difficultly	2.679***	0.062	2.00E-16
With some difficultly	1.539***	0.039	2.00E-16
Lose_job (ref – No)			
Yes, permanently	1.757***	0.107	2.00E-16
Yes, temporarily	1.410***	0.037	2.00E-16
Change_workhours (ref– Decreased a little)			
Decreased a lot	0.539***	0.039	2.00E-16
Increased a little	-0.360***	0.046	2.90E-15
Increased a lot	-0.136**	0.049	0.006
Stayed the same	-0.422***	0.036	2.00E-16

Educational_level (ref- Primary)			
Secondary	0.158	0.086	0.066
Tertiary	0.247**	0.085	0.003
Age_group (ref– Adult)			
Elder	-0.167***	0.047	0
Young	0.084**	0.031	0.007
Urbanisation_level (ref–A City or City suburb)			
A village/small town	-0.06	0.032	0.057
A medium to large town	-0.053	0.031	0.087
The open countryside	-0.131**	0.048	0.006
Gender (ref– Female)			
Male	0.034	0.027	0.216

Source: calculations prepared by the author based on the Eurofound (2020, 2021), Living, Working and COVID-19 dataset, Dublin, https://www.eurofound.europa.eu/data/covid-19.

During the pandemic, people who were living in Greece, Spain and Italy had great difficulty in making ends meet and their financial situation became worse compared to the people who were making their ends meet easily. Unlike the situation in three Baltic countries, these countries' people (Greece. Spain, and Italy) lost their jobs also permanently, and it affected their financial situation quite strongly compared to the people who did not lose their jobs. Additionally, the reason for having a worse financial situation is decreasing normal working hours a lot during the pandemic, and their financial situation was affected more than people whose working hours decreased a little. Another significant difference from Baltic countries, people who had tertiary education level were affected more than people who had primary education level in Greece, Spain, and Italy. In these countries, young people's financial situation was the worst one compared to adult people. Because the number of Young people's responses was 170 and it was less than the number of adult and elder people's responses. Also, people who lived in the open countryside had a worse financial situation in comparison with the people who lived in a city or city suburb.

The comparison between Baltic and South EU countries shows that young people of South EU countries (Greece, Spain, Italy) were affected a bit more in comparison with Baltic countries' adult people and they had challenging times in their financial situation during the COVID-19. Furthermore, people who had tertiary level of education in South EU countries (Greece, Spain, Italy) also were the ones that were affected by pandemic possible effects and this differs from Baltic countries' people's financial situation. Overall, it seems that the factors that affected people's financial situation such as change in working hours, losing a job can be counted as the same in Baltic states and South EU (Greece, Spain, Italy) countries.

This research mainly focused on analysing people's financial situation based on their self-assessment, average unemployment rate and GDP per capita not only in Baltic states but also in EU countries and South EU countries, and this is the novelty of this research in comparison with other studies.

Overall results for GDP per capita shows that there was an increase for Baltic and EU countries in 2021 compared to 2020. And Baltic states' GDP per capita statistics were lower than South EU countries' GDP per capita statistics in 2018,2019,2020,2021 years. Also in terms of average unemployment rate, Baltic countries' statistics are lower than South EU countries' statistics in pre-crisis and crisis periods. The factors that have possible effects on people's self-assessment of their financial situation were similar to each other in Baltic states and South EU countries such as losing a job either temporarily or permanently, decreasing usual working hours a lot, urbanisation level. However there were differences in the significant level of people's age groups and living places in Baltic states and South EU countries.

Losing job either temporarily or permanently, decreasing working hours and having great difficulty in making ends meet had great significance level on financial situation of people based on their self-assessment in Baltic and South EU countries. Also, people who was young, had tertiary education level and was living in a city or city suburb had 1% significance level in South EU countries. However, adults was living in a city or city suburb in Lithuania and Estonia had 5% significance level, meanwhile people who were living in a city or city suburb in Latvia had 1% significance level regarding financial situation of people based on their self-assessment.

As mentioned in the methodology and data section, it is reasonable to use a logistic regression model in this research as previous studies also used this model and found a significant correlation in their research topics to investigate possible effects of COVID-19 on Chinese companies' financial situation Rababah *et al.* (2020). And he found a significant correlation among the variables and studied that there was a decrease in investment, revenue, profit/margin of companies. Also, (Wilson *et al.* 2020) got statistics and found significant correlation with the help of a logistic regression model about job insecurity that are affected by the consequences of pandemic.

5. Conclusion

Average unemployment rate and GDP per capita were firstly analysed with the help of Eurostat statistics (2018,2019,2020,2021). Afterwards, using Eurofound Living, Working and COVID-19 survey dataset (2020, 2021), the author analysed the effects of COVID-19 on households' financial situation based on their self-assessment in Baltic states compared to South EU countries.

As seen from the previous articles that Pereirinha and Pereira, (2021) and Sánchez-Rodríguez et al (2022) used a logistic regression model for analysing the effects of COVID-19 on households' financial situation and employment level. And they found a significant correlation that pandemic caused a decline in their income level, usual working hours, and losing jobs permanently and temporarily in South EU countries. This results matches with the author's results that logistic regression model also used in this research, and got the same results about affection of COVID-19 on people's financial situation based on their self-assessment. Additionally, Rababah *et al.* (2020) also used a logistic regression model in his study to analyse the effects of COVID-19 on Chinese companies, and got results about decrease in investment, profit and margin, revenue of companies in terms of consequences of the pandemic. The same model followed by Wilson *et al.* (2020) about the effects of pandemic on job insecurity and his analysis also showed that there was a significant correlation regarding the consequences of COVID-19.

Actually, Christl et al., (2022, p. 19) used different approach that is called reweighting and used EUROMOD model to analyse the effects of COVID-19 on households' financial situation and gender inequality in Austria as a EU country, meanwhile he achieved the similar results as author did in logistic regression that households' working hours was declined, however there was different result such as gender inequality regarding unemployment level due to decrease in usual working hours, it means females had great difficulty in their financial situation in comparison with male ones.

Overall results and analysis show that South EU countries (Italy, Greece, Spain) had the highest average unemployment rate compared to EU countries and Baltic states. Also, the GDP per capita of EU countries was higher than the GDP per capita of Baltic states during the pandemic. Additionally, COVID-19 statistically significantly affected people's financial situation in Baltic and South EU countries, and their financial situation based on their self-assessment was worse in terms of decreasing usual working hours, losing a job permanently and temporarily, they had great difficulties in making their ends meet. However, there were differences in age groups, for Baltic states (especially in Lithuania) adults were affected more than Elder people, but for South EU countries (Greece, Spain, and Italy), Young people were more affected compared to adults.

5.1. Limitations

Nevertheless, this research has limitations regarding the Eurofound Living, Working, and COVID-19 survey dataset (2020,2021) that was used for logistic regression analysis. Survey questions were answered according to respondents' own perception, and the answers could not be counted as precise, because every question can be perceived differently by each person. Although the Eurofound Living, Working, and COVID-19 survey dataset (2020,2021) had three waves, the last wave was in March,2021. However, COVID-19 is still not finished, and therefore if there would be responses near to the current time, the author can get more reliable statistics and contribute to the future works, and this is the sample of another limitation as well.

5.2. Managerial implications

There are a few possible implications from a managerial perspective, which can be considered based on the finding of the thesis. Furthermore, those managerial implications can be implied in both public and private sectors. Firstly, it is possible to apply new and reasonable policy measures by the government, which can prevent an increase in unemployment rate and make people's financial situation better.

Additionally, during the pandemic, some firms stopped working due to the consequences of COVID-19, and most of the employees lost their jobs either permanently or temporarily. As losing a job is one of the main factors which affect the financial situation of people, instead of decreasing job opportunities within the firm, remote-work mode might be enabled in suitable cases. Eventually, it would lead to a decrease in the number of employees who lose their job during the pandemic, which means the overall financial situation for people would be better.
The findings of the thesis are possibly useful to evaluate the effectiveness of policy measures that applied after March 2021 in Baltic states. For that purpose, new surveys should be conducted and the results before and after the given time should be compared to suggest new idea.

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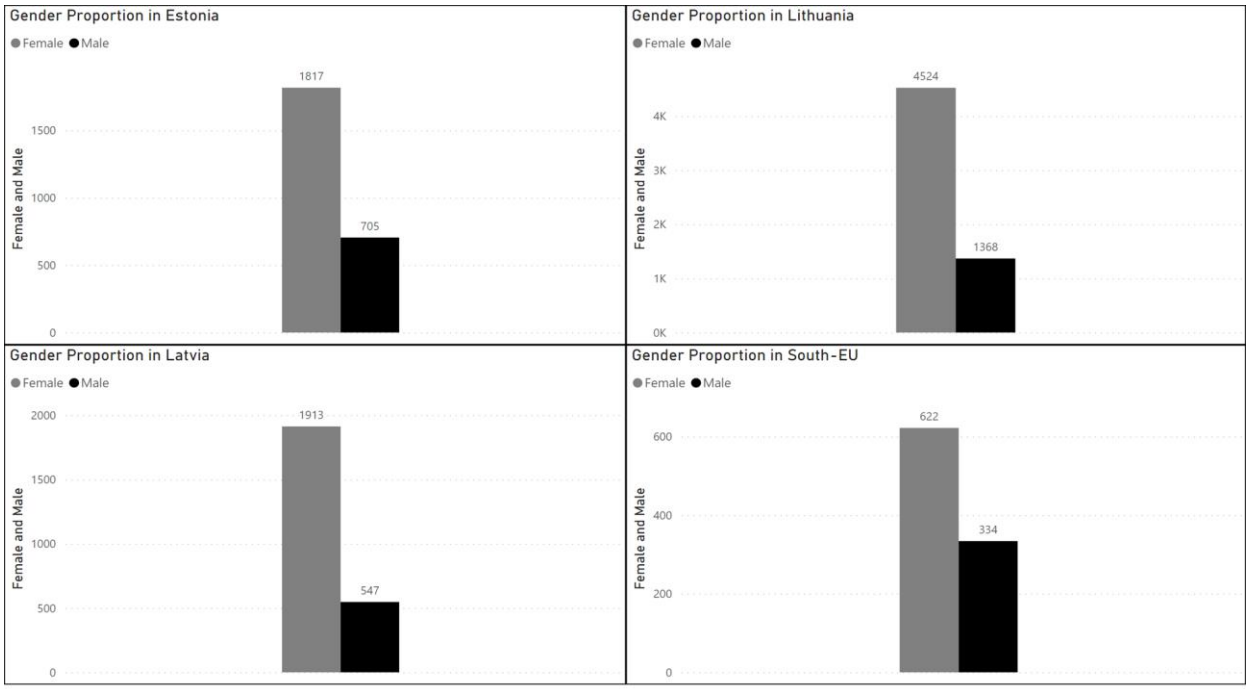
Appendix

Appendix 1. *Descriptive statistics of continuous variable*

Variable	Statistic	Estonia	Latvia	Lithuania	South-EU
Age	Minimum	18	18	18	18
	1st quartile	42	40	36	40
	Median	53	51	47	52
	Mean	51.59	49.56	46.26	51.09
	3rd quartile	62	60	58	63
	Maximum	85	90	88	81

Source*:* calculations prepared by the author based on the Eurofound (2020, 2021), Living, Working and COVID-19 dataset, Dublin, https://www.eurofound.europa.eu/data/covid-19.



Appendix 2. *Gender Proportion of Baltic and South EU countries on the data*

Source*:* calculations prepared by the author based on the Eurofound (2020, 2021), Living, Working and COVID-19 dataset, Dublin, https://www.eurofound.europa.eu/data/covid-19.

COVID-19 mõju inimeste enesehinnangule oma finantsolukorra osas Balti riikides

Selles uuringus analüüsitakse COVID-19 kriisi mõjusid leibkondade finantsolukorrale nende enesehinnangu alusel ning Balti riikide keskmist töötuse määra võrreldes Lõuna-Euroopa riikidega (Kreeka, Hispaania, Itaalia). Kui 2007. ja 2008. aastal toimus suur majanduslangus, olid ELi riikide seast Lõuna-Euroopa riigid kõige rohkem mõjutatud töötuse määra ja inimeste finantsolukorra poolest. Samad tulemused järgnesid ka COVID-19 perioodil pärast suurt majanduslangust, kui nendel riikidel oli kõrgeim statistika keskmise töötuse määra kohta kriisieelsel ja kriisiperioodil (2017, 2018, 2019, 2020, 2021). Seega autor otsustas võrrelda Balti riike Euroopa Liidu lõunapoolsete riikidega. Käesolevas lõputöös analüüsiti esiteks Eurostati statistikat töötuse määra ja SKT muutusi elaniku kohta Balti riikides ja EL-i riikides aastatel 2017, 2018, 2019, 2020, 2021 aastat. Teiseks analüüsitakse Eurofondi Living, Working ja COVID-19 uuringu andmestiku (2020, 2021) mikroandmeid ning kasutatakse logistilise regressiooni mudelit, et analüüsida, millised tegurid on seotud inimeste enesehinnanguga oma finantsolukorrale. Tulemused näitavad, et Lõuna-ELi riikide keskmine töötuse määr ja SKT elaniku kohta olid kõrgemad kui Balti riikides. Samas olid tegurid, mis mõjutasid inimeste enesehinnangut oma rahalisele olukorrale, sarnased Baltikumi ja Lõuna-ELi riikides. Enamus varasemaid artikleid analüüsisid siiski ainult teiste Euroopa riikide, Balti riikide või Lõuna-ELi riikide statistikat, kuid käesolevas uurimuses on nende riikide tulemuste samaaegne analüüsimine ja võrdlemine selle magistritöö uudsus.

Ka teised varasemad artiklid mainisid tööpuudust, SKP määra ja inimeste finantsolukorda Lõuna-ELi riikides, nagu Itaalia, Hispaania, Kreeka. Näiteks Pereirinha ja Pereira (2021) ning Sánchez-Rodríguez jt (2022) kasutasid COVID-19 mõju analüüsimiseks leibkondade finantsolukorrale ja tööhõive tasemele logistilise regressiooni mudelit. Nad leidsid, et pandeemia põhjustas sissetulekute taseme, tavapärase tööaja languse ning töökohtade püsiva ja ajutise kaotamise Lõuna-ELi riikides. Käesolevas töös sai autor samad tulemused COVID-19 mõju kohta inimeste rahalisele olukorrale nende enesehinnangu põhjal, kasutades ka logistilise regressiooni mudelit.

Üldised tulemused ja analüüs näitavad, et EL-i lõunapoolsetes riikides (Itaalia, Kreeka, Hispaania) oli EL-i riikide ja Balti riikide võrdluses kõrgeim keskmine töötuse määr. Samuti oli EL-i riikide SKT elaniku kohta pandeemia ajal kõrgem kui Balti riikide SKT elaniku kohta. Lisaks mõjutas COVID-19 statistiliselt oluliselt inimeste finantsolukorda Balti ja Lõuna-EL-i riikides ning enesehinnangu põhjal oli nende majanduslik olukord halvem tavapärase tööaja lühenemise, töökoha alalise ja ajutise kaotamise tõttu ning neil oli suuri raskusi toime tulemisega. Siiski esines vanuserühmade lõikes erinevusi, Balti riikides (eriti Leedus) haigestusid täiskasvanud rohkem kui vanemaealised, kuid EL lõunapoolsetes riikides (Kreeka, Hispaania ja Itaalia) olid noored rohkem haiged kui täiskasvanud.

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