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PURSUIT OF HAPPINESS: MEASURING GENDER GAP AND DRIVERS OF SUBJECTIVE WELL-BEING IN THE BALTICS

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**PURSUIT OF HAPPINESS:
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Abstract

The aim of this study is to analyze (1) what are the main factors, which influence female and male happiness level in the Baltics, and (2) if there is a gap in subjective well-being with regard to genders. The study covers the period of 2003-2012. Using data from European Quality of Life Survey the authors employ ordered probit regressions with different specifications to address the research questions. The authors find that household structure and size, health, age, and income, are the most significant factors for people's happiness in the Baltics. There are similarities, as well as differences in drivers of subjective well-being between genders. Additionally, the authors show that gender gap in happiness exists in the Baltics. In year 2003 the gap favors male population, but in 2012 the gap has shifted to be in favor of females. Finally, the results show that reported subjective well-being for both genders has decreased during the covered period.

Keywords: subjective well-being (SWB), European Quality of Life Survey (EQLS), happiness, happiness determinants, genders, gender gap.

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1. Introduction

Most people would agree that they prefer to live in societies, which encourage and cultivate the happiness of their people. The importance of happiness in human life is recognized throughout history: starting from the United States Declaration of Independence of 1776, which put “pursuit of happiness” among things, which any person has “unalienable right” for (Frey & Stutzer, 2002), and finishing with some countries nowadays adopting the measure of Gross National Happiness instead of Gross National Product to estimate well-being of a nation (Sachs, Helliwell, & Layard, 2013).

At the same time, most people might believe that one’s happiness is completely in person’s hands. That it depends only on person’s preferences and it is not a national policy concern. Fortunately, this traditional view is being changed over time. Years of research in fields of economics, sociology, psychology and others prove that happiness can be measured, and it is related to many areas of human lives, which can be improved on a national level.

The amount of existing literature on economics of happiness shows that the importance of this topic is increasing over time. Researchers attempt to study the relationship between life satisfaction level and various aspects of lives of across nations and societal groups. They manage to find various causal links, such as happiness and productivity relationship, happiness and creativity correlation on the national level and others. Happy people have longer lifespans, show higher productivity, often earn higher income, and are citizens, who are less likely to emigrate (Diener & Chan, 2011; Sachs, Helliwell, & Layard, 2013). All these things point out additional reasons, why happiness and well-being are things to care for on a national level.

World Happiness Report 2013 shows how happiness levels fluctuate from year to year, as well as across countries. It is seen that some countries show consistent improvements, while others are falling behind. These changes appear because of increase/decrease in favorable conditions of happiness determinants.

Numerous potential factors, which cause changes in happiness level, have been studied over the past decades. Some researchers believe that the biggest influence on happiness is made by personality traits. Others argue in favor of impact of socio-demographic and socio-economic factors. Thus, there is still an ongoing discussion about happiness indicators, their effect for different societal groups, as well as the sizes of these effects (Diener, Suh, Lucas, & Smith, 1999).

Having in mind that happiness level and its determinants vary over the countries and years the authors focus their research on the Baltics. There is no analysis conducted on the determinants, which influence happiness level in any of the three states. Knowing the determinants of subjective well-being would help understand the challenges and strengths of the societies. It would also point out specific places where improvements are needed the most, and where these improvements will have a bigger impact. The latest “Global Happiness Index” rankings presented by the United Nations Organization put Latvia, Lithuania and Estonia to 106th, 60th and 72nd places respectively, among a bit less than 160 countries worldwide. Such a low position in global happiness scale is hardly justified for developed and democratic societies, which are in the top half of the world according to GDP per capita, human rights index and many other essential indicators. Such low positions also point out a need for actions and targeted improvement of aspects of human lives, which are found to be essential for happiness of the Baltic people.

The authors focus on the period 2003-2012. This time was filled with many remarkable social and economic events for the Baltics. Higher integration to Western and Central European community brought new opportunities for all three countries. Among them are access to new jobs and trade channels, more education options and many other things, which were either not available or much more limited before. All these things should have changed the lives of Baltic people for the best. At the same time rapid economic growth has increased the inequality between different social groups while the recent economic crisis has left large parts of population in debt.

By analyzing different life domains the authors are eager to reveal some meaningful insights about what influences the happiness of people in Latvia, Lithuania and Estonia, as well as identify areas, which should be targeted to improve the happiness level in these countries.

Instead of looking just at general trends, the authors will research the situation on a gender level. It has been proved by numerous researchers that some determinants of subjective well-being have different influence on female and male happiness. This difference is expressed either in size of the effect, or in significance of a particular factor (Frey & Stutzer, 2002).

On the basis of the information and concerns above, the following research question has been raised:

What socio-economic and socio-demographic factors were influencing female and male subjective well-being in the Baltics during 2003-2012?

Apart from uncertainty about the drivers of happiness, there are possible discrepancies in how happiness level changes for women and men over time. It means that, independently of initial state, happiness can be increasing/decreasing for one of the genders more, than for the other. A revolutionary study by Stevenson and Wolfers (2009) showed that over the past 35 years female happiness level in the US has declined both absolutely and relative to men. It happened despite the fact that by many objective reasons (e.g. educational attainment, access to healthcare resources, opportunities outside marriage etc.) an enormous progress was made in terms of gender equality (Stevenson & Wolfers, 2009). Looking at the Baltics, the gap between the genders is still present in many categories. The gap is in favor of men. For instance, in Latvia, Lithuania and Estonia, respectively, there are only 23.0%, 19.1% and 19.8% seats in national parliaments that are held by women (data from 2011); only 21.4%, 14.3%, 8.3% of women who are in ministerial level positions (as of 2010); only 31.3%, 15.1%, 25.8% of firms had a female top-manager in 2009, among many other cases (World Bank, 2009-2011).

The conclusions of Stevenson & Wolfers put forward the idea of a possibility of a similar pattern in development of SWB in other countries. It may, or may not, be related to the fact that different things matter for happiness of each gender. And the statistical observations given above explicitly show that gender inequality and misrepresentation does take place in the Baltic states.

Hence, the authors raise the second research question for this paper:

Is there any gap in development of subjective well-being between the genders in the Baltic countries?

By examining the determinants of happiness with regards to gender differences, the authors also hope to bring the Baltic region closer to more developed countries, where public happiness and issue of gender inequality gain significant amount of attention. This is the case, for example, in some Scandinavian countries, where special groups and institutions are formed to address these problems (Norden, 2011).

The study is structured in the following way. Firstly, we look at the existing literature and research done on the topic. We emphasize the importance of economics of happiness, describe ways of measuring happiness and make a brief overview of the factors, which are shown to be statistically significant over the years with regards to happiness determination. Afterwards we describe the data and methodology, which are used for the research. The next section explains the results and gives a discussion about the outcomes of the research. Finally, bibliography and appendices are provided.

2. Literature Review

This section will present theoretical background and existing approaches, which are employed by researchers studying subjective well-being. First part introduces the concept of economics of happiness, analyzes different ways to measure subjective well-being, and methodologies used by researches. Second part reviews different groups of determinants of subjective well-being. The section is ended with hypotheses for the research.

2.1. Economics of Happiness

For a long time economics researchers believed that happiness is influenced solely by income level: higher income makes more goods and services affordable, therefore increasing consumption, and thus, making people feel more satisfied with their lives. However, few decades ago Easterlin proposed the idea that income and happiness are related only to some extent. He argued that once people satisfy their elementary needs there is no strong correlation between the two variables on the national level (Shin, 1980). Hence, income had lost its position as the key element that affects happiness of the society, and scientists accepted the idea that person's well-being may be influenced by various factors. This opened new areas of research for economists.

Already for a long time economists agreed that people have different preferences; and that person's subjective well-being might be equally affected by material and non-material factors (MacKerron, 2012). For instance, some people choose a job with a higher salary, while others prefer jobs with lower payments and higher individual rewarding or recognition from society. It was also proven that social conditions, created by countries' governments, can have a big influence on happiness level in societies (Bruni & Porta, 2005). Thus, economics of happiness have started a new trend of economics that includes and analyses various patterns and reasons, which might affect general well-being of a society and the well-being of different groups within it. This field also takes into consideration the importance of rational and non-rational behavior of human beings, as well as the key reasons, which influence this behavior (Graham, 2005).

Economics of happiness is considered to be a transformational view in the field of economics: it combines knowledge of psychology and sociology in order to analyse the most important determinants of people's happiness. This field of study is considered to be very important for a country's development. Nation's level of happiness plays a crucial role in

assessing current or future success of the country. It is important to discover factors, apart from money, which determine people's happiness, and make sure these factors are contributing towards happiness. Because in a society, where there is no more to individual happiness than money, motivation for larger personal wealth leads to inequality within it, rather than improvement of life quality of for all members of society (Sachs, 2011). Therefore, it is valuable to identify drivers of subjective well-being in a society (both in general and for specific groups), and analyze if conditions for positive development of these drivers are favorable or not.

Approach to happiness on a national level also brings benefits on a large scale. The idea that happier people work harder, are more productive and creative is supported by many researchers and successful entrepreneurs (Oswald, Proto, & Sgroi, 2008; Amabile, Barsade, Mueller, & Staw, 2005; Womack, 2013). The positive relationship between productivity and happiness, with latter causing the former, makes it crucial for a government to ensure that its population is happy. The effects of productive, innovative and creative society can lead to high national achievements. Productivity leads to improved country's competitiveness and growth of wealth for all its citizens. Happy people are less likely to leave the state they live in (including youth and people of the working age); therefore, more workforce will be contributing to the country's prosperity and further growth (Polgreen & Simpson, 2011). Productive and innovative states are also more likely to attract foreign investments. Knowing, which factors determine happiness level of a society and different groups within it can make all these achievements not only possible, but also accelerated; with clever, well-informed and targeted policy decisions.

2.2. Measurement of Subjective Well-being

In attempts to study individual or society's happiness level, happiness determinants and their effects economists tried to use different tools. For a long time they looked at people's revealed preferences (actual decisions, choices) and economic theory predictions. Economists believed that these two approaches give an answer on what makes a person happy. However, there is vast evidence that people tend to undertake actions, which do not always have positive effect on their happiness level: they fail to learn from past experiences, have selective rationality, act contradictory to what they think is best for them etc. Having in mind all that, it is reasonable to conclude that one cannot fully rely on person's choices or

rationality while analyzing happiness level and its determinants (Kahneman & Krueger, 2006).

There exists another option to measure happiness level. One can look at self-reported surveys that reveal individual's subjective well-being, which is commonly referred as a close synonym of happiness (Conceição & Bandura, 2008). This measurement of subjective well-being can be implemented by directly questioning people about their happiness and life-satisfaction. This approach should provide a more comprehensive picture, since the notion of subjective well-being is built on the idea that every person is able to decide on his/her happiness definition and good life image.

Researchers use this method to collect results from various surveys, which are designed in order to get general impression about life satisfaction level among different people. Question formulation and assessment varies from survey to survey. For instance, one of the standard questions of life satisfaction is "Taken all together, how would you say things are these days – would you say that you are very happy, pretty happy, or not too happy?" (Frey & Stutzer, 2002). Different response scale is used in European Quality of Life Survey. Questions there are of the following form: "All things considered, how satisfied are you with your life as a whole these days?" The responses measured in a range between one and ten (Eurofound, 2012).

The biggest advantage of these questions is that they limit paternalism (assumption that one or another option is good for a human being by default), thus people are able to make personal judgments about their level of their life satisfaction (Waldron, 2010). To make this sort of measurement without direct questioning, one would need to take into account variety of factors, which significance can be strictly individual in every case. For instance, while evaluating their life satisfaction level people usually relate themselves to others, include changing life circumstances, past experience and future prospects, and only then make judgments. Hence, direct questioning as a measure of subjective well-being can be considered the most inclusive one (Frey & Stutzer, 2002).

There is still certain skepticism from some researchers about whether there is a value in measuring SWB, and whether it is possible at all to evaluate it. This concern was specifically addressed in 2009 by the Commission on the Measurement of Economic Performance and Social Progress, which strongly supported subjective well-being measurement. It was outlined that subjective well-being fulfills requirements of being (1) theoretically rigorous; (2) policy relevant; (3) empirically robust. By this the Office of National Statistics in the UK means that the well-being measurement is acknowledged in

philosophical theory, as well as recognized politically and socially (Dolan, Layard, & Metcalfe, 2011). The Commission also mentioned that it is possible to collect reliable data on the SWB (Stiglitz, Sen, & Fitoussi, 2009). Lastly, they emphasized that subjective well-being touches upon different aspects of human life. Thus, studies of it can lead to better conclusions on which areas or policy concerns need more attention from governments and societies.

The fact that it is possible to measure subjective well-being does not bring too much value just by itself. It is necessary to choose proper methodology in order to study subjective well-being and get results, which would be applicable for solving problems.

2.2.1. Methodologies

In order to understand effects of various factors, which potentially can influence happiness, researchers tried to come up with a suitable model for the analysis. Scientists from different areas use different models in order to examine subjective well-being. Absolute majority of the models falls under either of two categories: Ordinary Least Squares (OLS) or probit models. OLS regression model is mostly used in psychology and sociology studies, whereas ordered probit regression model is more commonly used in economics field (Blaauw & Pretorius, 2013).

The OLS model examines one-time surveys that capture results from a single year and do not have panel data (MacKerron, 2012). It has an advantage of being a simple tool to estimate basic relationships and produces coefficients that are easy to interpret. For example, this technique was employed by the European Survey researchers while analyzing the relationship between subjective well-being and various life domains for year 2011, the last round of EQLS (Eurofound, 2012). Output of this model can be found in Appendix 1. OLS model allows getting an impression, which factors and in what direction can have an influence on SWB. In spite of the advantages outlined above, the model is very basic and is not suitable for more sophisticated analysis: it fails to deal with outliers, its R^2 can go up because of the reasons, not connected to better model fit (e.g. larger number of independent variables makes R^2 go up), possible heteroskedasticity can impact results, it is not designed to deal with the noise in independent variables etc.

Second group of studies, which analyse factors influencing subjective well-being more in-depth and over the years, use ordered probit regression model. This methodology is recognized by a great number of scientists (Helliwell, 2003). It is the most suitable model for analysing ordered dependent variables (i.e. variables that are measured in a scale, with equal difference between all values), which have greater than just two values, as it is in case of

usual probit regression. The commonly used econometric function (in its general form) for this model is expressed as

$$H_{it} = \alpha + \beta X_{it} + \varepsilon_{it} \quad (1)$$

Where H_{it} is a measurement of subjective well-being on a scale (usually three-point or ten-point), and $X = x_1, x_2, \dots, x_n$ are explanatory variables, for example, socio-demographic and socio-economic features of individual i at time t . The model is built to capture the relationship between subjective well-being and other variables (Frey & Stutzer, 2002).

Some researchers add different control variables, dummy variables or fixed effects, depending on the specifics of their research. For instance, Stevenson & Wolfers, in their study “Paradox of Declining Female Happiness” use ordered probit with year*gender fixed effects in order to assess happiness by gender, and get data to calculate a gap between genders (Stevenson & Wolfers, 2009).

Results obtained from ordered probit regression can explain the sign and significance of explanatory variables. The main drawback of this model is that coefficients are hard to interpret (Blaauw & Pretorius, 2013). Due to more advanced features and higher robustness of probit regression model on comparison to OLS, the authors will use it in this research.

In the following part we present some of the most important and widely recognized indicators, which are proven to have significant impact on happiness across different studies.

2.3. Drivers of Subjective Well-being

In 1960 Wilson has proposed two ideas about subjective well-being and causes of happiness. The first one stated that if a person satisfies certain needs, which are related to happiness, then this person should feel happy; however, if these needs are unsatisfied then the person is unhappy. The second one claimed that person’s happiness depends on psychological factors such as expectations, adaptation process, comparisons with others, core values and other similar factors (Diener et al., 1999). Since these ideas were put forward, there have been many studies, which analyzed both of them, in order to find out the true causes of happiness. Different factors, which might influence person’s happiness, have been evaluated. First, the biggest attention has been devoted to demographic factors.

2.3.1. Demographic and socio-demographic factors

In this section we will present a short overview of demographic and socio-demographic factors that have been shown by previous researches to have an influence on SWB. The factors include age, marital status and gender.

2.3.1.1. Age

A few researchers stated that old people reported higher level of happiness compared to younger ones (Horley & Lavery, 1995). It has come as a surprise, because in modern societies it is often believed that old people should be less satisfied with their lives due to the “youth trend” exploration (Frey & Stutzer, 2002). Stroebe and Stroebe (1987) explained this phenomenon by saying that old people have lower expectations, smaller gap between life-goals and realistic achievements (Diener et al., 1999). However, not all researches have fully agreed with the idea of positive correlation between age and life satisfaction. Some of them argued that the relationship is nonlinear and actually has a U-shape. Hence, after controlling for factors such as health (in many cases happiness strongly depends on health conditions) it has been found that lowest happiness is reported around age of 40, whereas younger and older people report higher scores on happiness (Blanchflower & Oswald, 2004).

2.3.1.2. Marital status

In many cases marital status is proved to be significant in determining one’s subjective well-being. The positive correlation has been shown in the study of the USA population (Diener et al., 1999). The study suggests that married people score higher on happiness scale in comparison to people who have never been married. Moreover, in case of non-married people, those who live together with a partner are also more satisfied with their lives in comparison to those who live alone.

Regarding happiness and marriage relationships, there is also a question, whether it is marriage that makes people happy, or whether it is just that happy people are the ones more likely to get married than unhappy people. In their study Stutzer and Frey (who made the research on German population) find that happier singles are more likely to opt for marriage as well as that benefits from marriage vary widely in cases of different couples (Frey & Stutzer, 2006).

Despite the fact that married people might be more satisfied with their lives than unmarried people, there is uncertainty, to whom marital satisfaction is more important: to men or women? (Frey & Stutzer, 2002).

Therefore, gender effect on subjective well-being have also gained great amount of attention. Several scholars, Bourque (2003), Calasanti (1996), Pinqart and Sörensen (2000) presented results that male and female subjective well-being is affected by different determinants. It has been shown that women happiness depends more on socio-demographic, while men happiness depends more on socio-economic factors (Gaymu & Springer, 2012).

2.3.1.3. Gender

Stevenson and Wolfers (2009) tested development of male and female subjective well-being in the USA covering the time period of 35 years. Using ordered probit regression model with year*gender fixed effects and different control factors, they concluded that despite the achieved improvements in gender equality movement, there is a clear tendency of falling subjective well-being for women, absolutely and relatively to men (Stevenson & Wolfers, 2009). They found that in 1970s more women than men had higher level of life satisfaction. However, the situation started to change in 1980s, when more men reported higher happiness, and more women reported to be “not too happy”. Similar results were presented in other study too (Blanchflower & Oswald, 2004).

Other authors maintained the idea that happiness level does not differ across genders (Diener & Ryan, 2009). The only interesting fact they found was that women had chosen more extreme answers such as “extremely happy” or “extremely unhappy”. The latter was explained by women’s ability to experience emotions more intensely and frequently. Hence, it was concluded that there is no significant differences in average subjective well-being for different genders, but higher number of women appear at the extreme ends of well-being scales (Diener & Ryan, 2009).

The study by Roland Inglehart focused on different age groups regarding gender differences. The analysis showed that younger women are more likely to be happier than younger men. However, women over 45 are less satisfied with their life than men of a similar age (Inglehart, 2002). It is believed that this pattern has appeared due to the influence of the mass media. Information mostly channels promote images of young and good-looking women, while reducing the attractiveness and importance of older women (Inglehart, 2002).

2.3.1.4. Health and education

Some researches find that “good health” can make a positive impact on person’s happiness level (Diener et al., 1999). This proposition is strongly supported by the study, which analyzes the relationship between happiness and self-reported health level. It shows that people are more satisfied with their health and eventually with their lives in wealthier countries, where health system is highly developed (Deaton, 2008). However, the situation in Eastern European countries is described differently. Here health satisfaction level is rather low (Deaton, 2008). Therefore, it is interesting to test the relationship between subjective well-being and self-reported health in the Baltic region.

Looking at the findings regarding correlation between education and happiness one can see various ideas. Some research says that there exists a very small but positive relationship between these two variables and that more educated people are more satisfied with their lives (Diener et al., 1999; Blaauw & Pretorius, 2013). However, there is a belief that this relationship is actually very ambiguous as education might correlate with other factors, such as income etc. (Sachs, Helliwell, & Layard, 2013).

2.3.2. Personality factors

Another indicator, which is proven to have an effect on subjective well-being is personality itself. The link between personality and happiness has received a lot of attention, and numerous different studies have been conducted and published in order to explain this relationship over the years. There are three most influential theories about relationship between personality factors and subjective well-being are temperamental predisposition theory, dynamic equilibrium theory and personality traits theory.

Temperamental predisposition theory argues in favour of the view that genes affect human character, and character has a large impact on one’s happiness. However, over the years researches have not agreed on how much of person’s happiness one can explain only by looking at genes since there are always plenty of other factors. Moreover, many researches challenge this theory and downplay its importance (Diener et al., 1999).

Dynamic equilibrium theory suggests that each person’s temperament creates a baseline level of happiness, which is usually maintained by individual behaviour. Even though positive or negative events or accidents might increase or decrease reported subjective well-being’s fluctuation, in the long run each person returns to his/her baseline level of happiness (Diener et al., 1999).

Personality traits theory supports evidence that some specific personal characteristics have a great influence on subjective well-being. One of them is extraversion. Researchers have found that extraverts reported higher happiness level when compared to introverts. Kwan, Bond and Singelis (1990) found a strong positive correlation between self-esteem and life satisfaction while analysing the USA. However, they got opposite results in case of Hong Kong. Thus, it was reported that high self-esteem might increase subjective well-being in countries that support individualism, whereas in countries with more collectivistic culture self-esteem reduces individual happiness level. Optimism was also examined. Theory predicts that optimism helps individuals to maintain positive future expectations, hence people are willing to work more towards the goals they have set. Thus, at the end of the day, optimism increases their satisfaction level (Diener et al., 1999).

Lastly, the big interest of researchers is in the importance of adaptation while talking about happiness. Evidence shows that our emotion and brain system mostly reacts to recent events. All past experience loses its importance over time, because people adapt to the current situation (Diener et al., 1999).

Overall, the effect of personality factors on subjective well-being are more commonly explored by psychologists and sociologists, rather than economists (Helliwell, 2003).

2.3.3. Socio-economic factors

Talking from economic point of view, research shows that personality, demographic and socio-demographic factors are not the most important ones when analyzing happiness. Mainly it is because a significant part of them is affected by economic conditions. For instance, optimism level of a nation increases together with economic growth of the country. People's health or education levels also strongly depend on the general health and education system of the country, largely due to quality and costs of provided services. Female and male happiness might be different also because of country's culture and various socio-economic factors. Hence, researchers have started to dig into relationship between happiness and socio-economic indicators (Frey & Stutzer, 2002).

2.3.3.1. National income

Initially, the biggest attention was paid to correlation of income level and happiness. A great number of studies looked at income-happiness relationship. Two main questions in

this relationship are (1) whether people in rich countries are happier than those in poor countries; (2) whether people with higher income are happier than those with lower income.

It was shown that people who live in wealthier countries are on average happier than people who live in poorer countries. Researchers examined income by using exchange rates as well as purchasing power parities so that international dissimilarities in cost of living would be controlled for (Frey & Stutzer, 2002). Veenhoven (1991), Inglehart (1990), Inkeles and Diamond (1986) also demonstrated that there is a strong positive relationship between individual happiness level and economic growth of the country (Diener et al., 1999). In Denmark, Germany or Italy people also have reported higher subjective well-being during times when income per capita is growing (Frey & Stutzer, 2002). However, when scientists examined the relationship further, they concluded that increase of national wealth does not always cause higher happiness for people. Studies done by Blanchflower and Oswald (2000), Myers (2000), Kenny (1999), Lane (1998) and Easterlin (1974, 1995) showed that despite economic development (growth of income per capita) in the USA, the UK or Belgium, the average subjective well-being has not changed or has even decreased in these countries (Frey & Stutzer, 2002). In another study, where 12 European countries were examined, no correlation between real GDP per capita and life satisfaction was found for the period 1975-1991 (Tella, MacCulloch, & Oswald, 2003). Hence, there are contradicting results presented regarding country's welfare and its citizens' subjective well-being. While some researchers concluded that improved economic circumstances do affect person's subjective well-being, others found that this statement is not universally valid.

This led to the conclusion that there are more factors, which potentially affect people's happiness.

2.3.3.2. Personal income

Other studies analyzed the relationship between person's individual income level and reported subjective well-being. The general hypothesis was that people's happiness grows together with the income level. This hypothesis was examined and supported in the USA by Blanchflower and Oswald (2000), and Easterlin (1995, 2001); in the European Union countries by Di Tella, MacCulloch and Oswald (2001); and in Switzerland by Frey and Stutzer (2000). In these studies correlation between individual income and subjective well-being was shown to be statistically significant, when tested using simple regression as well as multiple regressions with a great number of control variables (Frey & Stutzer, 2002). One of the explanations for this relationship is that people with more money have more possibilities

and are able to consume more goods and services. In a way it makes easier for them to achieve certain goals and belong to certain social groups. However, some authors say the relationship between income level and SWB is non-linear. The effect is much stronger if one looks at people with very low, low or medium level income. However, once certain level has been reached, income has much lower or no impact on happiness (Stevenson & Wolfers, 2013). Hence, rise in wealth is not transformed into higher life satisfaction level in the same proportion at higher income levels (Frey & Stutzer, 2002). There might be many reasons why higher income does not simply translate into higher happiness. One of the favored explanations is based on individual's constant comparison between himself/herself and other people. People do not evaluate absolute values of earned income, they are more likely to be comparing their position in life with the position of others (Frey & Stutzer, 2002). Easterlin (1974, 1995) said that "if we would raise income to everyone, people would not get happier". It is because income would not be improved if one compares himself/herself to others (Diener et al., 1999).

Having this in mind, it is surprising that there is no research done on income-happiness relationship with regards to gender differences. It is possible that the results will be substantially different between genders due to the fact that women and men have different preferences in life. For instance, because in some more traditional societies men preserved their roles as "providers" and women as "homemakers", or simply because different genders have different points of reference to which they compare themselves.

2.3.3.3. Other socio-economic factors

Relation of macroeconomic factors to subjective well-being has been studied too. In analysis of over 10 European countries the relationship of unemployment and subjective well-being was analyzed for the years 1975-1991 (Tella, MacCulloch, & Oswald, 2001). The results of the study claimed that unemployed people are much more unhappy than employed people. The researchers had included a great number of other controls, which might affect happiness, so the finding should be quite robust. Other studies examined the same relationship while analyzing only particular groups of unemployed people. For instance, in case of unemployment happiness level of young and old people decreases less than for middle age people (Frey & Stutzer, 2002). In case of Germany, females, who are older than 50, report the same level of happiness in both situations: when they are employed and when they are unemployed (Gerlach & Stephan, 1996). Clark and Oswald presented the idea that people with higher education are more likely to be depressed and unsatisfied with their life

(report lower subjective well-being) in case they are unemployed, rather than those who have lower education (Clark & Oswald, 1994). With regards to the relationship between genders, the results over different studies have not been consistent. Nevertheless, the idea that on average unemployment decreases happiness of males more than happiness of females is well supported (Frey & Stutzer, 2002).

Nowadays, some people believe that there is a zero-sum game in self-reported life satisfaction in our society. People assume that improved gender equality has brought some improvements for women at the expense of men. However, the gains from improved gender equality might be unequally spread among different social groups (Bjornskov, Dreher, & Fischer, 2008). Hence, in order to fully understand each gender and be able to create the best environment for both genders, one should carefully look at various determinants that have been proved to be significant in the field of happiness.

Therefore, taking into account existing knowledge about life satisfaction analyses, we propose the following hypotheses for our research:

H1: The socio-economic and socio-demographic factors, which shape female subjective well-being, are different from the socio-economic and socio-demographic factors, which determine male subjective well-being in the Baltic countries.

H2: For females in the three Baltic countries similar factors shape their subjective well-being; for males in the three Baltic countries similar factors shape their subjective well-being.

H3: There was a gap in development of subjective well-being between women and men during the years of 2003-2012 in the Baltics.

3. Data and Methodological Approach

This section introduces the European Quality of Life Survey dataset and provides general description of the data. The second part explains the applied methodology.

3.1. Data

The authors study the subjective well-being (SWB) of women and men in Latvia, Lithuania and Estonia, over the decade of 2003-2012. They use data from European Quality of Life Survey (EQLS). The survey was conducted in 3 rounds: 2002-2003, 2007, and 2011-2012. It complies both objective and subjective circumstances and indicators of people's lives.

The survey includes 28-35 countries across Europe (depending on the round). The Baltic region countries are included in all three rounds (Eurofound, 2012).

The surveys cover approximately 95% of the target population. A representative of the target population is considered to be an adult, who lives in a private household during the survey period in each of the countries covered. The samples were designed in three stages. Firstly, primary sampling units were selected and sorted on the basis of geographic location and degree of urbanization in the region. Secondly, random selection of addresses and individuals in each primary sampling unit took place. In those countries, where there are no high quality registers, which cover more than 95% of population, researchers applied random route sampling. Finally, after registering all adults, interviews were conducted. The condition was that only 1 person per household could be interviewed for EQLS.

The number of obtained responses for the Baltics is the following. In the 1st round there are 1,004 respondents from Latvia, 1,001 from Lithuania, and 591 from Estonia. For the 2nd round, 1,002 Latvians, 1,004 Lithuanians, and 1,023 Estonians completed the EQLS interviews. In the final round 1,009 Latvians, 1,134 Lithuanians, and 1,002 Estonians participated in the survey. Gender breakdown by years of the survey can be seen in Table 1. Gender breakdown by country can be seen in Table 2.

Table 1: Year-gender breakdown of surveyed population

<u>Year</u>	<u>Gender of the respondent</u>		<u>Total</u>
	<u>Male</u>	<u>Female</u>	
2003	1,029	1,567	2,596
2007	1,166	1,863	3,029
2011	1,126	2,019	3,145
Total	3,321	5,449	8,770

Source: created by the authors.

Table 2: Country-gender breakdown of surveyed population

<u>Country</u>	<u>Gender of the respondent</u>		<u>Total</u>
	<u>Male</u>	<u>Female</u>	
Latvia	1,110	1,905	3,015
Lithuania	1,239	1,900	3,139
Estonia	972	1,644	2,616
Total	3,321	5,449	8,770

Source: created by the authors.

In the surveys subjective well-being is assessed using the following question “Taking all things together on a scale of 1 to 10, how happy would you say you are? Here 1 means you are very unhappy and 10 means you are very happy.” This question is going to be used as a dependent variable for both regressions, which we describe in the methodology part.

In all rounds of EQLS the repeated cross-sections are organized to help observe perception and satisfaction of Europeans with their lives. The questionnaire is constructed to cover a wide range of aspects of human life. For example, it asks about individual’s financial situation, education, housing, relationship within family, work-life balance, health conditions, subjective well-being, social inclusion and participation (Eurofound, 2007). The survey presents many indicators, which can extensively complement classic measurements of quality of living. Thus, the dataset allows for extensive analysis of causes of high/low levels of subjective well-being.

Consistency in survey construction, good sampling (both coverage of target groups and number of people surveyed), wide range of questions about both subjective and objective well-being, ensure that the EQLS data is a good source for further analysis and interpretation.

3.2. Methodological Approach

There are two main aspects of subjective well-being, which will be researched in this paper:

- (1) Drivers of subjective well-being for people in the Baltic region. The goal is to examine if these drivers are the same for (a) females and males (b) in Latvia, Lithuania and Estonia.
- (2) Changes in subjective well-being during 2003-2012 with regards to gender differences. The authors are keen to understand whether there is a gap in development of happiness level between women and men.

3.2.1. Drivers of subjective well-being for both genders in the Baltic countries

Firstly, the authors will examine possible drivers of subjective well-being. As seen in the Literature Review part different determinants affect subjective well-being over time and across countries. In order to examine possible determinants of happiness for different genders and separate countries the authors will run ordered probit regressions. The ordered probit

regression model has been widely used in similar research and is widely acknowledged among scientists in the field. The ordered probit regression will be run for Latvia, Lithuania and Estonia separately. Females and males will be examined as individual groups too. The general regression formula for this analysis is presented below:

$$\text{Subjective wellbeing}_t = \alpha + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n + \varepsilon_t \quad (2)$$

Here *Subjective wellbeing*_t is the dependent variable measured in a scale from 1 to 10. The authors chose the possible explanatory variables ($X_{1,2,3\dots n}$) on the basis of previous studies done for a number of countries. Independent variables are income quartile, age, education, employment, marital status, health, country's economic condition, problems with accommodation, standard of living, and household size.

This regression will help to determine the separate effects of various socio-economic and socio-demographic factors on the level of subjective well-being of both genders in all three countries. The results will show the significance of various factors for the genders and the Baltic societies. The authors will check if these factors are the same or different for all examined groups. On the basis of the outcome of this regression, the authors will answer the first research question as well as address hypotheses 1 and 2.

3.2.2. Marginal effects

Coefficients of ordered probit regression are not directly interpretable. For interpretation of coefficients of this model the authors calculated marginal effects.

In general, marginal effect of an independent variable is the partial derivative, with respect to this independent variable, of the prediction function $f(x)$. The formula for marginal effects looks like

$$ME_x = \frac{\partial f(x)}{\partial x} \quad (3)$$

The prediction function $f(x)$ contains all independent variables of the model.

The ordered probit regression, which is used in section 4.1 is a multiple-outcome variable. Therefore, marginal effects are calculated for each outcome separately (in STATA, a particular outcome is specified using *predict("number of outcome")* option.

The obtained marginal effects, if multiplied by one hundred, are measured in percentage points (pp).

3.2.3. Gap in subjective well-being by gender

A study by Betsey Stevenson and Justin Wolfers "The Paradox of Declining Female Happiness" suggested that for the period of 1972-2006 women's happiness in the US has declined both absolutely and relatively to that of men (Stevenson & Wolfers, 2009). In order to check for the existence of a gap in the development of SWB in the Baltic region, we apply the following methodology to estimate the changes in subjective well-being with the reference to the study mentioned above.

To assess the happiness differences by gender at certain points in time with reference to 2003 (year of the first survey round), we will use ordered probit regression model with year*gender fixed effects on repeated cross-section data. The regression is of the following form:

$$\begin{aligned} Subjective\ wellbeing_{i,t} = & \alpha + \beta_1 Female_i * (Year_t - 2003) + \beta_2 Male_i * \\ & * (Year_t - 2003) + \beta_3 Female_i + Controls_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (4)$$

The regression will be made for the Baltics as a whole, and will show the SWB changes over the years for females and males, as well as the gender gap in 2003 (direct output).

More detailed explanation for the parameters of the model is provided below.

In the regression above i represents an individual, and t denotes a year in which the individual i was surveyed for EQLS.

Note that we also include a dummy variable for a person being a female ($\beta_3 Female_i$). Thus, if an individual i is a female, then $Female_i = 1$, and coefficient β_3 will impact the outcome of the regression by capturing the effect of being a female in comparison to being a male.

We also include a component with male dummy variable ($\beta_2 Male_i * (Year_t - 2003)$), and by changing the year in the interaction term we allow the regression to capture the gender differences in changes of perceived (subjective) well-being. This effect is captured by coefficient β_2 .

Because we include the year variable ($Year_t$) as well as the interaction of the year variable ($Year_t$) and female gender dummy ($Female_i$), coefficient β_1 represents effect of passing years for the female part of the surveyed sample.

Term $\varepsilon_{i,t}$ represents the residual term, which includes all other things that were not captured by the regression model. $Controls_{i,t}$ are the variables, which, in case they are not explicitly included in the regression model, could bias the obtained results as they may correlate both with the independent variables of interest (time effects for both genders and female dummy), and the dependent variable (subjective well-being). We will have a range of control specifications which include various socio-economic and socio-demographic characteristics (e.g. income, marital status etc.). The result of the regression model will be presented for three cases: without control variables, controlling for age, and controlling for other factors.

For the ease of reference we subtract 2003 from a given year, because it is the year from which our data start. In their paper, Stevenson and Wolfers (2009), examine changes of women's absolute and relative SWB having 1972 as their reference point, and yearly data starting from then on up to year 2006. Understanding the limitations of available dataset from EQLS, we acknowledge that it is possible to study the changes of SWB and factors influencing it only in relation to 2003 and as a "dotted" picture: since EQLS rounds are conducted with 3-year breaks, the regressions do not allow for estimation of trends and continuous development of SWB.

Therefore, the results of ordered probit regression with year*gender fixed effects and dependent variable being "Taking all things together on a scale of 1 to 10, how happy would you say you are? Here 1 means you are very unhappy and 10 means you are very happy", will estimate the effect of passing years for a female (in relation to the reference year, but without speculations on what was happening in years between t and the reference year), the effect of passing years for a male and, finally, will capture the outcome for being a female in comparison to 2003.

With this regression we will get information whether subjective well-being for female and male has developed in the same way during the decade of 2003-2012 in 3 points of time.

In order to calculate the gap in 2011 as well as to see whether the gap widens or narrows down over years the authors made the following calculations:

$$\delta \text{ in time trends} = \beta_{Female} - \beta_{Male} \quad (5)$$

If both minuend and subtrahend are of the same signs, and the difference between them (δ in time trends) has a negative sign, it means that over the studied period, gap between males and females in happiness level has grown, in favor of men.

After that, it is possible to calculate the gender gap in development of subjective well-being in 2011.

$$Gender\ gap_{2011} = \delta\ in\ time\ trends * (Year_{2011} - Year_{2003}) + Gender\ gap_{2003} \quad (6)$$

After running this regression the authors should be able to conclude whether there was a difference in the levels of SWB between Baltic women and men over the period of 2003-2012, and the second RQ together with Hypothesis 3 will be addressed.

4. Overview and Analysis of the Results

In the following section results are presented and explained. To interpret the results of the regression, which examines factors influencing subjective well-being the authors use marginal effects (full tables are in Appendix 2 (Tables 7-12)). Table with significance coefficients is in Appendix 3 (Table 13). Finally, the authors evaluate how well the model explains the obtained results and present some limitations of the chosen methodology.

4.1. Gender Based Drivers of Subjective Well-being in the Baltic Countries

The first ordered probit regression, tests the relationship between subjective well-being and socio-demographic, socio-economic factors. The regression shows multiple cases of significant relationship between life satisfaction level and different life domains for the studied groups. The results of the regression are presented in Table 3 (robust standard errors are in the parentheses).

4.1.1. Age

The 'Age' variable has a statistically significant negative relationship with subjective well-being among Latvian and Lithuanian females and Lithuanian males (significance level is 1% for all three groups). The sign of the coefficient suggests that older people in the Baltics

are likely to be less happy than younger people. As an example of a possible interpretation, the authors look at a sample group of Latvian females. To interpret the results it is necessary to keep in mind that there are five age groups (18-24, 25-34, 35-49, 50-64, 65+) and to look at the table with marginal effects (Appendix 2, Tables 7-12). The interpretation is the following: on average, increasing age group decreases the probability that Latvian females will report their SBW to be 10 out of 10 by 2.013 percentage points (in comparison to females in lower age group). Overall, marginal effects show that increasing age group makes it more likely that a female in Latvia will report her subjective well-being in the range of 1-6, and makes it less likely that she will assess her happiness in the range of 7-10.

Appendix 4 shows the distribution of how people from every age group assess their subjective well-being. The figure shows that younger people (18-34) are much more likely to report high happiness level (8 out of 10). For older groups, the reported subjective well-being is much more evenly distributed. Most of the people aged 50-64 and 64+ years old report their happiness level to be 5 out of 10. Overall, average subjective well-being for a person aged 18-24 is 7.6; aged 25-34 it is 7.4; for group 35-49 it is 6.8; for group 50-64 the average result is 6.4; and for people older than 64 average subjective well-being is 6.3. There are two likely explanations to such results. First, in modern societies, there is a cult of youth and physical attractiveness, which is promoted in the mass media (Frey & Stutzer, 2002). Therefore, women and men who are not in their early adulthood (e.g. age group of 35-49) might suffer from decreased self-esteem. Second, even though the integration of the Baltic region in Western European community was rapid during the studied period, there are a number of aspects, according to which the Baltic societies are still very much behind. One of these aspects is that elderly people (mostly retired) do not receive enough government support, and the decline in SWB for older age groups might be connected also to this factor.

4.1.2. Employment

Another possible factor that can influence person's happiness level is his employment status. Relationship between employment status and subjective well-being is found to be positive and significant for Lithuanian females (at 5% level) and Estonian males (at 1% level). However, the regression showed that employment does not have a significant influence on four out of six groups, which were analyzed. Thus, in general, the authors cannot conclude that the influence of this factor on happiness of people in the Baltics is consistent and strong. Taking into account that there are a number of studies, which found that employment

influences subjective well-being, the authors would suggest that the relationship should be re-examined when more EQLS rounds become available (Clark & Oswald, 1994).

4.1.3. Household structure

The variable, which describes household structure, is significant for males in all three Baltic countries. It means that happiness of male population in the Baltic states is strongly affected by whether they have a partner or not, whether they have children or not, and in case they do, whether they are single parent or not. Since the variable represents groups (not simply married/single, with kids/without relationship), the authors cannot directly interpret the coefficients, only judge about whether relationship is significant or not. The interesting observation in this case is that the household structure is statistically significant only for males, but does not affect female happiness in the Baltics.

The authors should mention that in the previous studies “marital status” was presented as determinant, which positively influences happiness level for both genders (Sachs, Helliwell, & Layard, 2013; Diener, Suh, Lucas, & Smith, 1999; Stutzer & Frey, 2006). In this study the authors examine household structure, which is related, but not exactly the same variable as the marital status. Insignificant results for females might be partly explained by the difference between the two variables. However, it might also be explained by differences between genders in ability to structure life and have meaningful relationships without having a partner/family. It might be speculated that women are currently better at achieving happiness even when they are single. This would suggest that government policy should encourage family creation, and that current trend of decreasing number of marriages will affect male happiness more than female happiness.

4.1.4. Problems with accommodation

Accommodation problems affect only the life satisfaction of females in Latvia. This is the only statistically significant relationship the authors found among all groups. In order to find out possible reason for that, we looked at summary statistics. The statistics showed, that 297 Latvian females (~24% of the sample) report number of problems with accommodation to be three or higher. At the same time, only 183 Lithuanian (~14% of the sample) and 185 Estonian (~15% of the sample) females report the same number of problems with their place of living. Therefore, it seems that the female population in Latvia is considerably less satisfied with their living conditions, even in comparison to fellow Baltic countries, and it

really affects their well-being. The interpretation for the relationship between number of problems with accommodation and SWB of Latvian females is the following: every additional problem with accommodation decreases the probability of reporting happiness to be 10 out of 10 by 0.892 percentage points. Overall, increase in number of accommodation problems by one makes it likely that the reported subjective well-being will be between 1 and 6, and less likely that it will be between 7 and 10.

4.1.5. Health

Self reported health level has been shown to be strongly statistically significant (at 1% level for Latvians and Estonians, and at 5% level for Lithuanians) for male population in all three countries. The variable was constructed on the basis of people's evaluations of their own health condition, on the scale from 1 to 10. The discovered relationship between happiness level and health condition is positive, as expected. Interpretation of the relationship, using marginal effects (for Lithuanian male) is as follows: every point increase in self-reported health level makes it 0.587 percentage points more likely that person will report his subjective well-being to be 10 out of 10 in comparison to a person, for whom the health level is one point lower.

The logic behind the positive relationship is very simple. Healthy people are believed to have more opportunities in life, higher chances to find a partner; they are more likely to live longer etc. Thus, controlling for other factors, healthy people should be happier than unhealthy ones, both in terms of present and the future (Frey & Stutzer, 2002; Diener, Suh, Lucas, & Smith, 1999; Sachs, Helliwell, & Layard, 2013).

However it is interesting to find that health does not significantly affect female subjective well-being in the Baltics. The reviewed literature does not outline possible reasons for such relationship. We can speculate that male identity is more closely tied to being strong and healthy. Having health problems might be a big hit for male lifestyle. Health problems may also cause issues for men with more physically demanding jobs, and increase their risk of losing the income source, which further influences their well-being. These are all possible explanations, but closer research is needed to find out the true causes for the gender differences.

4.1.6. Standard of living

At 1% significance level standard of living is only important for females in Latvia. In general this result is quite surprising, but it can be explained by possibly high correlation of

standard of living with income level. Usually higher income also leads to higher standard of living. Nevertheless the authors believe that it is important to include it in the regression since “standard of living” is a much broader concept than simply income. People living in urban areas could technically have higher income, but due to pollution, traffic, crime rates or other problems they might be less happy when compared to people living in less urbanized areas. However we do not find strong evidence for such differences.

The variable is assessed by individual’s judgment regarding his/her overall living condition (on the scale from 1 to 10). The relationship between reported SWB and happiness is positive. Particularly, each point in self-reported satisfaction with standard of living increases probability of happiness to be 10 out of 10 by 0.256 percentage points for Latvian females.

The authors believe that other studied groups are not influenced by this factor because the determinant might vary only marginally in the Baltics. When a particular level is reached, marginal improvements can stop mattering. Baltic countries are considered to be developed, relatively to the rest of the world, thus, the standard of living is expected to be high. Similar to relationship between SWB and income, this relationship might not be that significant after a certain level.

4.1.7. Income

The only factor that is statistically significant among all examined groups is income. In the regression income is expressed as ‘income quartile’ based on equalised income for a corresponding country. At 1% significance level this determinant is important for both genders in Lithuania and Latvia, and males in Estonia. The significance of income for Estonian females is at 10% level. The correlation between happiness and income is positive, as expected. This means that a person who belongs to higher income quartile (earns more money) is more likely to report higher subjective well-being. If we look at marginal effects for a Latvian female, it can be concluded that every additional income quartile increases the probability of reporting the highest subjective well-being score by 1.767 percentage points. This is the strongest effect among all considered factors. The largest effect of additional income, in comparison to all other groups, is among Lithuanian females: probability to report happiness level to be 10 out of 10 increases by 2.736 percentage points with every income quartile. This positive relationship is consistent with the results of majority of researches, which examined income-SWB link.

Across many studies it has been shown that income has a strong impact on a person's well-being until certain level (Stevenson & Wolfers, 2013; Frey & Stutzer, 2002). However, the results do not show the same convergence for the Baltics. Subjective well-being is greatly affected by income level in all four income quartiles. This could be explained by pointing out that the variable has only four quartiles (or, in other words, groups). It is likely that even the top quartile of population (the top 25%) cannot be considered truly rich, and even for this quartile, income level still has considerable effect on happiness level.

4.1.8. Economic situation in the country

Another variable, which can possibly influence subjective well-being of a society is economic situation in the country. In case of the Baltics, the variable showed statistical significance for Estonian people. To interpret the size of the effect, every point increase in satisfaction with economic situation in a country of living makes it more likely for Estonian males to report happiness level of 10 out of 10 by 0.275 percentage points in comparison to an Estonian males who are one point less satisfied with the economic situation.

The reason why the factor is only significant for Estonians could be that in recent years, among the three Baltic countries, Estonia has been leading in many ways (like GDP per capita growth, innovation and technology etc. (Eurostat, 2013)). This success is being widely presented in the press, political campaigns and other sources. This might have caused additional attention and positive emotions of local people, and the fact that Estonia is doing well started being a source of pride for its society.

4.1.9. Household size

Another determinant that is statistically significant for five out of six studied groups is the household size. This variable refers to the number of people who live together in one household (including children). The factor is positively correlated with happiness level. This shows that people in larger households are more likely to report higher subjective well-being scores. The results are statistically significant at 1% level for males from all three Baltic countries. Regarding females, the factor is significant at 1% level for Lithuanian females and at 5% for Latvian females. To illustrate interpretation of the results, we can use an example of a Lithuanian male. In this case, every additional member of household is makes it more likely for Lithuanian male to report highest level of subjective well-being by 4.612

percentage points. These effects are among the strongest out of all considered factors, suggesting that close social relations among individuals are key to leading happy lives.

However, it is also worth noting that the scale applied to this variable is from 1 to 4+ people, which is still a relatively small household (e.g. two parents and two children). Therefore, there is possibility that the relationship would change or reverse if much bigger households were studied (Blaauw & Pretorius, 2013).

4.1.10. Education

Education is statistically significant for females, but not for males, in all three countries. At 1% for females in Latvia and Estonia, and at 10% significance level for females in Lithuania. However, the correlation sign differs across the countries. The correlation between education and happiness is negative for females in Latvia and Estonia. The coefficients suggest that educated women in these countries feel less satisfied with their lives. But the relationship between happiness and education is positive in case of Lithuanian. According to marginal effects, females in Latvia and Estonia are 0.178 and 0.263 percentage points less likely to report highest level of subjective well-being with improvement from primary education to secondary, or from secondary to tertiary. These are relatively weak effects. But in for Lithuanian females, improvement in education makes the highest life-satisfaction level more possible by 2.019 percentage points.

It is interesting to note that education does not have significant effects on male happiness in the Baltics, which suggests that men are able to self actualize independent of their education level. For females, since the effects have opposite directions it is hard to make any generalizations for the whole region.

Both positive and negative relationship between education and subjective well-being have plausible explanations (Blaauw & Pretorius, 2013; Helliwell, 2003). People with higher education are believed to have more opportunities in life (better jobs, higher chances to travel, communicating with more intelligent people among many others). For some groups of people, these effects might be the defining ones when estimating correlation between education and happiness. On the other hand, due to their analytical skills more educated people might be more likely to see and understand problems, injustices in the society, and it affects the way these people feel about life. Some researchers have shown that liberal and critical people are considerably less happy than conservative people who have an established set of beliefs, which they do not question (Taylor, Funk, & Craighill, 2006). This pattern, apart from modern studies, has been known already long ago. Gustave Flaubert, an influential and

recognized French novelist, has a famous quote, which dates back to the XIX century. “To be stupid, selfish, and have good health are three requirements for happiness, though if stupidity is lacking, all is lost.”

4.1.11. Addressing research question and hypotheses

On the basis of the presented results the authors can address the first and the second hypotheses as well as answer their first research question.

Hypothesis 1 reads, “*The socio-economic and socio-demographic factors, which shape female subjective well-being, are different from the socio-economic and socio-demographic factors, which determine male subjective well-being in the Baltic countries.*”

The obtained results show that the authors accept this hypothesis. Even though there are both similarities and differences between the genders, it is conclusive that overall, factors that shape subjective well-being of females are not 100% the same as factors, which shape subjective well-being of males. The cases of similarities are age, income, satisfaction with economic situation in the country of living, and household size. These four variables showed statistical significance for both females and males, at least in one country. For the ease of reference, the variables are grouped by significance in Table 4. The cases of differences are health, household structure, standard of living, problems with accommodation, and education. The latter group of variables showed statistical significance only for one of the genders.

Hypothesis 2 reads, “*For females in the three Baltic countries similar factors shape their subjective well-being; for males in the three Baltic countries similar factors shape their subjective well-being.*” This hypothesis also can be accepted. Female/male populations in the Baltic countries do share similar factors across all three countries, which affect their subjective well-being (e.g. education for females, health for males). While there are cases when factors, which matter for female/male population in one country, do not have any impact on the same gender in another country (which is true for such variables as accommodation problems for females, and age for males), for six out of ten studied variables the consistent significance relative to gender was found.

Therefore, the research question, which reads, “*What socio-economic and socio-demographic factors were influencing female and male subjective well-being in the Baltics during 2003-2012?*” can be answered in the following way. Overall, female subjective well-being in the Baltics was mostly influenced by income, household size, standard of living, education, age. Male subjective well-being in the region was mostly influenced by income, household size and structure, and health.

Table 3: Drivers of subjective well-being in the Baltics and among genders¹. Source: created by the authors.

Ordered Probit Regression <u>Explanatory Variable</u> ²	Dependent Variable: “Taking all things together on a scale of 1 to 10, how happy would you say you are? Here 1 means you are very unhappy and 10 means you are very happy”.					
	<u>Latvia</u>		<u>Lithuania</u>		<u>Estonia</u>	
	<u>Females</u>	<u>Males</u>	<u>Females</u>	<u>Males</u>	<u>Females</u>	<u>Males</u>
Age of the respondent	-0.2029*** (0.0447)	0.0028 (0.0503)	-0.1426*** (0.0349)	-0.2186*** (0.0479)	-0.0592 (0.0459)	0.0084 (0.0566)
Employment status	0.0370 (0.0293)	0.0118 (0.0457)	0.0523** (0.0246)	0.0249 (0.0353)	-0.0479 (0.0301)	0.1361*** (0.0422)
Household structure	-0.0506 (0.0449)	-0.1540** (0.0698)	-0.0385 (0.0432)	-0.1203** (0.0588)	0.0041 (0.0438)	-0.1295* (0.0786)
Problems with accommodation	-0.0899*** (0.0323)	-0.0514 (0.0361)	-0.0539 (0.0395)	-0.0318 (0.0487)	-0.0250 (0.0374)	-0.0551 (0.0554)
Health	0.0400 (0.0327)	0.1445*** (0.0294)	-0.0016 (0.0097)	0.0415** (0.0207)	0.0395 (0.0308)	0.1709*** (0.0330)
Standard of living	0.0258*** (0.0095)	0.0029 (0.0073)	0.0475 (0.0306)	0.0206 (0.0151)	-0.0073 (0.0166)	0.0130 (0.0097)
Income quartile	0.1781*** (0.0400)	0.1792*** (0.0639)	0.1558*** (0.0418)	0.1696*** (0.0578)	0.0875* (0.0451)	0.1475*** (0.0649)
Satisfaction with economic situation in the country	0.0010 (0.0026)	0.0133 (0.0091)	-0.0001 (0.0028)	0.0081 (0.0056)	0.0068* (0.0036)	0.0181** (0.0074)
Household size (including children)	0.1306* (0.0686)	0.2700*** (0.1006)	0.1931*** (0.0677)	0.3259*** (0.0836)	0.0855 (0.0725)	0.3955*** (0.1130)
Education	-0.0179*** (0.0017)	-0.0684 (0.1572)	0.1149* (0.0689)	-0.0500 (0.1059)	-0.0169*** (0.0026)	0.1319 (0.1397)

¹ Notes: ***, **, and * denote statistically significant coefficients at 1%, 5% and 10%, respectively. Robust Standard Errors are in the parentheses. $n_{total} = 8,770$.

² Age includes indicators for the following age groups: 18-24, 25-34, 35-49, 50-64, 65+; Employment status: Employed (includes on leave), Unemployed, Unable, Retired, Homemaker, Student, Other; Household structure: Single, Couple, Single parent, Couple with children, Other; Problems with accommodation: scale from 0 to 6+; Health, Standard of living, Satisfaction with economic situation in the country: scale from 1 to 10 (according to personal satisfaction); Income quartiles: equivalised income for a corresponding country (1 – lowest quartile, 4 – highest quartile); Household size (incl. children): scale from 1 to 4+ people; Education: 1 Primary or less, 2 Secondary, 3 Tertiary. All questions have “refusal” and “don’t know” versions.

Table 4: Statistically significant drivers of subjective well-being in the Baltics and among genders, grouped.

<u>Explanatory Variable</u>	<u>Latvia</u>		<u>Lithuania</u>		<u>Estonia</u>	
	<u>Females</u>	<u>Males</u>	<u>Females</u>	<u>Males</u>	<u>Females</u>	<u>Males</u>
Income quartile	✓	✓	✓	✓	✓	✓
Household size (incl. children)	✓	✓	✓	✓		✓
Health		✓		✓		✓
Household structure		✓		✓		✓
Education	✓		✓		✓	
Age of the respondent	✓		✓	✓		
Employment status			✓			✓
Satisfaction with economic situation in the country					✓	✓
Problems with accommodation	✓					
Standard of living	✓					

Source: created by the authors.

4.2. Gap in Subjective Well-being Between Genders

The second ordered probit regression with year*gender fixed effects tests whether there is a gender gap in the development of subjective well-being over the years. Table 5 presents the results of the regression.

The development of female and male subjective well-being, without any control variables, is shown in the first column of Table 5. The regression shows increase in happiness level for both genders. The fourth row presents the differences in effects of passing years for both genders (female-male). Since the result is positive, the authors can conclude that over the studied period, female happiness level grew more than male happiness level. The fifth and sixth rows outline the gender happiness gap, in 2003 and 2011 respectively. At the beginning of the sample period women reported lower level of life satisfaction than men. Despite the fact that in 2011 the gap is still in favor of men, it has significantly narrowed over time (decreased by approximately 25 times).

In the second column gender happiness level is presented controlling for age. During the studied decade the median age of all three Baltic countries increased by approximately three years: from around 38 years old in 2003 to around 41 years old in 2011 (Appendix 5, Figure 2). The authors control for age in order to find out whether increase in the median age had influence on gender gap in the Baltics. The regression with age control factor still shows that in 2003 the gender gap existed and was in favor of males. But in 2011, the gender gap has changed to be in favor of females. This means that age effects for female respondents could explain the size of gender gap in first regression. When controlled for these effects, the results show that women are on average happier than men in Latvia and the gender gap has reversed.

The third column presents regression results with a greater number of control variables. In this case the control variables, apart from age, are socio-economic and socio-demographic factors, such as employment status, education, marital status, income, accommodation quality and health. These control variables describe the outcomes of different life domains (unlike age, which is a parameter that changes independently on person's life choices and conditions). The account for these variables does not significantly change the results when compared to the second regression. There is still a gender gap in favor of males in 2003, and till 2011 it has changed into a gap in favor of females. The outcome for the gap in 2011 is slightly bigger than it was when the only control variable was age.

In all three specifications, the observed trend is similar: initially, there is a gender happiness gap in favor of males, which over time changes. In the first case the gap is reduced to a very small figure, while in the second and the third specifications the gap is first reduced and eventually is in favor of females.

In the first and second columns the outcome of the regression shows that both gender's happiness has increased over the period (although female happiness increased more than male, as it is explained above). The specifications added in the third column change the signs of coefficients (both of which are significant at 1% level), for both genders. It means that both genders have become less happy over the studied period, but again, the trend is consistent: women's decrease in happiness is smaller than men's. This is surprising finding since the increase in income over time would intuitively suggest that also subjective well-being should have increased.

4.2.1. Addressing research question and hypothesis

On the basis of the results of this regression, the authors can address their third hypothesis and second research question.

Hypothesis 3 reads, "*There was a gap in development of subjective well-being between women and men during the years of 2003-2012 in the Baltics.*" The evidence supports this hypothesis. There is indeed a gap since female happiness over 2003-2012 was developing disproportionately to male happiness. Unfortunately, it is not possible to directly interpret the absolute size of the coefficients. However the relative change of the coefficient shows that the gap in 2011 was considerably more in favor of women, than it was in 2003 in favor of men.

With regard to the second research question "*Is there any gap in development of subjective well-being between the genders in the Baltic countries?*" the authors can conclusively say that the gap exists. Models with different specifications consistently showed that gender happiness gap, which was in favor of men in 2003 has either extremely narrowed down or even became in favor of females in 2011. It means that happiness of females was increasing more (in case of model specifications 1 and 2)/decreasing less (in case of model specification 3) than happiness of males over the studied period.

Table 5: Happiness trends in the Baltics by gender, European Quality of Life Survey3.

Ordered Probit Regression with year*gender fixed effects	Dependent Variable: "Taking all things together on a scale of 1 to 10, how happy would you say you are? Here 1 means you are very unhappy and 10 means you are very happy".		
<u>Regression Coefficients</u>	<u>(1)</u>	<u>(2)</u>	<u>(3)¹</u>
Effect of passing years for a female	0.0138 ^{***} (0.0044)	0.0204 ^{***} (0.0044)	-0.0345 ^{***} (0.0092)
Effect of passing years for a male	0.0054 (0.0056)	0.0060 (0.0057)	-0.0544 ^{***} (0.0119)
Female Dummy	-0.0698 [*] (0.0385)	-0.0446 (0.0386)	-0.0301 (0.0950)
<u>Implied patterns in Gender Subjective Well-being Gap</u>			
Difference in time trends	0.0084	0.0144	0.0199
Gender SBW gap in 2003	-0.0698	-0.0446	-0.0301
Gender SWB gap in 2011(2012)	-0.0027	0.0707	0.1294
<u>Control Variables</u>			
Age ⁴		✓	✓
Employment, Education, Marital Status and Kids, Income, Accommodation Quality & Health ⁵			✓

Source: created by the authors.

³ Notes: ***, **, and * denote statistically significant coefficients at 1%, 5% and 10%, respectively. Robust Standard Errors are in the parentheses.

n = 4,951 because of the missing values.. EQLS data from rounds 2003-2011(2012). Gender gap in 2011 is evaluated based on the obtained coefficients (see methodology, formula (6)).

⁴ Age controls include indicators for the following age groups: 18-24, 25-34, 35-49, 50-64, 65+.

⁵ Employment status includes 7 categories: Employed (includes on leave), Unemployed, Unable, Retired, Homemaker, Student, Other; Education categories are: Primary or less, Secondary, Tertiary, Completed abroad (+Don't know and Refusal options)"; Marital status can be single, couple, single parent, couple with children, other; Kids stands for number of children in a household; Income is assessed in quartiles (1 - lowest, 4 - highest); Problems with accommodation: scale from 0 to 6+; Health is person's satisfaction with his/her level of health on a scale 1 to 10

4.3. Model Fit and Threats to Validity

This section will provide critical assessment of the used methodology. The authors will speak about models fit and possible limitations of the results.

4.3.1. Model fit

Ordered probit and logit regressions do not have equivalent of OLS's R^2 to measure goodness of fit of the model. For these regression models STATA output only provides pseudo- R^2 (by default calculated according to McFadden formula). Both formulas, of simple R^2 (7) and McFadden's pseudo- R^2 (8) are provided below.

$$R^2 = 1 - \frac{\sum_{i=1}^N (y_i - \hat{y}_i)^2}{\sum_{i=1}^N (y_i - \bar{y})^2} \quad (7)$$

Where N is the number of observations in the model, y is the dependent variable, \hat{y} is value of the dependent variable predicted by the model, \bar{y} is the mean of all values of the dependent variable.

$$R^2 = 1 - \frac{\ln \hat{L}(M_{Full})}{\ln \hat{L}(M_{Intercept})} \quad (8)$$

Where M_{Full} is the model with predictors, $M_{Intercept}$ is the model without predictors, and \hat{L} is the estimated likelihood (estimations of the model's parameters).

As it is seen from the formulas above, the measures use different approaches for calculating the R^2 values.

The numerator of simple R^2 ratio is the sum of squared differences between the actual and predicted values of the dependent variable. The denominator is the sum of squared differences of the actual values of the dependent variable and the mean of these values.

The numerator of McFadden's pseudo- R^2 substitutes the sum of squared errors with log likelihood of the full model (i.e. model with predictors). The denominator replaces the total sum of squares with the natural logarithm of likelihood of the intercept model (i.e. model without any predictors). The whole ratio gives the extent of improvement of the model without predictors offered by the full model.

While McFadden's pseudo- R^2 deals with (1) explaining the variability of the regression model and (2) assessing the improvement from null model to fitting model, it does not approach (3) the correlation of values predicted by the model with the actual values. R^2 that is calculated for OLS regression model satisfies all three of these points.

Overall there are a number of different formulas to calculate pseudo- R^2 , but none of them can capture all three approaches that are covered by conventional R^2 (UCLA: Statistical Consulting Group). Therefore, there is no consensus on how to measure goodness of fit for ordered probit regressions. Various types of pseudo- R^2 for both conducted ordered probit regressions are given in Appendix 6 (Tables 14 and 15).

For both ordered probit models ($Prob > \chi^2$) = 0.000, meaning that we can reject the null hypothesis that all regression coefficients are simultaneously equal to zero.

4.3.2. Threats to validity

The two of the most common problems with ordered probit models are that proportional odds assumption may not hold, and that errors might not be homoskedastic.

Proportional odds assumption implies that relationship between each pair of outcomes of the dependent variable is statistically the same. If the assumption holds, it means that there is only one possible set of coefficients for this model. If this assumption is wrong, then one model would not be enough to describe the relationship between each pair of outcomes.

As a dependent variable for both regressions the authors used self-reported subjective well-being, on a scale from 1 to 10. The scale breakdown is relatively detailed. A person is given a wide range of options to choose from, and it is reasonable to assume that options are related to each other proportionally. If the scale would be of a form "very happy – happy – extremely unhappy", then the assumption would be seriously questioned, as changes between "happy" and "very happy" are likely to be smaller than from "extremely unhappy" to "happy" states. Even though there is logical justification why proportional odds assumption should not be violated in this research, the authors admit that here is still a risk that a formal testing might reveal a problem.

To formally tackle this problem, there exists a Brant test, but it can be applied only to ordered logit regression model, not ordered probit.

Another possible problem with the regression is that heteroskedasticity of the error terms might take place. Error terms are homoskedastic when their variances are the same for

all cases. If it is not the case, then the parameter estimates might be biased. The most common causes for this problem are omitted variable bias (OVB) and model misspecification.

In this research, the authors use a set of variables for explaining subjective well-being, which are commonly used by many researchers (the Literature Review section speaks in details about that). Additionally, we control for/include more variables that can possibly affect SWB. By doing this the authors put every effort to minimize the probability of OVB and model misspecification issues. There are of course potentially important variables such as political views and religion, which could affect subjective well-being, but unfortunately the dataset does not contain this information.

In addition to the mentioned possible problems, some of the variables can be endogenous to the model. For example, composition of the household could be affected by the dependent variable. As it is mentioned in the literature review, there is still a debate about whether marriage and children make people happier, or it is initially happy people, who are more likely to marry and have kids. Since there is no strong proof for either of the sides, the authors must acknowledge a possible endogeneity of this variable.

5. Discussion and Implementation of the Results

“We must acquire a life style which has as its goal maximum freedom and happiness for the individual, not a maximum Gross National Product” say famous economists William Nordhaus and James Tobin quoting Paul Erlich in their paper “Is growth obsolete?” (Nordhaus & Tobin, 1972). Till recently, this proposition was widely disregarded on a national level. People and governments used to believe that being happy is individual’s responsibility, and the job of the government (perhaps, the main one) is to make sure that the economy grows at a sustainable rate.

Thanks to such researchers as Richard Easterlin this view is changing now. More research is being done on what factors can affect life satisfaction of people, and how to influence these factors with national policy. Governments start to recognize that caring for people’s happiness can bring benefit to the economy overall. Numerous studies recognized the relationship between happiness and productivity of people, which on a national level brings noticeable economic effects. Happy people are also less likely to leave the country they live in, and continue to contribute to the prosperity and growth of its society.

In this section the authors discuss possible implications of their findings in the context of what difference these findings can make, and what sort of changes should be made in some of the existing policies to address the identified issues.

5.1. Determinants of Happiness

In order to effectively address the existing issues with happiness levels in the Baltics, it is necessary to do two main things: identify the factors, which influence subjective well-being, and check if these factors are the same for different societal groups. On the basis of the results and further in-depth analysis, it is possible to make concrete policy propositions, which would target the weak spots and can improve the situation with happiness level in the region.

A number of changes and transitions, which took place in the studied decade, raised a lot of questions. How exactly did these changes affect the lives of people? Does the positive effect of more opportunities outweigh the negative effect of higher competition and social changes? Did growth in income increase the happiness levels as expected?

The results of the research show that male happiness in the Baltics is strongly affected by household structure. The authors find that fulfillment in family life projects on overall subjective well-being. While from the variable examining the household structure the authors cannot evaluate the precise relationship, but only judge about significance of the factor, there is another, related variable, which examines the household size. For this variable, the relationship is positive and significant for five studied categories out of six, which allows to derive conclusions for the Baltics overall. Since age group of covered population includes only people, who are 18 and older, it is reasonable to suggest that size of the household, in absolute majority of the cases, reflects whether a person has a partner and kids or not. Keeping in mind the strong positive correlation between household size and happiness, as well as the fact that all existing research done on the topic suggests positive relationship between marital status and subjective well-being, it is possible to derive the conclusion that married people with children are more likely to report higher subjective well-being than people who are single.

Considering these results in terms of the growing trend of late marriages, suggests that the benefits of delayed family creation might not be as apparent as they seem. More and more often it is believed that marriage and children is not a reasonable sacrifice when the

alternative is having more time to enjoy life and self-actualize at work. These choices in life are widely believed to make people happier. While it might be true for some countries, this does not seem true for the Baltic states. The regression shows that those individuals, who are single and with smaller household size are less happy than those with larger family size.

To address this issue, government might want to more actively promote family creation, and educate young people that possibility to fulfill yourself and achieve the goals does not contradict to being married and having children. Additional issue to tackle is extremely low children benefits, especially in Latvia, which are provided by the state. For example, in Lithuania and Estonia, average social protection benefits for children/family are 295 and 343 respectively, measured by purchasing power standards (PPS) per head. In Latvia, the figure is as low as 119 (Eurostat, 2011). Increasing this number would provide additional support and contribute to sense of financial security both for young families and those who are planning to create one.

Another factor, which requires attention, is health. The variable is statistically significant for male population in all three countries. While it is surprising that the effect is not significant for females, and existing literature does not offer a reason for that, it is still worth considering how to target this factor, since at least for one of the genders it matters a lot.

During the description of the results, the authors suggest that due to the fact that more men do physically demanding jobs in comparison to women, for some proportion of males diminishing health may cause unemployment and loss of income source. Another big risk is decreased self-esteem due to worse health conditions. To target this issue the government should be more active in promoting healthy lifestyle, educating people about healthy nutrition and in general pay more attention to prophylaxis. Another possible improvement is to promote a culture of being self-aware in terms of healthcare and visiting doctors more regularly. Employed people often postpone or skip these visits due to the lack of time or other reasons. As a result, they may face complications and irreversibly worsen the health. Since in the Baltics a lot of basic medical services are free of charge for people, the conditions for better healthcare are present.

Therefore, it is a matter of promotion of using the existing opportunities and educating people about importance well-timed health checks. To decrease health hazards resulting from professional work, there should be more regulation on security of working conditions, and in case people are employed in industrial objects, which are potentially

dangerous to health, they should be aware of that, and receive a fair compensation (both in terms of money and decreased retirement age).

Negative correlation between SWB and age can also be addressed by government policy. The ways to care about older people in the society are numerous: apart from increase in pensions (which is an obvious proposition since retired Baltic people have very low income), active lifestyle and social participation of people of all age groups should be advocated. Even though there is nothing much the government can do about the pop-culture promotion of the “youth brand” (which is likely to be overvalued in many cases), what is possible, is to campaign for representation of people of all age groups in various aspects of society. It is important that middle aged and elderly people get the message that the life is still ahead, there is still space for fulfillment of dreams, and opportunities to explore. It is crucial to further study ways to increase life satisfaction for older and middle aged people and improve their overall life quality, also independent of income.

Personal income still remains among one of the most influential factors driving subjective well-being in the Baltic states. Taking into account that Latvia, Lithuania and Estonia still have not caught up with the high income levels of, for example, Western Europe, the strong significance of this relationship is explainable. Baltic governments should keep focusing on increasing GDP per capita levels, since this is one of the main components, which determines, whether people are happy or not. Marginal effects for income are on average higher than for other variables, which suggests that this factor has one of the largest effects on subjective well-being among all others.

5.2. Gap between the Genders

Another part of the methodology examines the development of subjective well-being over 2003-2012. The authors find that gender gap in favor of males, which existed in 2003, evolved to be in favor of females by the end of the studied period.

Rather than simply assuming that the findings automatically mean that economic and societal changes, which took place during 2003-2012 failed to improve the lives of people (since both female and male time trends are negative in case of the third model specification, the one with the largest number of controls) in the Baltics, we also present several alternative explanations for the outcomes of the regression.

First, if we accept that happiness for both genders have indeed decreased over the studied period, there are a number of reasons why it can be the case.

The costs of economic integration with Europe may have outweighed the benefits of it. Apart from more opportunities for employment, education, and travelling, people had to face increased competition in job market, higher demands at work; many companies had to deal with new rivals, since countries' borders became free of customs and import fees. Additionally to that, the Baltics are among countries, which were hit the most by recent economic crisis. All these things resulted in a lot of people losing jobs, feeling less secure about their employment prospects and stability of current position, and simply facing higher stress in everyday life, which has possibly affected their level of happiness in comparison to previous, calmer and more stable life conditions.

Another possible reason, which could have brought decrease in subjective well-being level among the Baltic people, lies in the fact that with European lifestyle being more accessible, people can now compare their lives with a broader group of people, including Western Europeans. Such comparison clearly shows that Baltic population is still behind Western European countries in terms of wages, social benefits, life conditions etc. Broader reference group might have pointed out that lives of Baltic people are not measuring up with their German or British counterparts.

Second, the reverse trend in gender gap could be explained (at least to some extent) by age effects. In the second model specification, with age added as a control variable, effect of passing years for both genders is shown to be positive, but coefficient is significantly bigger for females in comparison to males. This means that age effects for female respondents could explain the size of gender gap in first regression. When controlled for these effects, the results show that women are on average happier than men in Latvia, and the gender gap has reversed.

Third, it is possible that there may be other essential socio-economic forces that have made the Baltic population less happy in comparison to 2003, apart from those that were controlled for in the model. Examples of such factors can be increased anxiety, decreased social participation, and others. Such aspects could have influenced both genders, and it is possible that the reason for decrease in life satisfaction over time lies there.

Finally, it is possible that changed economic and social circumstances introduced shifts in role of women in the society. With higher integration in Western Europe, women in the Baltics might have switched away from traditional female roles, which were considered the norm in Soviet and post-Soviet periods. It is possible that, following western pattern,

women are less concerned about getting married and having children, but more focused on prosperous career, travelling, exploring their opportunities and not wanting to be tied up to one place or person. Taking into account that the authors showed significance of household structure for male subjective well-being, such a shift in female behavior may have negatively impacted male happiness. This explains possible gap in development of happiness level between females and males.

The presented arguments analyze possible causes of (1) decrease in happiness for both genders; (2) what factor could have reversed the gender gap; (3) why the obtained results may not exactly reflect the actual changes over the studied decade; (4) why male happiness decreased more than female happiness over the studied period.

5.3. Suggestions for Further Research

In spite of doing their best in depicting the full picture of happiness trends by gender and various factors, which can possibly affect the subjective well-being of Baltic population, the authors recognize that the research can be further improved and expanded.

First way for doing that is to conduct a similar analysis when more rounds of European Quality of Life Survey becomes available. Longer period of coverage allows to verify the findings, as well as to derive new meaningful conclusions. As was pointed out previously, a more careful examination of relationship between education and employment to subjective well-being is needed.

Secondly, the topic may be examined taking into account psychological factors, for example, optimistic/pessimistic personality traits. Psychological factors comprise one of three groups, along with socio-economic and socio-demographic characteristics of factors, which can influence SWB. Therefore, inclusion of the psychological aspect should open up new perspectives on the research.

Thirdly, it is always possible to examine some additional factors, which may impact people's happiness. The authors covered the variables, which were previously shown to be significant across different countries, plus some additional ones. But EQLS dataset has hundreds of variables, which are still not explored.

Fourthly, it is possible to conduct the research for different social groups, not only genders. For example, factors influencing subjective well-being can be examined for employed/students/retired people; or religious/atheist groups of society.

Lastly, it might be interesting to compare trends in the Baltics with other countries, which are similar, at least in some aspects.

6. Conclusions

There is a lot of existing research, which studies happiness and factors that could possibly explain it. There are also studies, although very few, which are focused on the possible gap between females and males in subjective well-being. Apart from the fact that there are no studies of this scope for the Baltics in particular, there is also no concrete framework of factors, which would influence subjective well-being. Additionally, even though the gender gap in subjective well-being has been studied in the USA, it has not been given enough attention in different regions of the world.

This paper contributes to the existing academic research by examining factors, which affect people's happiness with relation to gender. The authors compare similarities and differences between both genders and attempt to derive common trends for the Baltic region. The authors find that female subjective well-being in the Baltic countries was mostly influenced by education, household size, age and income during the decade of 2003-2012. Male happiness in the region was mostly influenced by income, household size and structure, and health.

Additionally, we show the existence of happiness gender gap, which takes place both at the beginning of the studied period, as well as at the end of it. The transformation of the gap, which at the beginning of the covered period was in favor of males, and by the end of the studied decade became in favor of females, raises a number of provocative questions. The authors discuss the possible reasons for the gap, as well as for another observed phenomenon: over the decade both genders seem to get less happy than they were before. It questions the statements of politicians, who say that the decade of economic growth for sure brought net improvements in lives of people. While there, undoubtedly, were positive effects, they seem to be outweighed by the negative ones.

These findings also provide grounds for several possible policy propositions.

First, it may prove beneficial to concentrate the efforts on the promotion of family creation, not delaying it till late adulthood, as well as to give more support to young families by increasing child benefits in the Baltic countries. People now can have a wrong belief that family would constrain their self-fulfillment and career success. The findings of this research

suggest that fulfillment brought by family life has positive impact on one's happiness, therefore, the belief that freedom from family ties makes people happier should be reconsidered.

Second, the government must pay more attention to healthcare, increase individual awareness and responsibility for personal health, as well as safety of work conditions. It can be done through additional regulation and more frequent check-ups on working environment of potentially dangerous industries. People should be aware of the risk they take, and receive compensation in return. Additionally, even though governments have already created the conditions, where most of basic healthcare services are free of charge, politicians fail to point out the importance of regular check-ups and incentivize population to use the available services.

Third, policy makers should start taking into account the aging of population, and pay more attention that people of all age groups feel comfortable in the society. It can be done through promoting the opportunities and wider life choices for different ages as well as taking care of financial support for older people.

Fourth, income still significantly impacts happiness of people in the Baltics. Happiness of people, even of those who belong to the highest income quartile, is still affected by this factor. Therefore, among other things, governments should keep focusing on increasing income levels, because the Baltic societies are far from reaching the level, where this factor stops being significant.

Previous research suggests that higher happiness of a nation involves positive outcomes on a national level, leading to increase in productivity. Therefore, by improving the functioning of existing institutions and regulations, which are responsible for various socio-economic and socio-demographic factors on a bigger scale, it is possible to bring a large positive changes for the country overall.

Finally, in research titled "Subjective well-being: The Science of Happiness and a Proposal for a National Index" Diener points out that one of the hallmarks of subjective well-being is that it is subjective (Diener, 2000). This characteristic of the main focus of the paper makes it challenging to give definitive answers, but the analysis and questions introduced by this research, may indeed lead to a better understanding of happiness of Baltic societies.

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Appendix 1

Table 6: Determinants of life satisfaction. OLS regression.

<u>Socioeconomic indicators</u>	<u>Coefficient</u>
Aged 18-24 (ref = 40-59)	0.6
Aged 25-39	0.2
Aged 60-69	0.3
Aged 70 and over	0.5
Lives alone (ref = couple)	-0.2
Single parent	-0.4
Couple with child	0.3
Has own child	0.1
Unemployed (ref = employed)	-0.8
Unable to work	-0.3
Retired	0.1
Student	0.2
Health rated as bad or very bad (ref = fair, good, very good)	-1.1
Second income quartile (ref = lowest)	0.3
Third income quartile	0.5
Highest income quartile	0.8

Note: OLS regression model, unweighted; all coefficients are shown at 0.05 level of significance; All the listed variables (and some additional ones) are controlled for.
Source: Eurofound, 2012

Appendix 2

Table 7: Marginal effects (Latvia, female, percentage points). Statistically significant figures are in bold.

Ordered Probit Regression	Dependent Variable: Dependent Variable: “Taking all things together on a scale of 1 to 10, how happy would you say you are? Here 1 means you are very unhappy and 10 means you are very happy”.									
	Outcome									
Explanatory Variable	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
Age of the respondent	0.326	0.493	1.510	1.257	3.754	0.739	-0.652	-3.423	-1.759	-2.013
Employment status	-0.059	-0.090	-0.275	-0.229	-0.684	-0.135	0.119	0.624	0.321	0.367
Household structure	0.081	0.123	0.377	0.314	0.937	0.184	-0.163	-0.854	-0.439	-0.502
Problems with accommodation	0.144	0.219	0.669	0.557	1.664	0.328	-0.289	-1.518	-0.780	-0.892
Health	-0.064	-0.097	-0.298	-0.248	-0.741	-0.146	0.129	0.676	0.347	0.397
Standard of living	-0.041	-0.063	-0.192	-0.160	-0.478	-0.094	0.083	0.436	0.224	0.256
Income quartile	-0.286	-0.433	-1.325	-1.104	-3.295	-0.649	0.573	3.005	1.544	1.767
Satisfaction with economic situation in the country	-0.002	-0.002	-0.007	-0.006	-0.019	-0.004	0.003	0.017	0.009	0.010
Household size	-0.210	-0.317	-0.972	-0.810	-2.417	-0.476	0.420	2.204	1.132	1.296
Education	0.029	0.043	0.133	0.111	0.331	0.065	-0.058	-0.302	-0.155	-0.178

Source: created by the authors.

Table 8: Marginal effects (Latvia, male, percentage points). Statistically significant figures are in bold.

Ordered Probit Regression	Dependent Variable: Dependent Variable: “Taking all things together on a scale of 1 to 10, how happy would you say you are? Here 1 means you are very unhappy and 10 means you are very happy”.									
	Outcome									
Explanatory Variable	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
Age of the respondent	-0.004	-0.006	-0.023	-0.020	-0.045	-0.011	0.007	0.040	0.023	0.032
Employment status	-0.019	-0.027	-0.099	-0.084	-0.192	-0.045	0.030	0.172	0.096	0.137
Household structure	0.243	0.347	1.295	1.101	2.510	0.586	-0.390	-2.250	-1.259	-1.791

Problems with accommodation	0.081	0.116	0.432	0.367	0.838	0.196	-0.130	-0.751	-0.420	-0.598
Health	-0.228	-0.326	-1.215	-1.033	-2.354	-0.550	0.366	2.111	1.181	1.680
Standard of living	-0.005	-0.007	-0.024	-0.021	-0.047	-0.011	0.007	0.042	0.024	0.034
Income quartile	-0.283	-0.404	-1.507	-1.281	-2.920	-0.682	0.453	2.618	1.465	2.083
Satisfaction with economic situation in the country	-0.021	-0.030	-0.112	-0.095	-0.217	-0.051	0.034	0.194	0.109	0.155
Household size	-0.426	-0.609	-2.270	-1.930	-4.399	-1.027	0.683	3.944	2.207	3.139
Education	0.108	0.154	0.575	0.489	1.114	0.260	-0.173	-0.999	-0.559	-0.795

Source: created by the authors.

Table 9: Marginal effects (Lithuania, female, percentage points). Statistically significant figures are in bold.

Ordered Probit Regression	Dependent Variable: Dependent Variable: “Taking all things together on a scale of 1 to 10, how happy would you say you are? Here 1 means you are very unhappy and 10 means you are very happy”.									
	Outcome									
Explanatory Variable	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
Age of the respondent	0.494	0.271	1.045	0.680	2.241	0.762	0.090	-1.519	-1.559	-2.505
Employment status	-0.181	-0.100	-0.383	-0.250	-0.822	-0.280	-0.033	0.557	0.572	0.919
Household structure	0.133	0.073	0.282	0.184	0.605	0.206	0.024	-0.410	-0.421	-0.676
Problems with accommodation	0.187	0.103	0.395	0.257	0.847	0.288	0.034	-0.574	-0.589	-0.947
Health	0.005	0.003	0.012	0.008	0.025	0.008	0.001	-0.017	-0.017	-0.028
Standard of living	-0.165	-0.090	-0.348	-0.227	-0.746	-0.254	-0.030	0.506	0.519	0.834
Income quartile	-0.540	-0.296	-1.141	-0.743	-2.448	-0.833	-0.098	1.659	1.703	2.736
Satisfaction with economic situation in the country	0.000	0.000	0.001	0.000	0.001	0.000	0.000	-0.001	-0.001	-0.002
Household size	-0.670	-0.367	-1.415	-0.921	-3.035	-1.032	-0.122	2.057	2.111	3.392
Education	-0.399	-0.219	-0.842	-0.548	-1.806	-0.614	-0.072	1.224	1.256	2.019

Source: created by the authors.

Table 10: Marginal Effects (Lithuania, male, percentage points). Statistically significant figures are in bold.

Ordered Probit Regression	Dependent Variable: Dependent Variable: “Taking all things together on a scale of 1 to 10, how happy would you say you are? Here 1 means you are very unhappy and 10 means you are very happy”.									
	Outcome									
Explanatory Variable	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
Age of the respondent	0.510	0.547	0.942	1.962	3.478	1.064	0.045	-2.450	-2.922	-3.092
Employment status	-0.058	-0.062	-0.107	-0.224	-0.396	-0.121	-0.005	0.279	0.333	0.352
Household structure	0.281	0.301	0.519	1.080	1.914	0.585	0.025	-1.349	-1.609	-1.702
Problems with accommodation	0.074	0.080	0.137	0.286	0.506	0.155	0.007	-0.357	-0.425	-0.450
Health	-0.097	-0.104	-0.179	-0.373	-0.661	-0.202	-0.009	0.465	0.555	0.587
Standard of living	-0.048	-0.051	-0.089	-0.185	-0.328	-0.100	-0.004	0.231	0.275	0.291
Income quartile	-0.396	-0.424	-0.731	-1.523	-2.699	-0.826	-0.035	1.902	2.268	2.400
Satisfaction with economic situation in the country	-0.019	-0.020	-0.035	-0.073	-0.129	-0.039	-0.002	0.091	0.108	0.115
Household size	-0.760	-0.815	-1.405	-2.926	-5.186	-1.586	-0.067	3.654	4.358	4.612
Education	0.116	0.125	0.215	0.448	0.795	0.243	0.010	-0.560	-0.668	-0.707

Source: created by the authors.

Table 11: Marginal effects (Estonia, female, percentage points). Statistically significant figures are in bold.

Ordered Probit Regression	Dependent Variable: Dependent Variable: “Taking all things together on a scale of 1 to 10, how happy would you say you are? Here 1 means you are very unhappy and 10 means you are very happy”.									
	Outcome									
Explanatory Variable	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
Age of the respondent	0.077	0.178	0.377	0.389	1.005	0.287	-0.034	-0.668	-0.629	-0.921
Employment status	0.063	0.144	0.305	0.315	0.814	0.232	-0.028	-0.541	-0.509	-0.746
Household structure	-0.005	-0.012	-0.026	-0.027	-0.070	-0.020	0.002	0.046	0.044	0.064
Problems with accommodation	0.033	0.075	0.159	0.165	0.425	0.121	-0.015	-0.282	-0.266	-0.389
Health	-0.052	-0.119	-0.251	-0.260	-0.670	-0.191	0.023	0.446	0.420	0.614

Standard of living	0.010	0.022	0.047	0.048	0.125	0.036	-0.004	-0.083	-0.078	-0.114
Income quartile	-0.114	-0.263	-0.557	-0.575	-1.486	-0.42	0.051	0.988	0.930	1.361
Satisfaction with economic situation in the country	-0.009	-0.020	-0.043	-0.045	-0.115	-0.033	0.004	0.076	0.072	0.105
Household size	-0.112	-0.257	-0.545	-0.562	-1.452	-0.415	0.050	0.965	0.909	1.331
Education	0.022	0.051	0.107	0.111	0.287	0.082	-0.010	-0.191	-0.179	-0.263

Source: created by the authors.

Table 12: Marginal effects (Estonia, male, percentage points). Statistically significant figures are in bold.

Ordered Probit Regression	Dependent Variable: Dependent Variable: “Taking all things together on a scale of 1 to 10, how happy would you say you are? Here 1 means you are very unhappy and 10 means you are very happy”.									
	Outcome									
Explanatory Variable	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
Age of the respondent	-0.004	-0.012	-0.039	-0.092	-0.139	-0.043	0.021	0.141	0.040	0.127
Employment status	-0.062	-0.193	-0.640	-1.488	-2.258	-0.696	0.333	2.293	0.645	2.066
Household structure	0.059	0.183	0.610	1.416	2.150	0.663	-0.317	-2.183	-0.614	-1.967
Problems with accommodation	0.025	0.078	0.259	0.602	0.914	0.282	-0.135	-0.928	-0.261	-0.836
Health	-0.078	-0.242	-0.804	-1.868	-2.836	-0.874	0.418	2.879	0.810	2.595
Standard of living	-0.006	-0.018	-0.061	-0.142	-0.215	-0.066	0.032	0.219	0.062	0.197
Income quartile	-0.067	-0.209	-0.694	-1.613	-2.449	-0.755	0.361	2.486	0.699	2.240
Satisfaction with economic situation in the country	-0.008	-0.026	-0.085	-0.198	-0.301	-0.093	0.044	0.305	0.086	0.275
Household size	-0.179	-0.560	-1.861	-4.324	-6.564	-2.024	0.968	6.665	1.874	6.005
Education	-0.060	-0.187	-0.621	-1.442	-2.190	-0.675	0.323	2.223	0.625	2.003

Source: created by the authors.

Appendix 3

Table 13: Statistical significance of drivers of subjective well-being in the Baltics and among genders (red – high, blue – low; for the ease of comparison absolute values are used).

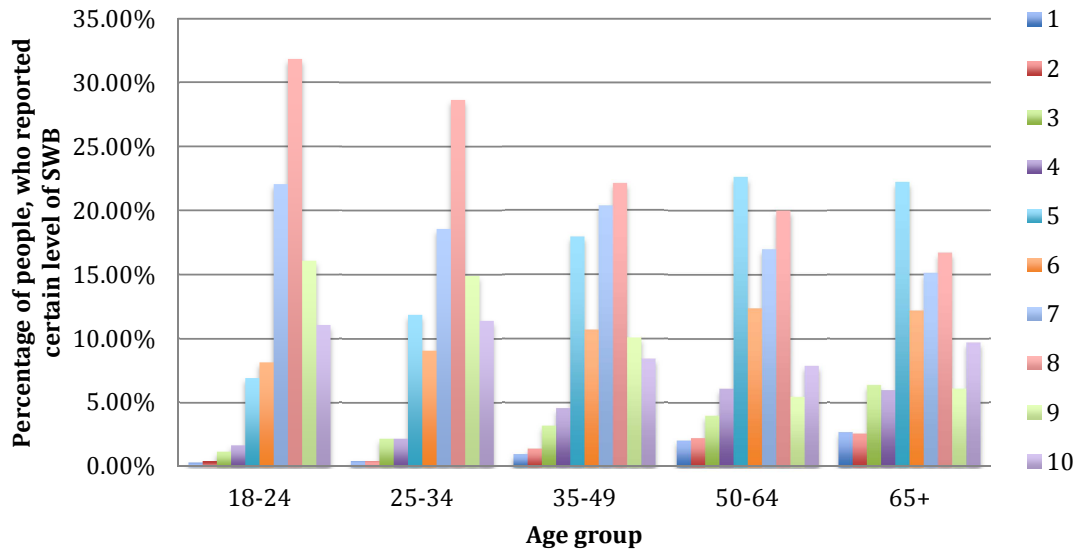
Explanatory Variable	Dependent Variable: “Taking all things together on a scale of 1 to 10, how happy would you say you are? Here 1 means you are very unhappy and 10 means you are very happy”.					
	Latvia		Lithuania		Estonia	
	Females	Males	Females	Males	Females	Males
Age of the respondent	4.54	0.05	4.09	4.56	1.29	0.15
Employment status	1.26	0.26	2.13	0.71	1.59	3.23
Household structure	1.13	2.21	0.89	2.05	0.09	1.65
Problems with accommodation	2.78	1.42	1.36	0.65	0.67	0.99
Health	1.23	4.92	0.16	2	1.28	5.18
Standard of living	2.73	0.4	1.55	1.36	0.44	1.34
Income quartile	4.46	2.8	3.73	2.93	1.94	2.27
Satisfaction with economic situation in the country	0.38	1.47	0.03	1.45	1.91	2.45
Household size (including children)	1.91	2.68	2.85	3.9	1.18	3.5
Education	10.34	0.43	1.67	0.47	6.57	0.94

Source: created by the authors.

Appendix 4

Figure 1

Reported subjective well-being (scale from 1 to 10) in the Baltics by age group, %.

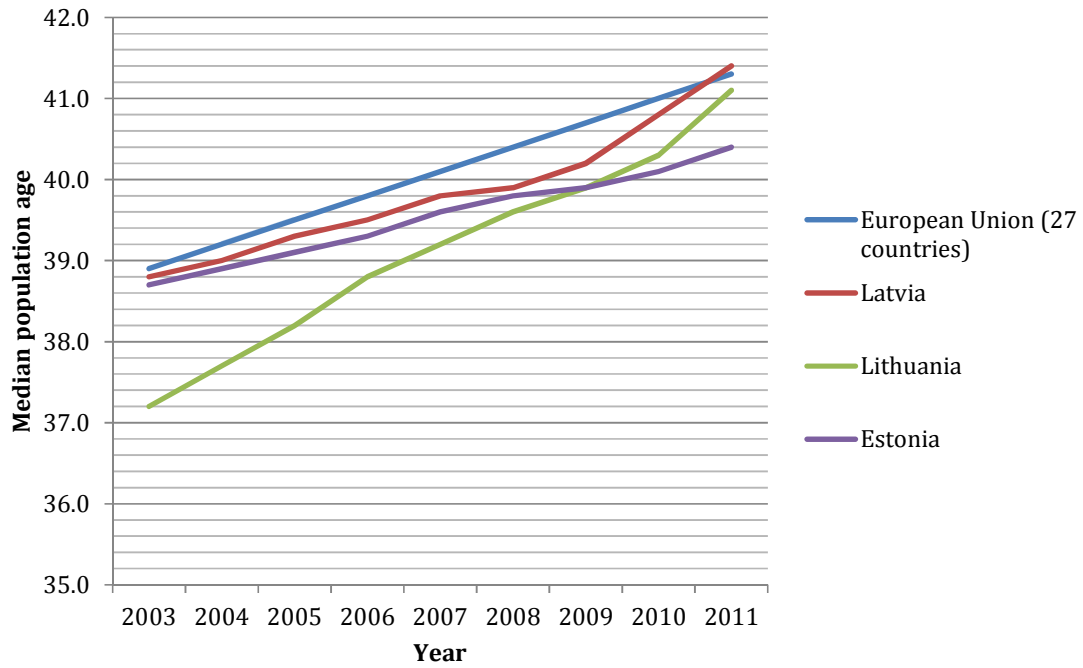


Source: created by the authors.

Appendix 5

Figure 2

Median age of population in the Baltic countries and EU-27.



Source: created by the authors from Eurostat Database information (Eurostat, 2003-2011).

Appendix 6

Table 14: Pseudo-R2 estimations. Regression on factors influencing SWB.

<u>Pseudo-R²</u>	<u>Latvia</u>		<u>Lithuania</u>		<u>Estonia</u>	
	<u>Females</u>	<u>Males</u>	<u>Females</u>	<u>Males</u>	<u>Females</u>	<u>Males</u>
McFadden's R ²	0.053	0.058	0.045	0.061	0.024	0.087
McFadden's Adj. R ²	0.035	0.025	0.03	0.035	0.006	0.053
ML (Cox-Snell) R ²	0.195	0.216	0.171	0.228	0.096	0.295
McKelvey & Zavoina's R ²	0.202	0.227	0.193	0.237	0.1	0.308
Count R ²	0.301	0.28	0.253	0.245	0.249	0.279
Adj. Count R ²	0.199	0.094	0.063	0.055	0.061	0.082
Cragg-Uhler (Nagelkerke) R ²	0.108	0.219	0.174	0.231	0.098	0.301

Source: created by the authors.

Table 15: Pseudo-R2 estimations. Regression on gap in SWB between genders.

<u>Pseudo-R²</u>	<u>Specification 2</u>	<u>Specification 3</u>
McFadden's R ²	0.011	0.032
McFadden's Adj. R ²	0.01	0.03
ML (Cox-Snell) R ²	0.043	0.124
McKelvey & Zavoina's R ²	0.045	0.129
Count R ²	0.238	0.269
Adj. Count R ²	0.027	0.055
Cragg-Uhler (Nagelkerke) R ²	0.044	0.126

Source: created by the authors.