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Question of Economic Inequality and Subjective Wellbeing

Happiness, mental health, and political inequality perspective

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'The Gross National Product counts air pollution and cigarette advertising, and … the destruction of the redwood and the loss of our natural wonder in chaotic sprawl … Yet [it] does not allow for the health of our children, the quality of their education, or the joy of their play … the beauty of our poetry or the strength of our marriages … it measures everything, in short, except that which makes life worthwhile.'

Robert Kennedy (1968), quoted by Corr and Plagnol (2019: 23)

Abstract

The main purpose of his thesis is to examine whether income inequality impacs well-being among European people; more specifically, it examines the relationship between income inequality and happiness, mental health, and political inequality. Specifically, this thesis attempts to answer the following questions: What impact, if any, does a level of economic inequality have on the European citizens' happiness, mental health, and political engagement?

Using multiple, hierarchal binomial regression and utilising a combination of the cross-national surveys, the European Quality of Life Survey (EQLS) and European Social Survey (ESS), this thesis investigates the case of European citizens in the early twenty-first century.

Paper I examines the appropriateness of the standard deviation in measuring well-being. A new measure, 'Dynamic Range', is proposed and compared to the existing disparity measures. The analysis reveals that in some countries, the inequality of happiness ranking has changed substantially. The findings strongly suggest that income inequality is significantly more critical than previously anticipated in determining well-being inequality. The development of a new metric, the 'Dynamic Range,' greatly assisted in reaching this conclusion.

Paper II examines whether income inequality has any effect on mental well-being. Firstly, it explores the variations in the level of mental well-being among European people. Secondly, the determinants of mental well-being are investigated. Thirdly, the social capital, social anxiety, and neo-materialist hypotheses are tested, explaining the association between income inequality, measured by the Gini coefficient and mental well-being, measured by the positive and negative affect balance indicators. Both composite scores measuring well-being and distress performed similarly in the analysis. The findings refute the tunnel effect hypothesis, claiming that wealth inequality gives people optimism and boosts their happiness. However, they support the relative deprivation theory, which states that lower economic disparity is necessary for happiness. Furthermore, the data indicates that both social capital and low social anxiety are essential for mental health.

Finally, paper III explores the relationship between income inequality and political inequality. First, it investigates the variation in the level of political engagement

among advanced European democracies. Second, the determinants of political participation, mainly protests, are examined. The findings reveal that the amount of political among the European citizens vary. The most active citizens are in Sweden, except for attending a demonstration, the most popular activity in France. The former socialist countries in Central and Eastern Europe engage in politics the least. Moreover, the results reinforce the relative power theory; greater economic inequality exacerbates political inequality.

Key words: Subjective wellbeing, income inequality, social capital, social exclusion

Acknowledgement

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Reading note / Note de lecture

The thesis is divided into three chapters, each of which contributes to the literature on income inequality. In addition, each chapter includes an independent literature review, methodology and findings. Therefore, to prevent unnecessary redundancy, the general introduction to the literature is kept succinct.

General Introduction

This thesis examines the extent to which economic disparity influences well-being inequality, mental well-being, and political protests among European people. Socioeconomic status and its consequences on human well-being have been of common concern throughout history. Since Aristotle's Nichomachean Ethics, and the idea that deprivation may obstruct the realisation of Eudaimonia (Cashen, 2016), the relative comparison was observed in 'such things as Bentham's Utilitarian Ethics, Rousseau's Discourse on Social Inequality, and Kant's Critique of Moral Reasoning' (Suls & Wheeler, 2000: 3). However, the concern with self-other comparison and its impact on well-being has risen in prominence predominantly in the last 100 years (Cooley, 1902; James, 1890; Mead, 1934).

Easterlin (1974) provided a starting point in empirical research on the topic when he identified two factors that explain why higher income did not correlate with higher happiness levels. Firstly, subjective well-being is affected by comparison effects with reference groups such as someone else in a community, a neighbour, or co-workers. Stevenson and Wolfers (2008) contested the finding of the Easterlin paradox and argued that total income is an essential determinant of well-being. They identified the same phenomenon when comparing rich and poor in an inter-country and intra-country analysis. Secondly, an increase in income may cause happiness to fluctuate only a short time before returning to its previous level.

Since then, many empirical studies on relative income and well-being have been conducted (Layte, 2012; Fitzroy et al., 2011; Hopkins, 2008; Ferrer-i-Carbonel, 2005; Falk & Knell, 2004; Stutzer, 2004; Clark & Oswald 1996). Furthermore, Amendola et al. (2015) examined advanced European economies, Clark and Senik (2014) rural villages, Kuegler (2009) upper-middle-income economies and Becchetti and Savastano (2009) transition economies.

Studies on the influence of income inequality on a wide range of outcomes are becoming increasingly multidimensional. Adverse outcomes such as bad health, mental problems, low social trust, social exclusion, and low levels of political engagement are thought to be influenced by the general degree of economic inequality in society (Solt, 2015, 2008; Wilkinson and Pickett, 2010; Huisman and Oldehinkel,

2009; Andersen and Fetner, 2008, Neckerman and Torche, 2007; Rothstein and Uslaner, 2005; Daly et al., 2001, Kawachi et al., 1997). Given the fast-changing economy and socioeconomic conditions, further research on the association between income inequality and adverse outcomes within societies is needed. This thesis aims to examine the extent to which income inequality impacts happiness inequality, mental well-being, and political protests. The inequality trends and determinants will be monitored and explored. Moreover, this thesis improves the current methods used to measure well-being inequality.

The rest of this section is laid out as follows. First, the concept of happiness inequality in Europe is introduced. Second, the role of changing income inequality in health and political engagement are examined. Finally, the academic contribution, as well as the research questions and objectives, are proposed.

Well-being Inequality

Most inequality research has focused on income and wealth disparities (Atkinson, 2015; Keeley, 2015; Atkinson and Bourguignon, 2014; Piketty, 2014; Stiglitz, 2012; Neckerman and Torche, 2007). However, income inequality is an overly simplistic estimate of total inequality (Helliwell and Mayraz, 2018; Helliwell et al., 2016; Goff et al., 2016, 2018; Kalmijn and Veenhoven, 2005). Helliwell et al. (2019) suggested that the implications of happiness equality are frequently more remarkable than the effects of income inequality. For example, Geof et al. (2018) argued that social trust is more strongly related to well-being inequality than income inequality.

While subjective well-being has grown in popularity in happiness research, research on happiness dispersion markers has been restricted. Veenhoven (1990) was the first to suggest measuring satisfaction with life inequality (1990). According to Veenhoven and Kalmijn (2005), standard deviation fared well as a measure of well-being inequality. However, Delhey and Kohler (2011) concluded that standard deviation is a false representation of inequality and introduced the instrument-effect-corrected standard deviation (SD_{IEFF}) to remove the structural dependency.

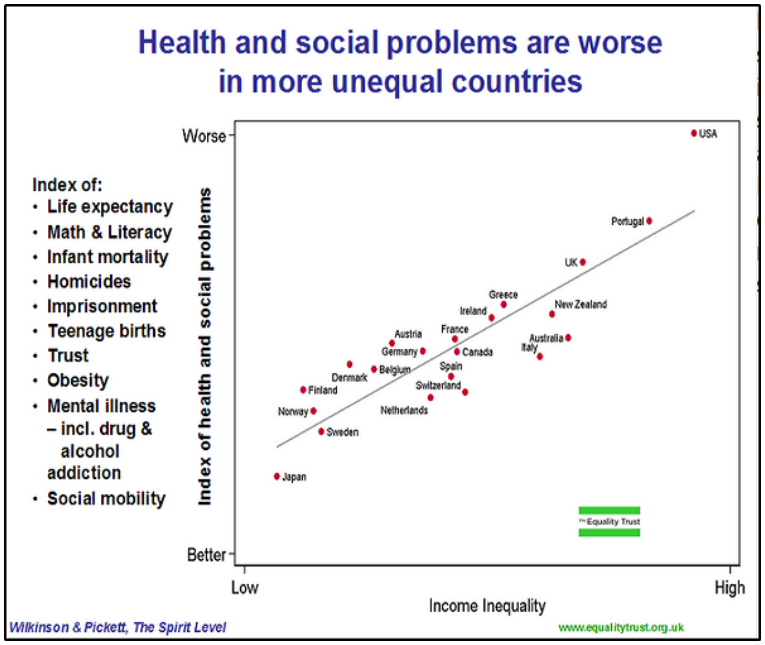
Berg and Veenhoven (2010) identified no correlation between income inequality and well-being inequality after controlling for wealth. Conversely, according to Delhey and

Kohler (2011), the instrument-effect-corrected standard deviation (SD_{IEFF}) changed the ranking of some countries in terms of happiness inequality. Furthermore, they concluded that income inequality is a significant determinant of happiness inequality.

Mental Health Well-being

At the beginning of twenty first century, significant health inequalities are present in all European countries. Several studies have examined the extent to which income inequality impacts overall health and health inequality (Hu et al., 2015; Pickett and Wilkinson, 2015; Layte, 2012; Wilkinson and Pickett, 2010; Beckfield, 2004). The overall findings can be summarised by figure 1 below. Health and social problems, including health, mental health, crime, and infant mortality are worse in more unequal societies (Wilkinson and Pickett, 2010).

Figure 1 Consequence of income inequality Source: Wilkinson and Pickett (2010: 7)



Several studies investigated the role of changing income inequality in health inequality within a country. For example, a study on income inequality and self-rated health in Stockholm concluded that living in a district with significant income disparity was particularly harmful to the poor's health (Rostila et al., 2012). Similarly, Aittaomaki et al. (2014) examined increasing income inequality in Finland. They concluded that the changes in income distribution might account for as much as half of the observed increase in health problems at the lower end of the income range. Furthermore,

Graville and Sutton (2003) completed a similar study on income-related health inequalities in England, Scotland, and Wales, between 1979 and 1995. Their findings suggested that decreasing income inequality can help to reduce pro-rich health disparities. Moreover, Kachi (2013) proposed lowering the incidence of unemployment or economic inactivity to prevent unnecessary health disparities.

Whereas the negative health effects of economic disparity are widely established, the underlying pathways are less well understood. Wilkinson and Pickett (2017) suggested that the quality of social interactions appears to be affected by income inequality. They contested two contrasting social strategies. One is adapted to live in a dominant hierarchy, where status anxiety grows, and self-serving individualism is typical. The other is adapted to a more egalitarian society based on friendship, collaboration, and sharing.

Political Protests and Inequality

Several studies demonstrated various negative consequences of income inequality at the national and global levels. For example, income disparity can negatively impact health (Hu et al., 2015; Pickett and Wilkinson, 2015), crime rates (Enamorado et al., 2016) and trust in citizens (Putnam, 2020; Mikucka et al. 2017). Given the evidence that inequality harms living standards and wellbeing, one could anticipate social movements to form a reaction to society's increasing income gap (Alvarez, 2018). However, several studies suggest that political engagement is low in countries or communities when income inequality is high (Solt, 2008, 2015; Lancee and Van de Werfhorst, 2012; Uslaner and Brown, 2005; Alesina and La Ferrara, 2000; Oliver, 1999). In addition, Kriesi (2012) suggested that protests were significantly influenced by external factors such as a population's level of grievances, the material and cultural resources accessible to potential protestors, and a cultural environment that respond to protest claims.

The literature has provided arguments for a negative and positive link between rising economic disparity and political protest. According to the proponents of relative power theory, the wealthy can use their wealth to gain a political voice in countries with substantial economic disparity. The poor give up on participation as they feel powerless. Similarly, proponents of resource theory argue that income inequality

encourages the involvement of the relatively wealthy, but due to resources rather than power (Solt, 2015). However, the grievances theory proponents argue the opposite; the poor will be even more motivated to utilise their political power (Shapiro, 2002)

Research Questions and Objectives

The overall aim of this thesis is to investigate the extent to which economic disparity influences happiness inequality, mental well-being, and political protests among European people.

Paper I, measures inequality in the context of subjective well-being in European nations and then analyses the effect of income inequality and affluence on those dispersion indicators. Paper II investigates the social determinants of mental health and assess the impact of a country's level of economic inequality on well-being among European countries. Paper III examines the impact of a country's level of economic inequality on protest engagement among European countries.

Table 1 Research Objectives and Research Questions

Paper	Objectives	Research Questions	Data Source
Paper 1	To include the emotional measure of well-being: happiness. To improve the current methods used to measure well-being inequality. To assess income inequality and affluence as key determinants of life satisfaction and happiness inequality.	Which indicator of well-being inequality has delivered the most valuable outcome? To what extent do income inequality and affluence affect well-being inequality?	Round 6 European Social Survey (ESS, 2012).
Paper 2	To discuss the relationship between income inequality and subjected mental health To identify the key determinants affecting European mental wellbeing, using the social capital, status anxiety and neo-materialist hypothesis. To make informed recommendations on public policy.	Is there significant prediction of mental wellbeing by income inequality and affluence, controlling for status anxiety, personal insecurity, and homicides? controlling for the levels of trust in people, trust in institution, civic participations, support and making ends meet? controlling for the country levels of social infrastructure?	4th European Quality of Life Survey (4 EQLS) 2016.
Paper 3	To discuss how participation in peaceful uprising varies across different countries. To investigate the relationship between income inequality and peaceful protests. To make recommendations on suitable public policy.	To what extent do grievances exacerbated by income inequality motivate poor people to engage in a protest? To what extent does the unequal distribution of resources motivate affluent and poorer people to protest? To what extent does inequality discourage all but the most affluent people from engaging in different forms of protest?	4th European Quality of Life Survey (4 EQLS) 2016.

Article 1: Measuring Inequality in the Context of Subjective Wellbeing in Europe, Using the Two Predictors of the European Social Survey: Satisfaction and Happiness

ABSTRACT

In recent years, the issue of 'subjective well-being (SWB) has become a popular construct in happiness studies (Hagerty & Veenhoven, 2003; Stevenson & Wolfers, 2008). Research into happiness dispersion, however, has been somewhat limited. This article seeks to fill this gap by measuring and comparing different inequality measures in the context of SWB within European nations.

Economists have traditionally relied upon income as an indicator of well-being (Jantzen & Volpert, 2012; Piketty, 2014; Zucman & Saez, 2016). However, contemporary research suggests that income difference is not an adequate indicator of inequality and thus cannot be meaningfully used as a comparison across time.

In this article, subjective well-being inequality measurements are compared using the European Social Survey, and their suitability is identified. Furthermore, the effect of the two predictors, income inequality and affluence, are then analysed. The analysis partly follows a methodology developed by Delhey & Kohler (2011).

The empirical evidence drawn from the relationship between subjective well-being dispersion and income inequality remains inconclusive. The findings suggest two opposing forces because while a rising income resulted in a decline in well-being inequality, higher income inequality increased well-being inequality. Of the two factors, national income was shown to be the more important determinant. The development of a new measure, the 'Dynamic Range,' greatly assisted in reaching this conclusion.

Keywords: Subjective wellbeing, inequality, measures of dispersion, Europe

1.1 INTRODUCTION

For a long time, economists have relied upon income as an indicator for well-being (Atkinson et al., 2011; Jantzen and Volpert, 2012; Kleiber and Kotz, 2003; Piketty, 2014; Zucman and Saez, 2016). However, recent research suggests that income difference is not an adequate indicator of inequality and thus cannot be meaningfully used as a comparison across time. Therefore, the development of - and research into - the construct of Subjective Well-being has increased in popularity among social scientists (Easterlin, 1974; 1995; 2005a; 2005b; Clark et al., 2008; Fischer, 2008; Frey and Stutzer, 2010; Hagerty and Veenhoven, 2003; Layard, 2005; Stevenson and Wolfers, 2008) and psychologists (Diener and Biswas-Diener, 2008).

While subjective well-being has become a popular construct in happiness studies, research into the happiness dispersion indicators has been limited. Kalmijn and Veenhoven (2005) suggest that standard deviation performed well as an indicator quantifying inequality of happiness. Since then, many studies have used this indicator to analyse the relationship between income inequality and well-being inequality. However, the findings are inconclusive, with a large proportion suggesting, at best, a weak relationship. In contrast, Delhey and Kohler (2011) argue that due to bounded scales, the standard deviation is technically dependent on the happiness mean and can therefore be an inaccurate interpretation of inequality. To deal with this problem, they propose the instrument-effect-corrected standard deviation (SD_{IEFF}) - concluding that the corrected well-being inequality is affected by income inequality.

The key rationale for looking at wellbeing inequality in European nations is that it may disclose disparities between countries that aren't indicated by the level of happiness. If this was the case, a society might institute different economic policies because an egalitarian policy targeted at minimising happiness disparities would vary from a utilitarian strategy aimed at increasing happiness on average. Therefore, two measures, ideally mutually independent, are required to indicate the overall wellbeing and inequality of wellbeing (Kalmijn and Veenhoven, 2005).

The empirical evidence supporting the theoretical relationships between well-being inequality and income inequality has been inconclusive. This paper attempts to fill this gap by measuring inequality in the context of subjective well-being in European

nations and then by analysing the effect of income inequality on those dispersion indicators. Generally, most economic studies use cognitive measures of happiness such as life satisfaction to assess well-being inequality.

The first contribution of this paper is also to include the emotional measure of well-being: happiness (Kalmijn and Veenhoven, 2005). Clark and Senik (2011) conceptualised that while happiness was a measure corresponding to people's emotional response, life satisfaction was measured in terms of cognitive or evaluative responses. The second methodological contribution of this paper is to improve the current methods used to measure well-being inequality (Kalmijn and Veenhoven, 2005; Delhey and Kohler, 2011) and then develop a new measure of inequality which referred to as the 'Dynamic Range.' Finally, as the third contribution, all three methods - the standard deviation, the corrected standards deviation, and the Dynamic Range - are applied using the two indicators from the European Social Survey: satisfaction and happiness. The effect of two predictors - income inequality and affluence - are then analysed. These predictors are significant determinants of life satisfaction and happiness inequality, with national income being the more important of the two. Specifically, this paper is an attempt to answer the following questions:

RQ1 – To what extent do income inequality and affluence affect well-being inequality?
RQ2 – Which indicator of well-being inequality has delivered the most valuable outcome?

This study relies primarily upon a self-evaluation survey focusing on subjective well-being measures, capturing feelings and reflections on various aspects of life. Although an income generally provides people with resources and the ability to fulfil their goals and live the lives they aspire to, other essential factors also need to be considered. For example, even though increases in GDP per capita can often be observed, this can occur while other factors such as well-being are simultaneously decreasing (Helliwell, 2017). Therefore, through a more qualified understanding of the issues relating to both income and subjective well-being, we can better understand the situation within society.

The remainder of this article is structured as follows. Section 2 discusses the existing literature related to SWB inequality to position the current proposed study. Section 3 then considers the proposed research design and other methodological considerations related to the current study. (An alternative measure of standard deviation is also described in this section.) In section 4, the empirical results will be presented, including applying the new measure using the four predictors. Finally, section 5 discusses conclusions in detail and context and recognises implications for future work.

1.2 LITERATURE REVIEW

The preponderance of the research in inequality has focused on income (Atkinson et al., 2011; Jantzen and Volpert, 2012; Kleiber and Kotz (2003), Piketty, 2014; Zucman and Saez, 2016). Wilkinson (2005) also focused primarily on income inequality, though the research also discusses several aspects of life such as health, violence, gender, and race. By contrast, only limited attention has been made to researching inequality in SWB. While the average happiness scores can remain the same, the SWB inequality can either increase or decrease (Helliwell, 2017).

Present economic performance measurements, particularly those entirely based on GDP, have long been questioned. Furthermore, there are more general doubts regarding the suitability of these figures as indicators of societal well-being (Stiglitz et al., 2009). Rather than relying on indicators such as GDP per capita, education, unemployment, crime, etc., what people think about their well-being has been measured. For example, when answering a satisfaction question, different people may emphasise different aspects of their lives. One person finds a salary and job security significant; for another person, it can also be family relationships and health (Waldron, 2010).

One of the primary goals of economic policy has been to promote economic growth. Nevertheless, in several papers, Easterlin (1974) was one of the first researchers to use satisfaction with life as a proxy for welfare. Since then, this measure has become popular globally (Clark et al., 2016; Goff et al., 2016). Easterlin (1974, 1974, 1995, 2005a, 2005b) finds, based on a critical finding called the 'Easterlin Paradox, 'no significant evidence of a link between the economic development and average societal

level of well-being. Similar evidence was also reported for the United States and countries worldwide by Easterlin (2016), who confirms that the long-term happiness growth rates and real GDP per capita are not significantly positively related. In contrast, using multiple datasets spanning many decades, Stevenson and Wolfers (2008) have contested the finding on the Easterlin Paradox and suggested that economic growth is associated with rising levels of well-being. These findings also confirmed no evidence of a maximum threshold above which the increasing GDP and average level of well-being are no longer related.

Happiness can be considered from two distinct perspectives: the utilitarian and the egalitarian. The main concern of the altruistic core of utilitarianism is the well-being of everyone. The utilitarian creed advocates that well-being policy should aim for the principle of 'the greatest happiness for the greatest number' (Veenhoven, 2010), sometimes also translated as 'the sacrifice of an individual to save a greater number' (Kahane et al., 2018). According to the egalitarian principle, the well-being policies should instead focus on well-being distribution and promote a society where differences in well-being are minor (Kalmijn and Veenhoven, 2005).

Abdalah et al. (2017) define well-being inequality as the degree to which life experiences vary between different groups or between populations. Quick (2015) divides inequalities in well-being into two categories. The first category is inequalities between population groups which can be measured as differences in average well-being scores. For example, higher-income groups tend to have higher well-being than lower-income groups. Consequently, it would be expected that minorities would have lower well-being than others. The second category is inequalities in overall well-being in the population, measured as a distribution in the overall well-being. The indicator measured is then very similar to the Gini coefficient used as a measure of income inequality. The focus of this paper is on the second category.

Allison and Foster (2004) analysed the National Health Interview Survey and State Data Files for 1994 and developed a methodology evaluating inequality in self-reported health status data. The result obtained from a partial inequality ranking suggests that the South has lower aggregate health and is also less equally distributed

than the rest of the country. However, they have also noted that the same methods can be used to assess the distribution of other variables, including subjective well-being.

Using the General Social Survey database, Dutta and Foster (2013) also focused on inequality of happiness in the USA from 1972 to 2008. They followed the same methodology as Allison and Foster (2004) and concluded that the happiness inequality continuously decreased until 2000 and started increasing again. Furthermore, they considered the inequality happiness measures across gender, race, and region and confirmed considerate inequalities.

The empirical evidence for the relationship between subjective well-being dispersion and income inequality remains inconclusive. Several studies suggest no association between subjective well-being dispersion and income inequality. For example, using the data for 33 European countries, Fahey and Smyth (2004) found that inequality, measured by the Gini coefficient, did not affect the standard deviation of life satisfaction. Similar evidence was reported by Berg and Veenhoven (2010) with no association between income inequality and the inequality in happiness after controlling for wealth. Income inequality was also found not related to well-being inequality in the US between the 1970s and 2000s (Stevenson and Wolfers, 2008).

Conversely, other studies have indicated just the opposite. Ovaska and Takashima (2010) suggested that the Gini coefficient was positively correlated with life satisfaction and happiness. A negative relationship was reported by Ott (2005), who found that higher income inequality levels were associated with lower (not higher) well-being inequality, though the correlation was weak. Similar evidence was suggested by Veenhoven (2005), who also questioned rising inequality in happiness. Analysis of the standard deviation of life satisfaction, he observed that although income inequality in EU nations was increasing, the inequality in life satisfaction was falling from 1973 to 2001

Clark et al. (2014) analysed the World Values Survey for 105 countries and country-specific surveys of Australia, Great Britain, Germany, and the United States. This research comes as an addition to the Easterlin Paradox (Easterlin, 1974). They concluded with a more positive perspective on economic growth and suggested two

opposing forces. First, a rising income may not increase average happiness, as suggested by Easterlin (1974), but results in a decline of happiness inequality. Second, increasing income inequality has the opposite effect as it increases well-being inequality. Most countries studied have experienced a decline in well-being inequality due to positive income growth, except the United States, where the income inequality grew too much and cancelled out the positive effects of the increasing income.

Either central tendency statistics such as mean have been used to analyse the level of happiness in nations, or statistics measuring the dispersion of distribution are used to analyse the inequality (Kalmijn and Veenhoven, 2005). Kalmijn and Veenhoven (2005) considered nine alternative measures to be used to indicate happiness inequality in nations. They observed that five measures were not suitable, including the Gini coefficient, to compare income inequality. The study concludes that standard deviation performed well as an indicator quantifying inequality to happiness. Three other well-performing statistics were the mean absolute difference, the mean pair distance, and the interquartile range.

Delhey and Kohler (2011) questioned whether the standard deviation was a suitable measure of subjective well-being dispersion. Their research has developed specific measures of inequality, adjusting the standard deviations IEFFA and IEFFB to overcome the problem of structural dependency, which is a result of a limited rating scale used as a measure for satisfaction. Using a substantial data sample taken from global citizens in 52 countries from the World Value Survey of 2005 - together with new specifically designed inequality measures - they found that some countries have changed their ranking considerably. Moreover, lower inequality of income, measured by the Gini coefficient, resulted in lower satisfaction inequality.

Empirical evidence of the association (significance and sign) between well-being and income (GDP per capita and Gini) remains controversial and diverse. Different results supported by different theories can explain either a positive or negative relationship. These inconsistent relationship findings can be a result of various factors. First, different countries might be at different stages of economic development and thus react to inequality differently (Clark et al., 2014). Second, alternative measures can lead to different results (Delhey and Kohler, 2011: Kalmijn and Veenhoven, 2005).

Third, the choice of independent variables and timeframe can result in variable findings.

This review of literature illuminates the appropriateness of the standard deviation as a measure of subjective wellbeing inequality. It further offers contradicting evidence on the relationship between income inequality and subjective wellbeing inequality. Most importantly, the literature has shown a descriptive account of alternative measures proposed by Delhey and Kohler (2011) to overcome structural dependency.

Considering this literature review, only limited attention has been made to assess different measures of wellbeing inequality. Although there is some evidence that standard deviation can performed well as a measure indicating the wellbeing inequality (Kalmijn and Veenhoven, 2005). The following section outlines the research design, methods and measures selected for this study.

1.3 METHODOLOGY

The world is full of inequalities, income, wealth, health, education, political inequality, and other domains. Typically, the Gini coefficient of income is the most used measure of inequality (Piketty and Saez, 2003). However, as published by several surveys, the satisfaction with life (SWL) dispersion data has been used as an alternative measure of inequality by economists for some time (Clark et al., 2016; Goff et al., 2016; Kalmijn and Veenhoven, 2005).

1.3.1 Subjective well-being data and variables

The primary data source is the European Social Survey, whose primary purpose is to measure social and political change across Europe using high-quality methodological standards. Cross-sectional samples, representative of the population aged 15 and older, are selected every two years and then interviewed face-to-face. The sample sizes range between 749 in Iceland and 2956 in Germany. Round 6, which covers the year 2012, has been selected because it covers subjective well-being questions addressed in this study. The following two questions detailed below are measured separately to obtain a more extensive understanding of people's lives.

All things considered, how satisfied are you with your life as a whole nowadays? (Satisfaction)

0_____10

Extremely dissatisfied Extremely satisfied

Taking all things together, how happy would you say you are? (Happy)

0_____10

Extremely unhappy Extremely happy

Dolan et al. (2011) identify three broad categories of well-being measures: evaluation, experience, and eudaimonia. Both above subjective questions relate to one of these three categories. The first question asks people to indicate their overall satisfaction with life by way of an evaluative measure. The experience measure is assessed in the second question, classifying interviewees' feelings during a recent period in time.

Waldron (2010) characterised the SWB as a dynamic process, where the predictors influence each other and are not necessarily mutually exclusive. Therefore, the interplay between each aspect of the SWB needs to be carefully examined and considered when interpreting subsequent data.

Satisfaction and happiness are both rated on an 11-step numerical scale. The selected sample consists of 54673 respondents drawn from 30 countries that have been asked to select one of the limited numbers of discreet ratings for each question. For this study, people are considered equally happy when they select the same rating and unequally happy when they select a different rating, regardless of where they live. Veenhoven (2005) considered that (1) the relative number of people that have selected a different level of happiness and (2) the size of those variations were the two essential elements required to measure the actual (as opposed to perceived) inequality of happiness in society.

The highest national satisfaction mean is 8.57 for Denmark, and the lowest is 4.34 for Bulgaria. The inequality coefficient used in this paper is the Gini coefficient, the most widely used measure of income distribution across populations. A lower Gini value indicates that the household income is distributed equally; a higher value indicates a

greater inequality. The coefficients can range between 0 and 100. 0 means there is perfect equality, where the income of every population member is the same. The other extreme - a coefficient of 100 indicates absolute inequality, where only one person or household has the income. These sample values can also vary widely, ranging between 24.7 for Ukraine and 41.3 for Israel.

1.3.2 Structural Dependency

Kalmijn and Veenhoven (2005) stressed the importance of a dispersion measure independent of the central tendency in their paper, differentiating between three types of dependency: structural, stochastic, and intrinsic dependency. Structural dependency is a result of the way well-being is measured. For all questions, the respondents need to select one of a limited number of ratings. There are, therefore, maximum, and minimum rating values for all the questions, where both the variance (s2) and standard deviation (s) have a theoretical maximum value that depends on the mean value m.

$$\max(s^2) = (h - m) * (m - l) \qquad (1)$$

s = standard deviation
h = highest possible degree of happiness
l = lowest possible degree of happiness
m = mean

Table 2 below represents different mean values, on a scale ranging from 0 to 10 (life satisfaction and happiness), and corresponding maximum values of the variance and standard deviation. The largest possible value of a standard deviation is reached when the mean is 5. It diminishes both directions in our example for $4.34 < m < 8.57$. The maximum value of the standard deviation is between 4.58 and 3. Kalmijng and Veenhove (2005) argued that the bounded standard deviation is (1) only modestly dependent on the mean and (2) reasonably distant from almost all empirical studies. In the example below, the standard deviation differs between 1.4 and 3 .2 on this scale. Furthermore, they concluded that a standard deviation or variance were suitable measures of well-being inequality.

Table 2 Maximum values of the sample variance and standard deviation, for different means on an 11-step [0;10] scale

	Mean	Maximal variance	Maximal standard deviation
Minimum	0	0	0.00
	1	9	3.00
	2	16	4.00
	3	21	4.58
	4	24	4.90
Top	5	25	5.00
	6	24	4.90
	7	21	4.58
	8	16	4.00
	9	9	3.00
Maximum	10	0	0.00

Note: values calculated for different means using equation 1

Statistics of Inequality

The standard deviation (SDRaw), the per cent maximum calibration (SDIEFFA), and the Dynamic Range (DR) are applied to quantify the dispersion for both well-being variables, the 0-10-scale for satisfaction and happiness.

Standard Deviation (SDRaw)

Standard deviation is the square root of variance; it represents the average distance a set of numbers is distant from its mean.

$$s = \sqrt{\frac{(x - \bar{\bar{x}})^2}{n - 1}} \qquad (2)$$

The Instrument-Effect-Corrected Standard Deviation (SD_{IEFFA})

Delhey and Kohler (2011) describe the instrument effect-corrected standard deviation as a target measure to remove structural dependence. In their paper, they suggest two methods to calculate the instrument effect. The first method, applied in this research, assumes two limitations. Firstly, limited reading scales are used to measure happiness; and secondly, when measured, there is a minimum and a maximum degree of happiness. Therefore, the happiness standard deviation will be between 0 and max (σ).

$$(\sigma) = \sqrt{\frac{(u - \mu) * (\mu - 1) * N}{N - 1}} \qquad (3)$$

u = the upper boundary of happiness
l = the lower boundary of happiness
μ = mean

When the mean moves towards the centre of the scale, the maximum standard deviation increases, signifying that structural dependency is present. Furthermore, the minimum and maximum value of the happiness measurements will also determine the maximum standard deviation. To remove the structural dependency, Delhey and Kohler (2011) defines the IEFFA as:

$$IEFF^A = \frac{1}{(\sigma)} \quad (4)$$

$$SD_{IEFFA} = SD_{Raw} * IEFF \quad (5)$$

SD_{Raw} = observed standard deviation
$IEFF^A$ = an instrument effect, capturing the structural dependency.

The instrument-effect-corrected standard deviation SDIEFFA has a value between 0 and 1 and depends upon the proportion of the standard deviation from the theoretical maximum. Thus, 0 represents an equally happy/unhappy society, and 1 represents a country with the highest possible standard deviation.

Dynamic Range (DR)

The Dynamic Range also explains the data distribution where the differences between two successive data points are calculated. The following equation 6 is used to calculated. A detailed explanation of the calculation is in the appendix B.

$$DR = \frac{\sum/n_x - n_{x-1}/}{n} \quad (6)$$

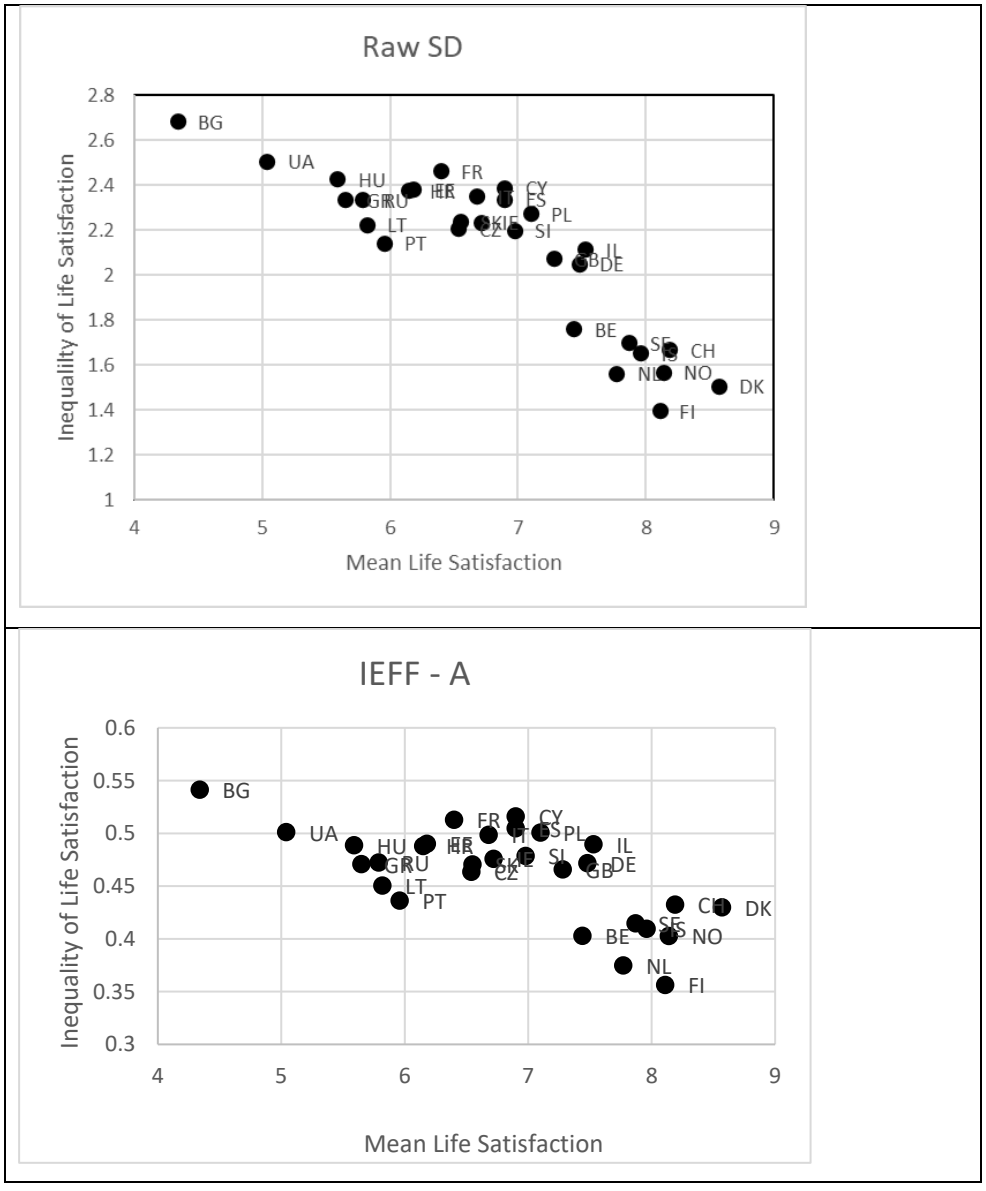
1.3.3 Country rankings of inequality

Raw standard deviation ranged between 1.4 and 3.2 for satisfaction and 1.4 and 2.9 for happiness. The range is narrowest in Finland, Denmark, and the Netherlands regarding life satisfaction; concerning happiness, the range was narrowest in Finland, Netherlands, and Belgium.

The IEFFA corrected standard deviations vary between 0.36 and 0.65 for satisfaction, 0.34 and 0.61 for happiness. The gaps are narrowest in Finland, Netherlands, and Norway for life satisfaction and Finland, the Netherlands, and Belgium for happiness.

The Dynamic Range differs between 1.39 and 3.03 for satisfaction, 1.35 and 3.04 for happiness. The range is narrowest in Finland, Denmark, and the Netherlands regarding life satisfaction, and in Finland, Netherlands, and Denmark for happiness.

Figure 2 Mean life satisfaction and life satisfaction dispersion in nations, ESS2012



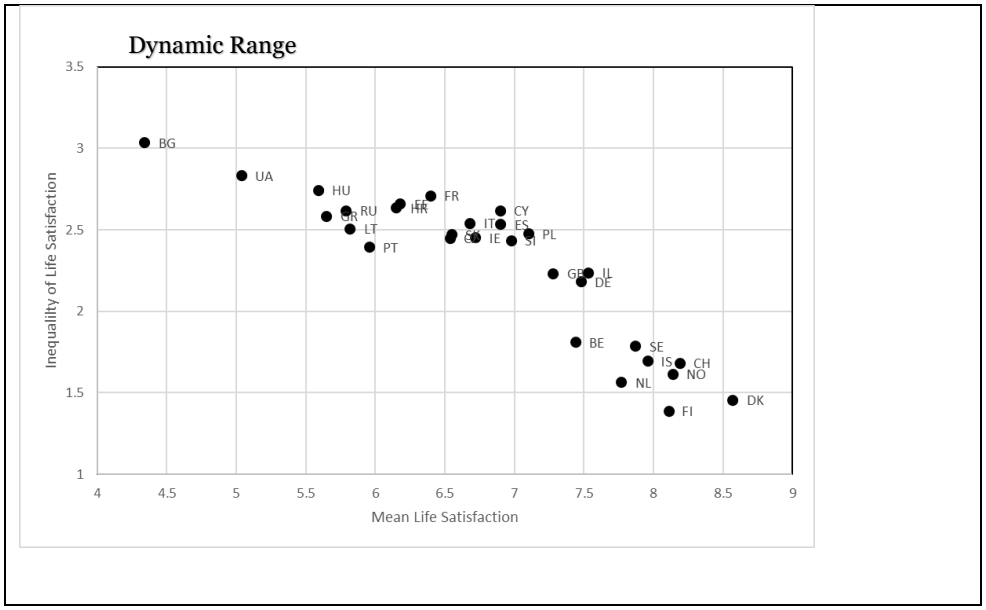
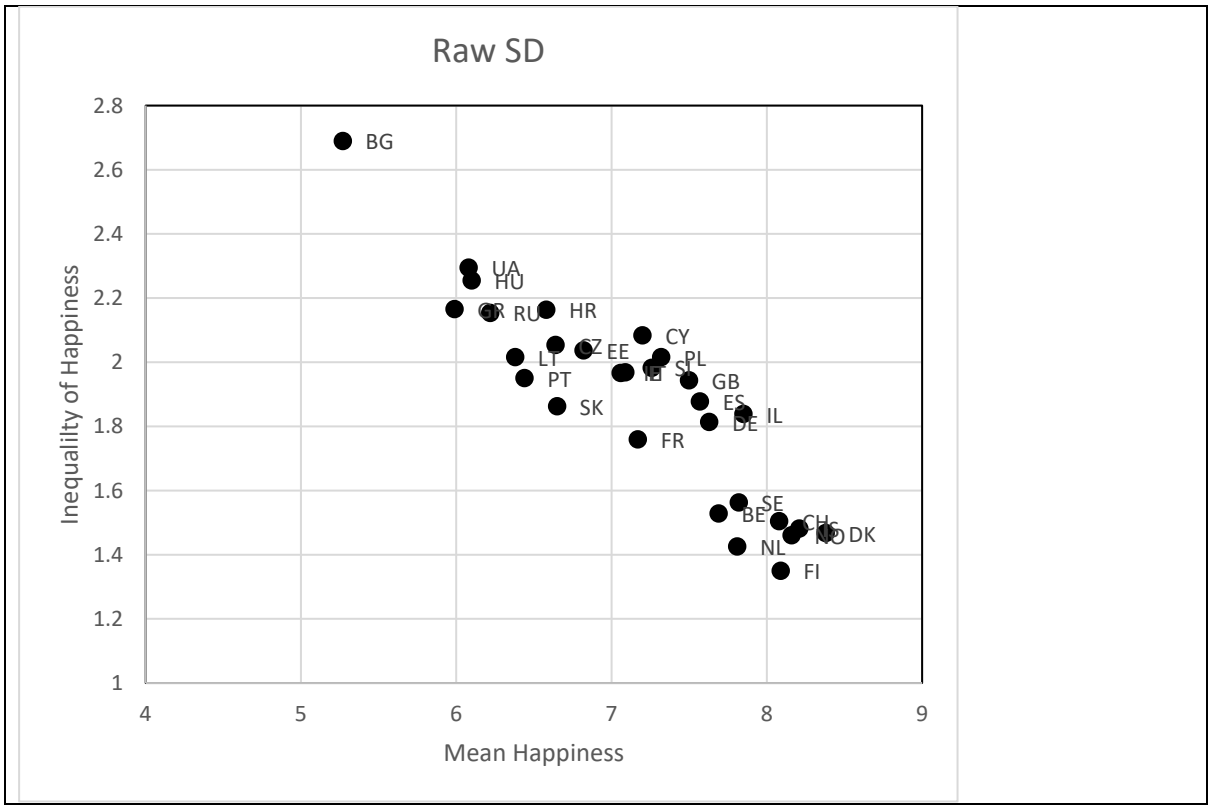
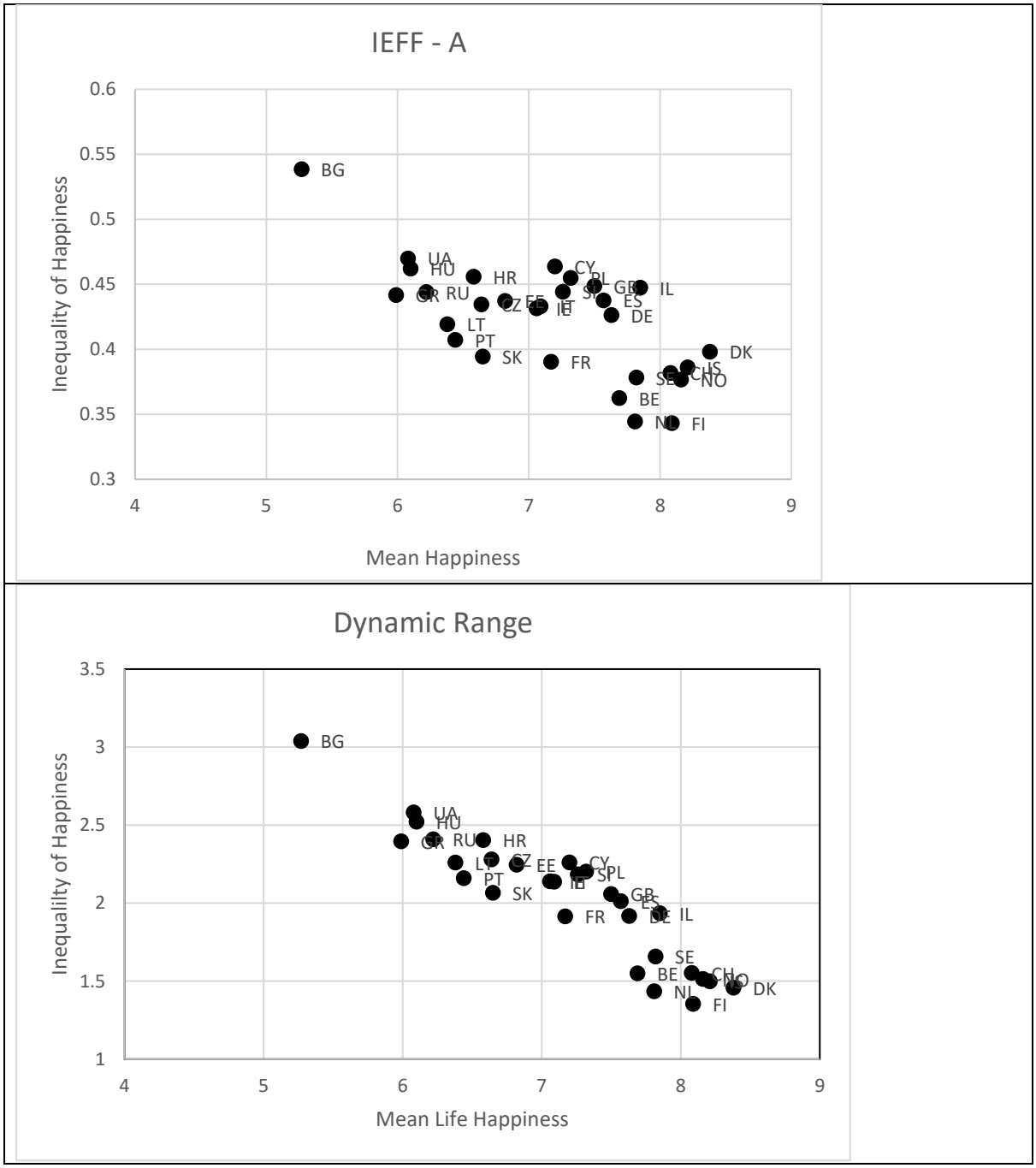


Figure 3 Mean happiness and happiness dispersion in nations, ESS 2012





1.3.4 Econometric models

The general linear model describes the patterns of interactions and associations. It incorporates several statistical tests, including regression analysis and analysis of variance (ANOVA), which are used to analyse the determinants of life satisfaction inequality (Delhey and Kohler, 2011).

$$Satisfaction\ inequality = \beta_0 + \beta_1(Gini) + \beta_2(logGDP\ per\ capita) + \varepsilon \quad (7)$$

$$Happiness\ inequality = \beta_0 + \beta_1(Gini) + \beta_2(logGDP\ per\ capita) + \varepsilon \quad (8)$$

β_0 = Intercept
β_1 = Coefficient for income inequality
β_2 = Coefficient for affluence
ε = residuals

H_0 = There is no significant prediction of satisfaction (happiness) inequality by income inequality and affluence.
H_1 = There is a significant prediction of satisfaction (happiness) inequality by income inequality and affluence.

$$H_0: \beta_1 : \beta_2 = 0$$

$$H_1: \beta_1 : \beta_2 \neq 0$$

In the following section, the measures outlined in this section will be examined to test the hypothesis above. Moreover, the correlates and determinants of both life satisfaction and happiness are investigated, and selected data examined.

1.4 RESULT AND DISCUSSION

All three measures of dispersion - the standard deviation, IEFFA correction and the Dynamic Range - are moderately associated (positively) with income inequality (r=0.49, 0.49, 0.46, p <.05) and strongly associated (negatively) with national affluence (r=0.71, 0.56, 0.69, p <.05), Table 3. Using the typically adopted alpha level of 0.05, the associations for all life satisfaction and income inequality measures are statistically significant. Therefore, the null hypothesis is rejected, where no relationship between dispersion and income inequality or national affluence exists. These results are in line with previous studies that indicate that the life satisfaction inequality tends to be larger when there are larger income gaps, as revealed by all three scatterplots (Fig 3); the same applies to countries with smaller GDP per capita (Clark et al., 2014). Similar results were also reported by Delhey and Kohler (2011) for the corrected IEFFA standard deviation.

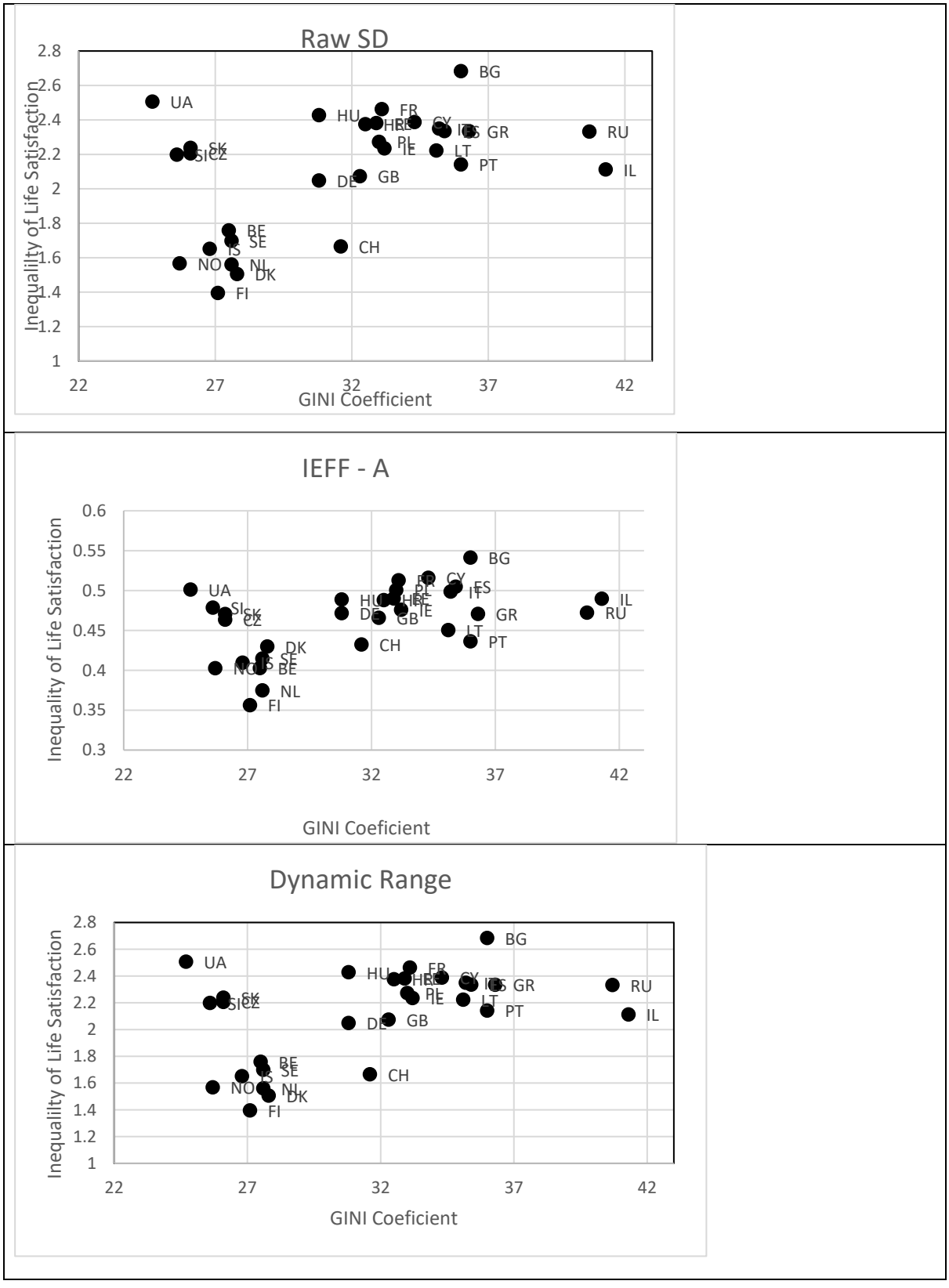
Table 3 Explaining life satisfaction and happiness inequality (r coefficients), ESS 2012

	Satisfaction			Happiness		
	Raw SD	IEFF-A	DR	Raw SD	IEFF-A	DR
Income inequality (Gini)	0.49*	0.49*	0.46*	0.44*	0.45*	0.41*
Log GDP per capita (in PPP)	0.71*	0.56*	0.69*	0.77*	0.65*	0.75*
Multiple (Gini + log GDP)	0.81*	0.69*	0.71*	0.84*	0.74*	0.83*

Note: Dependent variable – Life satisfaction and happiness inequality
Regression coefficients r
Data Source: ESS 2012
* p < 0.05

Descriptive scatterplots for both variables are provided in Figures 4 and 5, respectively.

Figure 4 Income inequality and life satisfaction dispersion in nations, ESS 2012



As per multiple regression analysis, the adopted alpha level smaller than .05 was required for significance. The ANOVA was significant for all three measures of dispersion. These findings rejected the null hypothesis (HO). The p-value is slightly larger for the SDIEFFA and GDP per capita than the other two statistics, but it is still significant. 65%, 48%, and 63% (R-squared respectively) of satisfaction inequality measures can be explained by the Gini coefficient and GDP per capita. Both income inequality and national affluence are significant determinants of life satisfaction inequality, with national income being the more important (Table 5) (r=0.81, 0.69, 0.71, p <.05).

Table 4 Explaining life satisfaction inequality: OLS regression, ESS 2012

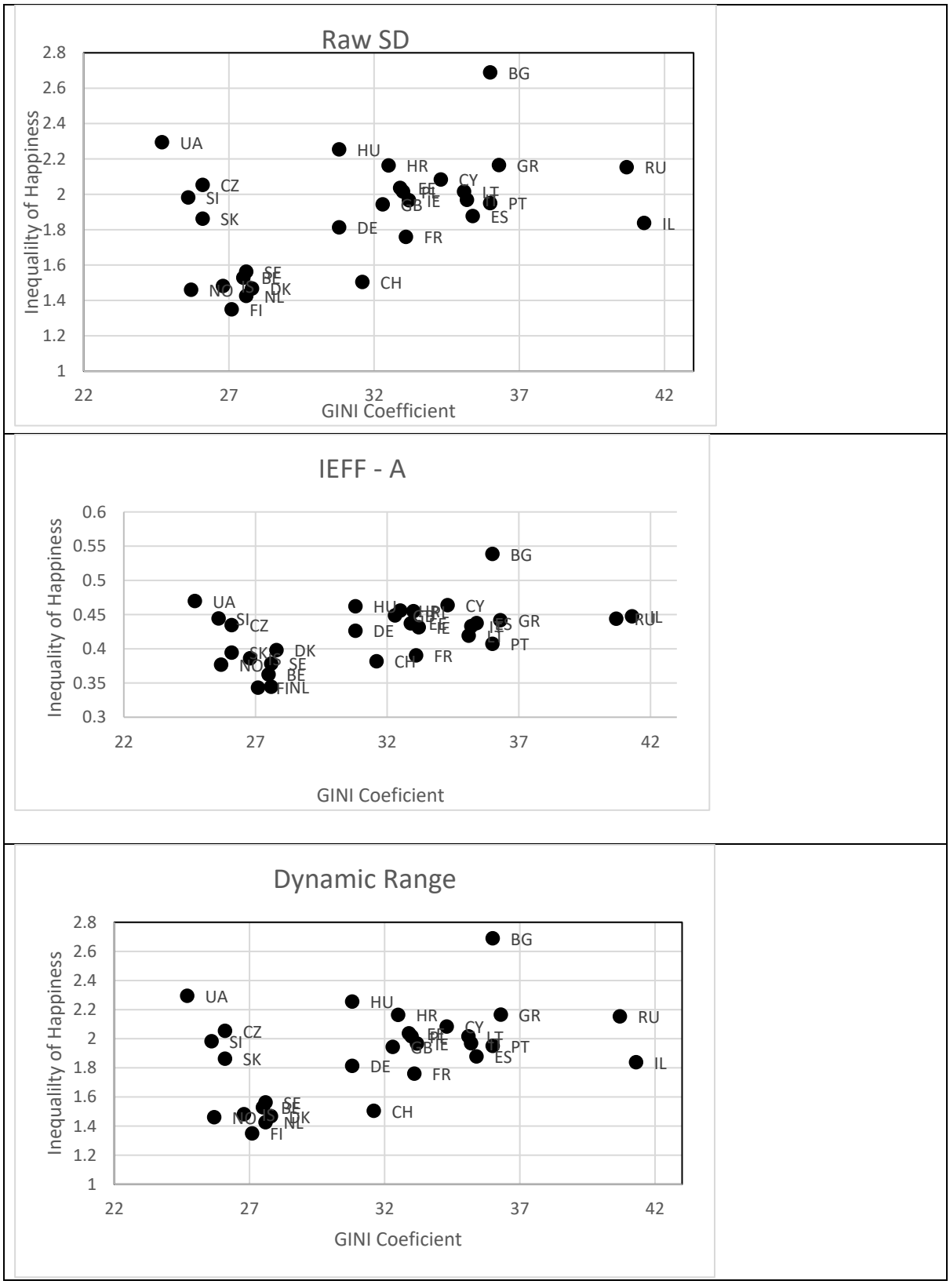
	Raw SD	IEFF – A	Dynamic Range
Income inequality (Gini)	0.029**	0.004**	0.036**
	(3.29)	(2.89)	(2.99)
Log GDP per capita (in PPP)	-0.562***	-0.055**	-0.744***
	(-5.61)	(-3.51)	(-5.56)
Observations	30	30	30
R – Squared	0.648	0.478	0.633

Dependent variable: life satisfaction inequality.
Standard beta coefficient, t statistics in parenthesis.
Data: ESS 6.
*** p < 0.01.
** p < 0.05.
* p < 0.1.

Explaining happiness inequality

The OLS results for happiness inequality are very similar to satisfaction inequality results. All the significant levels and signs are almost the same. All three measures of dispersion are moderately (positively) associated with income inequality (r=0.44, 0.45, 0.41, p <.05) and strongly (negatively) associated with national affluence (r=0.77, 0.65, 0.75, p <.05) (Table 5). The statistically significant F test for all three dispersion measures means that the null hypothesis - no relationship between the measures of dispersion and income inequality nor national affluence is rejected. Thus, the higher the income inequality and the lower the GDP per capita, the higher the happiness inequality.

Figure 5 Income inequality and happiness dispersion in nations, ESS 2012



According to multiple regression analysis, both income inequality and national affluence are significant determinants of the SDRaw (r=0.84, p <.05), SDIEFFA (r=0.73, p <.05) and the Dynamic Range (r=0.83, p <.05). P-values are small enough to reject the null hypothesis that there is no relationship between life satisfaction inequality (dependent variable), income inequality, and national affluence (independent variables). National income is once again the more important determinant for both coefficients. The highest R-squared figure of 73% for the Dynamic Range shows that the dependant variable is more strongly affected by the independent variables. In contrast, the data relating to the dependant variable is less explanatory for the lower R-squared results. Furthermore, all regressors were found to be significant, meaning that the estimated coefficients have statistical relevance in explaining the independent variables.

Table 5 Explaining happiness inequality: OLS regression, ESS 2012

	Raw SD	IEFF – A	Dynamic Range
Income inequality (Gini)	0.022**	0.003*	0.027*
	(2.96)	(2.66)	(2.52)
Log GDP per capita (in PPP)	-0.562***	-0.063***	-0.718***
	(-6.71)	(-4.73)	(-6.023)
Observations	30	30	30
R – Squared	0.644	0.495	0.730

Dependent variable: happiness inequality.
Standard beta coefficient, t statistics in parenthesis.
Data: ESS 6.
*** p < 0.01.
** p < 0.05.
* p < 0.1.

1.5 CONCLUSION

Whilst subjective well-being studies have been regularly published for many years, often attracting sensational headlines, research into subjective well-being inequality has been significantly scarcer. The purpose of this paper is to address this imbalance by measuring and comparing three different measures of subjective well-being inequality - those of standard deviation, IEFFA corrected standard deviation and a measure suggested by the author Dynamic Range. Drawing from European Social Survey data and then analysing income inequality's effect on these useful dispersion indicators.

The findings are robust regarding the various measures of inequality and the specification of the general linear models. Moreover, the results indicate that there are

substantial differences in well-being inequality in different European countries. Importantly, all three measures delivered similar results.

The IEFFA corrected standard deviation developed by Delhey and Kohler (2011) did not deliver a substantial difference in a country's ranking of well-being inequality, suggesting that small structural dependency is present in the data (Kalmeejen and Veenhoven, 2005). Furthermore, the difference between the Dynamic Range and that standard deviation is also negligible.

Moreover, life satisfaction and happiness inequality are not immune to income inequality. The findings suggest that income inequality and national affluence are significant determinants of satisfaction and happiness inequality, with national income being the more critical factor.

Empirical evidence relating to the association between income and well-being remains controversial and diverse. Several studies have traditionally found that income redistribution does not affect well-being inequality (Fahey and Smyth, 2004; Berg and Veenhoven, 2010; Stevenson and Wolfers, 2008). However, the analysis undertaken in this paper indicates quite the opposite; a lower Gini coefficient has a positive effect on well-being inequality.

The key finding of this study is that income inequality is a far more significant factor in explaining well-being inequality than had previously been assumed. The implications for policymaking are obvious: governments should be encouraged to address well-being inequality by targeting income inequality. As the classical economist Adam Smith (1776) suggested, 'no society can surely be flourishing and happy, of which the far more significant part of the members are poor and miserable.

The limitations of this study should be acknowledged. Firstly, the analysis would improve if the data were drawn from many countries, including high-income, low-income, and transitional countries. Secondly, the Affect Balance Scale to measure emotional well-being has not been implemented due to insufficient data. Finally, future research could examine the link between well-being and income inequalities and affluence over time.

Despite these limitations, the findings strongly suggest that income inequality plays a far more critical role in well-being inequality than previously thought. The arrival at

this conclusion was assisted significantly by developing a new measure, the 'Dynamic Range.'

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1.6 Appendix A: Ranking

Table 6 Life Satisfaction, happiness inequality rankings (top = low inequality) and rank changes.

Satisfaction					Happiness				
RANK					RANK				
Δ rank	Dynamic Range	Rank SD_{Raw}	Rank SD_{IEFFA}	Δ rank	Δ rank	Dynamic Range	Rank SD_{Raw}	Rank SD_{IEFFA}	Δ rank
0	FI	FI	FI	0	0	FI	FI	FI	0
0	DK	DK	NL	+1	0	NL	NL	NL	+1
0	NL	NL	NO	+1	0	DK	NO	BE	+1
0	NO	NO	BE	+4	0	IS	DK	NO	+4
+1	CH	IS	IS	0	+1	NO	IS	SE	0
-1	IS	CH	SE	+1	-1	BE	CH	CH	+1
0	SE	SE	DK	+5	0	CH	BE	IS	-5
0	BE	BE	CH	-2	0	SE	SE	FR	-2
0	DE	DE	PT	+3	0	FR	FR	SK	+3
0	GB	GB	LT	+5	0	DE	DE	DK	+5
0	IL	IL	CZ	+3	0	IL	IL	PT	+3
0	PT	PT	GB	-2	0	ES	SK	LT	-2
0	SI	SI	SK	+4	0	GB	ES	DE	+4
0	CZ	CZ	DE	-5	0	SK	GB	IE	-5
+1	IE	LT	RU	+4	+1	IT	PT	IT	+4
+1	SK	IE	IE	0	+1	IE	IE	CZ	0
+1	PL	SK	SI	-4	+1	PT	IT	EE	-4
-3	LT	PL	HU	+6	-3	SI	SI	ES	+6
+1	ES	RU	IL	-8	-1	PL	LT	RU	-8
+1	IT	ES	EE	+2	+1	EE	PL	SI	+2
-2	RU	IT	IT	0	-3	LT	EE	IL	0
+1	CY	EE	PL	+4	+1	CY	CZ	GB	-4
-1	EE	CY	UA	+3	-1	CZ	CY	PL	+3
+1	FR	HU	ES	-4	+1	RU	RU	HU	-4
-1	HU	FR	FR	0	-1	HU	HU	CY	0
0	UA	UA	CY	+3	0	UA	UA	UA	-3
0	BG	BG	BG	0	0	BG	BG	BG	0

1.7 Appendix B: Dynamic Range calculation

The following data example is used to illustrate the calculation {8, 7, 5, 10, 6}. First, the absolute value of the difference between the second and first data points is recorded, in this case, 7-8 =-1=/-1/=1. Next, the calculation continues by entering the absolute differences between all values. The Dynamic Range coefficient is then obtained by averaging the recorded absolute values.

$$DR = \frac{\sum/n_x - n_{x-1}/}{n}$$

Table 7 Dynamic Range calculation

	A	B	C	D	E	F
1		8	7	5	10	6
2	8		=ABS(C$1-$A2)	=ABS(D$1-$A2)	=ABS(E$1-$A2)	=ABS(F$1-$A2)
3	7			=ABS(D$1-$A3)	=ABS(E$1-$A3)	=ABS(F$1-$A3)
4	5				=ABS(E$1-$A4)	=ABS(F$1-$A4)
5	10					=ABS(F$1-$A5)
6	6		=AVERAGE(C2:F5)			
7						

Article 2: Income Inequality and Mental Health: An Examination of Socioeconomic Inequalities in Europe

ABSTRACT

Objective: The purpose of this article is to investigate the social determinants of mental health and assess the impact of a country's level of economic inequality on wellbeing among European countries. *Methods:* Using multiple regression and examining data from the European Quality of Life Survey, this article examines the link between positive and negative affect balance indicators and income inequality. *Results:* European people living in countries with higher income inequality are more likely to experience mental health issues. Social capital and status anxiety are also significant determinants of mental health. Conclusion: The findings contradict the tunnel effect hypothesis, suggesting that income inequality inspires hope and improves wellbeing. Moreover, they reinforce the relative deprivation theory; lower economic inequality is essential for wellbeing.

Keywords

Social structure, socioeconomic status, income inequality, well-being, mental health

2. 1 INTRODUCTION

The combination of increasing income inequality reported in developed nations (Piketty 2014; Piketty and Saez 2014) and the increasing popularity of subjective wellbeing as a measure (Diener and Tov 2011; Layard 2010; Stiglitz et al. 2009) has led to the growing interest of the consequence of income inequality on human wellbeing. The research has provided arguments for a negative and positive connection between rising economic disparity and subjective wellbeing. Alesina et al. (2004), Biancotti and D'Alessio (2008); Verme (2011) identified a negative association while Berg and Veenhoven (2010) identified a positive association, other findings were inconclusive (Bjornskov et al. 2008; Blanchflower and Oswald 2004; Helliwell 2003; Stevenson and Wolfers 2008)

Economic inequality and its consequences have been a common concern for many decades (Wilkinson, 1996; Marmot, 2004; Marmot and Wilkinson, 2006; Wilkinson and Pickett, 2006, 2010, 2018). According to Wilkinson and Pickett (2011), more unequal societies cause social and health problems for almost everyone. It is not just the communities at the bottom but also people in the middle and at the top that are likely to experience the medical effects and worse wellbeing. Among the developed economies, the more equal ones do better according to majority life indicators. In 'The Spirit Level', Wilkinson and Picket (2010) show that income inequality is inversely related to a country's health, life expectancy, crime rates and literacy rates. Therefore, an equal society is medically necessary, and it is not just a political goal. It is not the wealth of a country that would determine its wellbeing ranking but the gap between its population richest and the poorest. In 'The Inner Level' (2018), the authors explained how material inequalities affect people psychologically, making them feel, think, and behave in specific ways. It set out the evidence showing the positive relationships between the size of the gap between rich and poor and the tendency of people to use superiority and inferiority to define themselves and others. People living in unequal societies find social status essential and become controlled by status competition. The elevated stress hormones are associated with low status, and inequality is closely linked to the rates of anxiety and depression. Layte (2012) suggested three mechanisms through which mental wellbeing is affected, social capital, status anxiety and neo-materialist hypotheses. The neo-materialist hypothesis suggests that the combination of a lack of resources possessed by people and

systematic under-investment across a wide variety of human, cultural, and political-economic systems explain health inequality (Lynch et al, 2000).

Socioeconomic interest in subjective wellbeing has been increasing rapidly for the last two decades. This present study attempts to narrow this research gap by exploring the relationship between income inequality and mental wellbeing as measured by status anxiety, social capital, and social infrastructure. It combines a theoretical exploration of mental wellbeing with an empirical study using the European Quality of Life Survey.

Many studies have analysed the determinants of subjective well-being and social policies for European people (Layte, 2012; Delhey and Dragolov, 2014). However, little econometric evidence exists for factors affecting the subjective well-being measured by positive and negative affect. This gap in the existing literature is a motivation for this paper that investigates the factors associated with mental well-being among people living in Europe. The findings of this research provide a significant contribution to the knowledge of both positive and negative affect indicators. The first contribution of this paper is to discuss the relationship between income inequality and subjected mental health. Furthermore, the results will be compared using the positive and negative affect indicators. The second, is to identify the key determinants affecting European mental well-being, using the social capital, status anxiety and neo-materialist hypotheses. The final contribution is to provide policy suggestions.

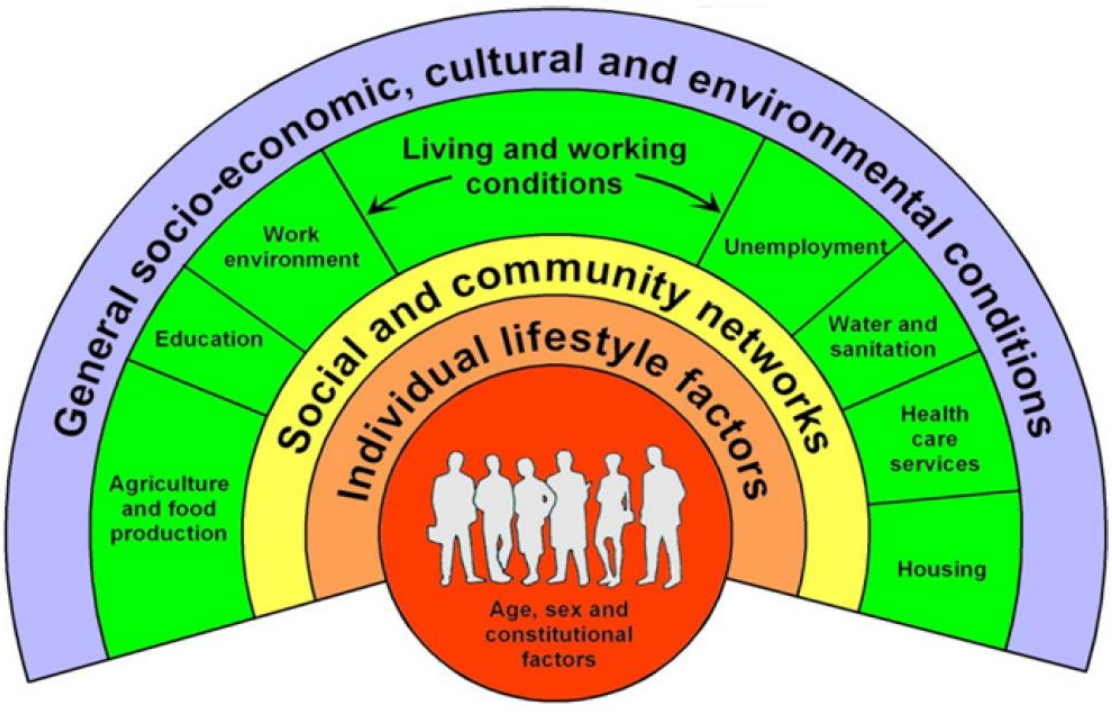
The remainder of this paper is organised as follows. Section 2 discusses the existing literature related to mental wellbeing and inequality. Section 3 then considers the proposed research design and other methodological considerations related to the current study. In section 4, the empirical results will be presented, including the analysis of subjective wellbeing measured using positive and negative affect indicators. Finally, in section 5, the conclusions are discussed in-depth and in context and the implications for future research are suggested.

2.2 LITERATURE REVIEW

Health Inequality

WHO (2018, para. 2) defines health inequities as 'systematic differences in the health status of different population groups.' The COVID-19 epidemic has demonstrated how vital health is to our economies and society. The various ways a pandemic has affected people demonstrate that socioeconomic status plays an essential role in health. Health inequalities across socioeconomic categories are not limited to the most and least privileged; they exist across the whole social gradient (Marmot and Wilkinson, 2006). Social inequalities in health are widespread across Europe. They extend up the social ladder; the higher a person's socioeconomic status, the healthier he or she is likely to be (Lundberg and Lahelma, 2001). Inequalities in early childhood development and education, job and working conditions, housing, and neighbourhood conditions, living standards, and, more broadly, the ability to participate equally in the economy give an adequate explanation (Marmot and Bell, 2012). Dahlgren and Whitehead (1991) identified a complex and interconnected web of determinants influencing population health and health inequality, Figure 6. Health inequalities are evident in people with different incomes, housing, education, and people of different sexes, races, and areas of residence.

Figure 6 The Social Determinants of Health, Source: Dahlgren and Whitehead (1991)



Two theories were proposed to explain the contradictory findings in the research on the link between income inequality and subjective wellbeing: the relative deprivation hypothesis and the tunnel effect hypothesis.

Relative Deprivation Hypothesis

The growing number of empirical studies suggests that relative economic status determines subjective wellbeing and health (Eibner and Evans 2005; Ferrer-i-Carbonell and Frijtes 2004; Luttmer. 2005). The relative deprivation hypothesis describes an incredibly robust phenomenon, which notes that human beings form self-assessments based on the standing in the immediate circle; they do not form self-assessment based on the standing in the world (Festinger, 1954, Gladwell, 2014). According to this hypothesis, income inequality hurts wellbeing, caused by the feelings of being deprived compared to others (Walker and Smith, 2002)

According to Wilkinson and Pickett (2006), people living in societies with high-income inequality are more concerned with social status and are more dominated by status competition. The unpleasant feelings are a result and can cause stress reactions that can directly harm individual health. In addition, Gilbert (2000) concluded that shame, social anxiety, and depression (but not guilt) are linked to a sense of inferiority and submissive behaviour. He argued that a better knowledge of the defensive behaviour of people in unfavourable subordinate positions could provide insight into the psychobiological mechanisms underlying various mental illnesses. Furthermore, Wood et al. (2011) proposed a new psychological model explaining the relationship between low income and the risk of mental illness. In their longitudinal research, they observed 30,000 participants over 17 years. They concluded that a concern for social rank is the mechanism behind the income and distress link, and the explanation is psychosocial rather than material.

Delhey and Dragolov (2014) suggest that inferiority feelings partially explain why inequality affects mental health. Adler and Wolfe (1927) identified a conflict between feelings of inferiority and superiorty and discovered that these emotions are a natural part of being human. The feelings of inferiority can result from the unfavourable social comparison (Appel et al., 2015); therefore, an individual's social environment needs to be observed when examining these feelings (Sweeney, 2009). Several related constructs have been used in literature to define inferiority feelings. Some of the

components that define inferiority feelings are self-esteem (Dreikurs, 1991; Strano and Dixon, 1990), not being accepted by others (Dreikurs, 1991), and having no feelings of belonging (Abramson, 2015). Likewise, shame is frequently related to feelings of rejection. Furthermore, rejection feelings are connected to lower self-esteem (Gausel et al., 2012). Tangney et al. (2003) describe shame as a permanent chronic sense of inferiority that a person has internalised as being part of one's identity. They suggested that shame, like self-esteem, is an outcome of incongruity between the self-ideal and self-concept. Moreover, low self-esteem is linked to reduced self-efficacy, increasing incompetence feelings (del Rosario and White, 2006).

Layte et al. (2019) proposed the status anxiety hypothesis, arguing that prolonged stress causes systematic inflammation, resulting in various health problems and premature ageing. Alain de Botton (2005) defines *status anxiety* as a social condition caused by worrying about being a loser or winner. People care about their status because other people treat them based on the level of status they have. They worry that having no status would mean little respect and low confidence. In his book Alain de Botton (2006: 5) stated: "Our ego or self-conception could be pictured as a leaking balloon, forever requiring the helium of external love to remain inflated, and ever vulnerable to the smallest pinpricks of neglect."

Medical studies provide evidence that stress significantly influences the occurrence and course of many illnesses, suggesting that health and subjective wellbeing are likely to be closely linked. Sapolsky (2002) identified the link between stress and hierarchy in primates in the wild. Measuring stress hormones from extracted blood, he discovered that the rank determined the level of stress in the system and linked the stress levels to deteriorating health. The primates were the most stressed when they were at the bottom of the hierarchy or when their established status became insecure. The males with lower social rank had higher stress levels than the dominant males, resulting in increased heart rates, higher blood pressure and compromised immune and reproductive systems. A tragedy that enabled the primates to change their social system provided Sapolsky (2002) an opportunity to research how the absence of stress can impact society. He concluded that the overall health of the primates improved; they had no longer increased anxiety, stress hormones, and stress-related diseases disappeared.

Tunnel Effect Hypothesis

Contrary, the tunnel effect refers to people's tendency to be satisfied by the success of others if they perceive it as a sign of improvement in their future (Hirschman and Rothschild, 1973). Seeing the disproportionately higher income of others in society might inspire hope and indicate that the situation will improve sooner or later, thus, improving wellbeing (Zhang and Churchil, 2020). Pleeging and Burger (2020) noted that hope appeared to be a critical element in many economic phenomena and suggested that research into hope, optimism, expectations, aspiration, and confidence in behaviour would benefit the field. Hirschman and Rothschild (1973) used the analogy of a traffic jam to explain this phenomenon. When engaged in a severe traffic jam in a two-lane tunnel with both lanes heading in the same direction, Hirschman and Rothschild (1973) argued that the unexpected movement of cars in the adjacent lane promotes optimism. Even when sitting stuck in a lane, knowing that the traffic jam has been broken brings feelings of positivity. Thus, the tunnel effect hypothesis argues that great income inequality may be tolerated by society, which improves overall subjective wellbeing. However, unless the income inequality is addressed in time, the greater the initial tolerance, the greater the potential for a reversal once the tunnel effect wears off, negatively impacting wellbeing (Hirschman and Rothschild, 1973). According to this literature review, we can formulate the first hypothesis for this paper.

H1 = There is a significant prediction of mental wellbeing (measured using positive and negative affect indicators) by income inequality and affluence, controlling for status anxiety, personal insecurity, and homicides.

Social Capital and Mental Wellbeing

The link between social isolation and decreased psychological wellbeing has been well recognised since Durkheim (1951). In his book Durkheim (1951) focused on suicide, a reflection of mental distress, and demonstrated how modern economies place enormous strains on individuals, leaving them dangerously devoid of the feeling of general belonging and direction.

Economists and social scientists in many countries have discovered that social networks can significantly affect general wellbeing; they have coined the term' social capital' to describe these effects (Coleman 1994; Putnam 2000; OECD 2001; Woolcock

2001). Moreover, several studies in Italy have discovered a positive relationship between social capital and more efficient financial and labour markets (Putnam et al. 1993; Helliwell and Putnam 1995; Ichino and Maggi 2000; Guiso et al. 2004). Sadness, loneliness, low self-esteem, and eating and sleeping disorders are less common feelings when having close friends, family, co-workers or neighbours. A good indicator of social capital is social trust, defined as the idea that others may be trusted (Helliwel and Putnam, 2004).

Bourdieu (1986), Coleman (1994) and Putnam (2000) delivered two distinct schools of thought on social capital that are currently prominent in the published literature. Bourdieu differentiated between three types of capital that might influence people's social status: economic, social, and cultural capital. He defined *social capital* as 'the sum of the actual or potential resources that are linked to the possession of a durable network of more or less institutionalised relationships of mutual acquaintance and recognition, in other words, to membership in a group' (Bourdieu, 1986: 248). Furthermore, the amount of social capital in a network is determined by its size and the economic or cultural capital (Bhandari and Yasunobu, 2009). According to Coleman (1994), social capital is a public good since it occurs in relationships.

Furthermore, Elgar (2010) concluded that income inequality might contribute to short life expectancy and adult mortality because of social inequalities in trust. The negative effect is because low-trust societies may be unable to build the kinds of social supports and relationships that promote healthy ageing and successful ageing. Elgar (2010) also confirmed psychosocial explanation when analysed a relationship between income inequality and homicides. The following is a hypothesis used to test the social capital hypothesis. According to this literature review, we can formulate the second hypothesis for this paper.

H2 = There is a significant prediction of the mental wellbeing (measured by means of positive and negative affect indicators) by income inequality and affluence, controlling for the levels of trust in people, trust in institution, civic participations, support and making ends meet.

Welfare State and Mental Wellbeing

Since Wilkinson (1996) published his path-breaking book 'Unhealthy Societies: The Afflictions of Inequality', many scholars have continued to research the effect of macro

indicators on population health. For example, generous policies and benefits appear to be linked to improved health for all population members, not just those directly impacted or targeted. Furthermore, social and health spending is linked to better health and fewer health inequities. However, this research is still limited, making it difficult to draw consistent conclusions (Bergqvist et al. 2013).

Muntaner et al. (2011) reviewed 73 studies guided by the welfare state regime framework. After controlling for different variables, they identified a link between politics expressed in terms of democracy, globalisation, political traditions, or welfare states and population health and health inequalities. Moreover, Bambra and Eikemo (2008) observed that while the negative link between unemployment and health is present across Europe, it changes depending on the welfare state, indicating that social protection may have a moderating effect. They argued that the particularly significant negative association among women was since they are more likely than males to get lower than average replacement rates.

Governments frequently influence income inequality through taxation policy, subsidies, income transfers, investment incentives, and other mechanisms. Kaplan et al. (1996) built on this idea and stressed the importance of economic decisions critical to health. Their research concluded that the income inequality in the United States was substantially associated with age-specific death rates, low birth weight, violent crime, smoking, and police protection costs. According to this literature review, we can formulate the third hypothesis for this paper.

H3 = There is a significant prediction of the mental wellbeing (measured by means of positive and negative affect indicators) by income inequality and affluence, controlling for the country levels of social infrastructure.

Wellbeing Measurements

The Organization for Economic Cooperation and Development defined subjective wellbeing as 'good mental states, including all of the various evaluations, positive and negative, that people make of their lives and the affective reactions of people to their experiences' (OECD, 2018: 12). Many researchers have tried to assess wellbeing for at least 50 years and, it has risen in prominence on the European policy agenda in the last ten years (Ahrendt et. al., 2018). Stiglitz et al. (2009) identified the limits of using GDP and other financial indicators to evaluate progress and concluded that these

measures are insufficient to represent the complexities of modern society. Life satisfaction and happiness measure have been frequently used to measure wellbeing (Arechavala et al., 2015). However, wellbeing is a multifaceted concept, and these single items may not be an effective way to measure the quality of life (Dolan and White 2007, Huppert, 2014, Kahneman and Krueger 2006). Layte et al. (2012) used WHO5, a self-reported mental health assessment, as a systematic method to measure well-being. Hupper and So (2013) suggested that positive mental well-being may be thought of as the polar opposite of mental illness and attempted to define mental well-being in terms of the absence of mental disorder

To conclude, according to the literature review, the empirical evidence for a link between economic inequality and mental health is inconclusive. This review of literature discusses the existing theories on that relationship. Moreover, the relationship between adverse changes in social capital, social exclusion and government spending in the European countries are discussed. The research strategy and measurements selected for this study are described in the next section.

2.3 DATA AND METHODS

2.3.1 Data and Countries

The study utilises the data from the fourth round of the European Quality of Life Survey. Nearly 37,000 candidates were interviewed for the EQLS 2016 in 33 countries (28 EU Member States and five candidate countries) Albania, North Macedonia, Montenegro, Serbia, and Turkey. The main objective of EQLS is to collect data examining both the objective circumstances and subjective experiences of life among European citizens (Ahrendt et al, 2018). The analysis is divided into two steps, data preparation and data modelling. Moreover, two-stage sampling is required; first, the suitable countries are selected; second, the participants are drawn from the sampled countries. To conform with Wilkinson and Pickett's (2010: 10) premise that income inequality becomes more relevant once society reaches a certain level of income per capita, the threshold of $ 15 000 (PPP) is applied to the data set. The 32 countries finally selected, after removing Albania, differ in a variety of ways, including income inequality, trust, and social exclusion indicators.

The amount of missing data and the pattern is estimated using the missing data function in SPSS. There are no missing values on country level (level 2) variables.

However, most of the level 1 variables have missing content values of less than 5 % and, therefore, can be considered MCAR (Rubin, 1976). One of the methods suggested by Peugh and Enders (2004) to deal with missing data is listwise deletion. The sample is reduced to 33,475 participants when cases with missing data are also eliminated.

Self-reported Indicators

Subjective wellbeing

This paper addresses subjective wellbeing utilising positive and negative affect indicators. The EQLS questionnaire was employed to measure both underlying constructs. The first construct, positive subjective wellbeing, consisted of five questions and the second construct, negative subjective wellbeing, consisted of three questions. The SPSS software was used to reverse the variables; so high scores indicate stronger positive or negative affect values. A Cronbach analysis was conducted using both constructs to identify the subscales alpha, $\alpha = .89$ for the positive affect indicators and 0.83 for the negative ones, indicating that the variables have an adequate level of inter-item reliability. Moreover, the variables have an adequate level of inter-item reliability, and that can be merged into one composite index.

Subjective wellbeing, positive affect indicators

The responses to the five items below are commonly used to generate The World Health Organization Well-Being Index (WHO5). An index that is widely used to assess subjective psychological wellbeing. Topp et al. (2015) identified this measure to have strong construct validity.

Please indicate for each of the five statements which is closest to how you have been feeling over the last two weeks.

a. I have felt cheerful and in good spirits
b. I have felt calm and relaxed
c. I have felt active and vigorous
d. I woke up feeling fresh and rested
e. My daily life has been filled with things that interest me

Subjective wellbeing, negative affect indicators

The subjective unhappiness is measured using the following questions

Please indicate for each of the three statements which is closest to how you have been feeling over the last two weeks.

a. I have felt particularly tense

b. I have felt lonely

c. I have felt downhearted and depressed

1_____6

At no time All of the time

Health Status

Many people who have long-term physical health issues also suffer from mental health issues (Naylor et. al., 2012). Physical health, being one of the key determinants of wellbeing, was therefore included in the analysis. Participants were asked the following question.

In general, how is your health?

1_____5

Very good Very bad

Social support

Ahrendt et al. (2018) suggested that people who feel they have no one to turn to in various challenging situations show lower resilience. They concluded that the concept of resilience was an attribute affected by circumstances and not an inherent characteristic. The participants were asked the following question.

If you were feeling a bit depressed and wanting someone to talk to?

1	2	3	4
A member of your family / relative	A friend, neighbour, or someone else, who does not belong to your family or relatives	A service provider, institution, or organisation	Nobody

Self-reported difficulties in making ends meet

The EQLS4 survey carried an item that captured respondents' financial difficulty; the respondents were asked the following question.

A household may have different sources of income and more than one household member may contribute to it. Thinking of your household's total monthly income: is your household able to make ends meet?

1_____6

Very easily With great difficulty

Quality of Society Indicators

Personal insecurity

Stiglitz et al. (2009) noted that older and richer people feel more fearful about safety than younger people, despite lower probability of becoming a victim of crime. Two following questions were asked respondents related to their safety.

To what extent do you agree or disagree with the following statements?

a. I feel safe when I walk alone in this area after dark

b. I feel safe when I am at home alone at night

1_____5

Strongly agree Strongly disagree

The Cronbach's Alpha of .78 suggested that the scale had a high level of interim reliability. Both variables were merged into one composite index. High scores indicated feelings of safety, and low score feelings of unsafety.

Trust in People

Helliwell and Putnam (2004) identified the belief that others can be trusted to be a robust empirical measure of social capital. Respondents were asked the question below. High scores indicated high levels of trust and low scores, low levels of trust.

Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people?

1_____10

You can't be too careful Most people can be trusted

Trust in Institutions

Trust in public institutions is essential for financial and political systems to function correctly. Moreover, trusting others, both family and friends and those in a position

of authority, is substantially connected with better subjective well-being (Helliwell and Putnam, 2004). While social capital can be assessed by inter-personal trust, the effectiveness of government policies can be evaluated by trust in institutions (Klijn et.al, 2010). Algan et al. (2017) concluded that unemployment increased in parallel with a decline in trust in institutions, even though unemployment had relatively minor or no impact on interpersonal trust. Thus, the question below, referring to trust in institutions, is also included in the analysis. The EQLS4 survey carried an item that asked respondents how much they trusted seven different institutions, the parliament, legal system, news media, police, government, local authorities, banks and humanitarian or charitable organisations. The scale had a high level of internal reliability, as determined by a Cronbach's alpha of 0.903. All variables were merged into one composite index.

Please tell me how much you personally trust each of the following institutions.

1_____10

Do not trust at all Trust completely

Perceived social exclusion

The EQLS wave 4 contains two questions, commonly used in the happiness literature, that can be used to examine the inferiority feelings (Layte, 2012; Layte and Whelan, 2014; Delhey and Dragolov, 2014, Steckermeier and Delhey, 2018). Respondents were asked to indicate to what extent they agree or disagree with the following statement.

Please tell me whether you strongly agree, agree, neither agree nor disagree, disagree or strongly disagree with each statement

I feel that the value of what I do is not recognised by others.

1_____5

Strongly agree Strongly disagree

Some people look down on me because of my job situation or income.

1_____5

Strongly agree Strongly disagree

The scale suggests a high level of interim reliability, as determined by a Cronbach's Alpha of .7. The result indicated that both variables could be merged into one composite index. High scores indicate higher inferiority feelings, and low scores indicate lower inferiority feelings. The highest scores were in Denmark and Germany, and the lowest scores were in Turkey and Bulgaria.

Macroeconomic Level Indicators

Income Inequality and income per capita

The Gini Index provided by The Standardized World Income Inequality Database is used (Solt, 2016). The coefficients vary between 23 for Slovakia and 40.2 for Turkey. The affluence is compared using the GDP per capita in purchasing power parities in 2016 using the World Bank data, the highest value US $112,700.68 is in Luxembourg, and the smallest value US $15,0646.32, is in Macedonia (World Bank, 2016), the data was log-transformed to accommodate for the large differences.

Measures of expenditure in social Infrastructure

Some of the key investment indicators in social infrastructure are an expenditure in social protection, health care and education. The proportion of the country gross domestic product spent on social infrastructure is used to determine the relationship between mental wellbeing and inequality. The distribution of health workers is uneven among European countries. Countries with Health workers are distributed unevenly across the globe, with the highest number 51.23 for Austria and the lowest number 18.14 for Turkey (WHO, 2021)

Table 8 Measures of Social Welfare Expenditure

Measures	Year	Source
Government spending on social protection (% of GDP)	2018	Jansen et al. (2018)
Public expenditure on health (%GDP)	2014	Jansen et al. (2018)
Government expenditure on education, total (% of GDP)	2014	Jansen et al. (2018)
Medical doctors (per 10,000)	2016	WHO (2016)

Homicides

The World Bank (2016) provided data on homicide rates per 100,000 people. Homicide rates vary across Europe, with the lowest rate of 0.2 in Luxembourg and the highest rate of 2.7 in Turkey.

Personal Level Indicators

Gender, education, and principal economic status

Gender is an independent variable that is represented by a dummy variable with values of 1 for men and 2 for women. The level of education was measured using the ISCED (1997) scale. Participants were asked about the highest level of education they completed; their responses were grouped into early childhood (0), primary (1), lower secondary (2), upper secondary (3), post-secondary non-tertiary (4), short-cycle tertiary (5), bachelor (6), master (7) and doctoral (8) education. Finally, labour market status was determined by asking the participants about their principal economic status and assign their responses to retired, full-time homemakers and students.

2.3.2 Data Analysis

Descriptive analysis

The preliminary investigation will develop a scatterplot to examine the relationship between the independent variables and negative and positive mental wellbeing.

Multiple Regression

A multiple regression analysis will be used to determine how much variance in the dependent variable can be explained by the independent variables (Laerd Statistics, 2015). To find evidence of clustered observation within level 2 units, the interclass correlation coefficient (ICC) is calculated. Determination of the ICC is essential; otherwise, the assumption of OLS would be violated, resulting in small standard errors (Heck et al., 2014).

$$ICC = \frac{\sigma^2_{\mu_{0j}}}{\sigma^2_{\varepsilon_{ij}} + \sigma^2_{\mu_{0j}}} \qquad (1)$$

$\sigma^2_{\varepsilon_{ij}}$represent Level 1 variance estimate.

$\sigma^2_{\mu_{0j}}$ represents Level 2 variance estimate

Heck, et al. (2014) suggested that with the absence of clustering in the data, multiple regression was suitable to predict the dependent variable. Therefore, mental wellbeing will be predicted with multiple independent variables using multiple regression.

One of the most important steps is analysing the data and identifying whether the multiple regression is suitable. There are several key assumptions to consider when performing a multiple regression. The assumption of independence of observation is designed to test whether the observation errors are independent. The Durbin-Watson was run as part of the multiple regression procedure (Laerd Statistics, 2015).

$$Mental\ Wellbeing_{ij} = \alpha + \beta_1 lnGDP_j + \beta_2 Ineq_j + \beta_3 X_{ij} + e_{ijt} \quad (2)$$

$Mental\ Wellbeing_{ij}$ – Mental wellbeing for participant i within a country j
α – Intercept
$lnGDP_j$ – the log transformed GDP per capita
$Ineq_j$ – income inequality measured by the Gini coefficient
X_{ij} – vector of other subjective, individual variables
e_{ijt} – represents the error

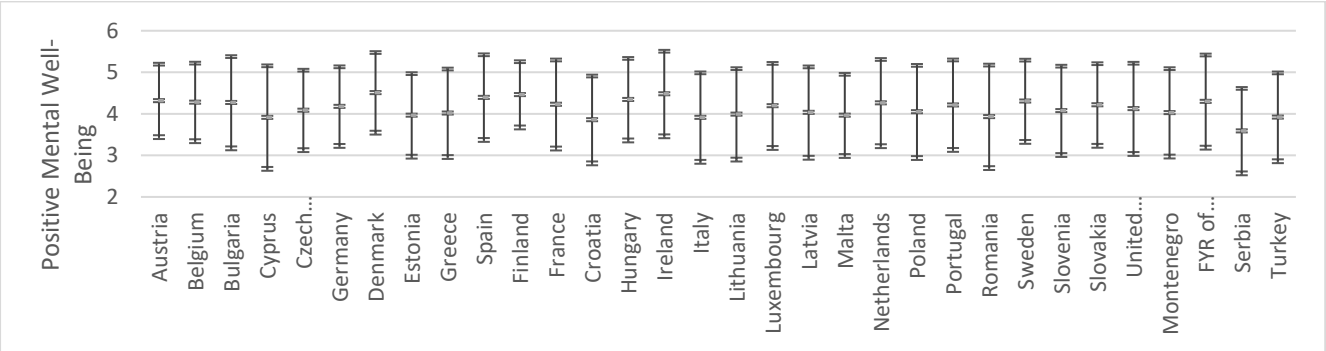
The statistical test above is based on the premise that there is a linear relationship between (1) each independent variable and the dependant variable and (2) the composite of the independent variables and the dependent variable (Laerd Statistics, 2015).

2.4. RESULTS AND DISCUSSION

2.4. 1 Descriptive Findings

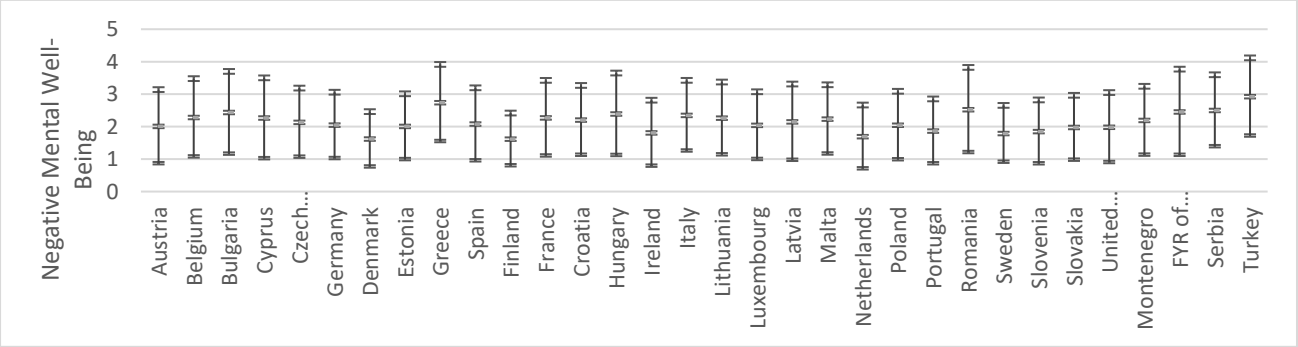
In the EQLS questions on mental well-being, respondents were asked five questions to rate their positive mental well-being on a scale of 1 to 6. The SPSS software was used to reverse the values; therefore, the higher the values, the better mental health. Figure 7 shows a graph of European people's positive affect index values, including means and standard deviations. The highest scores were in Ireland, 4.51 and Denmark, 4.48, and the lowest were in Serbia, 3.5 and Croatia, 3.8. Helliwell (2017) identified mental health as a significant component in determining life satisfaction.

Figure 7 Positive well-being index distribution in Europe, country level means and standard deviations, Source: author, based on data from EQLS 2016



In the EQLS questions on mental well-being, respondents were asked three questions to assess their subjective unhappiness on a scale of 1 to 6. The original values were also reversed, and therefore, the higher the values, the worse mental health. Figure 8 represents the negative affect index values among European people, including means and standard deviations. The highest scores were in Turkey 2.9, Greece 2.7 and the lowest values were in Finland 1.6 and Denmark 1.6.

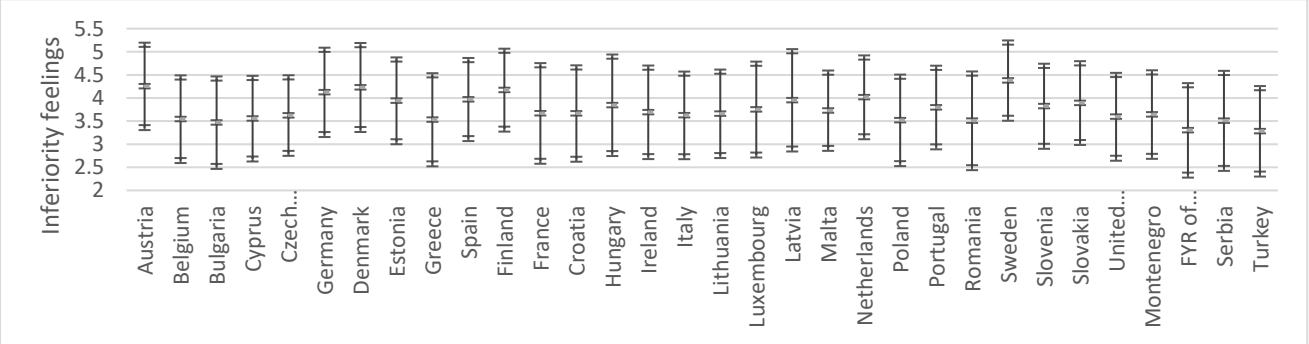
Figure 8 Negative well-being index distribution in Europe, country level means and standard deviations, Source: author, based on data from EQLS 2016



The EQLS 2016 also included two items to gather opinions on how respondents felt about their relationship with society. Figure 9 represents an inferiority index consisting of two items, as suggested by Delhey and Dragolov (2013). Respondents were asked (1) if they felt left out of society and (2) that others did not recognise the value of what they did. Responses to both questions were measured on a 5-point scale from (1) strongly agree to (5) strongly disagree. The findings for the first item indicated that 19.8 per cent of Europeans felt that others did not recognise the value of what they did ('strongly agree' and 'agree'). A further 19.6 per cent were undecided ('neither agree nor disagree'). The findings for the second item indicated that 14.4 per cent reported that some people looked down on them because of their job or income

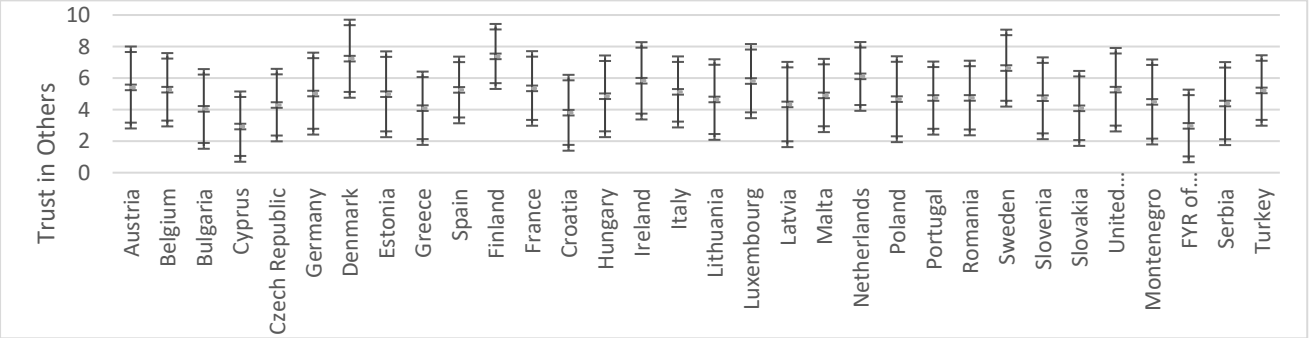
('strongly agree' and 'agree'-), and another 13.8 per cent reported the 'neither agree nor disagree' category. The high values in Figure 9 represent low anxiety and low values high anxiety. The data showed that the lowest status anxiety was in Sweden 4.3, Austria 4.2 and the most elevated anxiety was in Turkey 3.2 and Macedonia 3.3.

Figure 9 Inferiority feelings index distribution in Europe, country level means and standard deviations Source: author, based on data from EQLS 2016



The EQLS provided data to compare trust levels among European people, represented by Figure 10 below. Responses were measured on a 10-point scale from (1) you can't be too careful to (10) most people can be trusted. Finland 7.4 and Denmark 7.2 are the top two trusting countries, and Cyprus, 2.9 and Macedonia 3.0 are the least trustful.

Figure 10 Trust in others distribution in Europe, country level means and standard deviations, Source: author, based on data from EQLS 2016



Figures 11 and 12 represent the downward and upward sloping regressions. The data suggest a negative association between income inequality and positive mental well-being and a positive association between income inequality and negative mental well-being. More equal societies tend to have people who experience better mental well-being; these findings align with Wilkinson and Picket (2010). The countries correlation coefficients for the positive affect index are r (32) = - 0.34, p <.01 for the positive affect index and r (32) = 0.49, p <.01 for the negative one. The Person

coefficient value for the positive affect index is lower than the correlation of - 0.74 suggested by Picket et al. (2006) and of - 0.66 suggested by Layte (2012).

Figure 11 Income inequality (GINI) and positive mental well-being in 32 European countries, Source: author, based on data from EQLS 2016

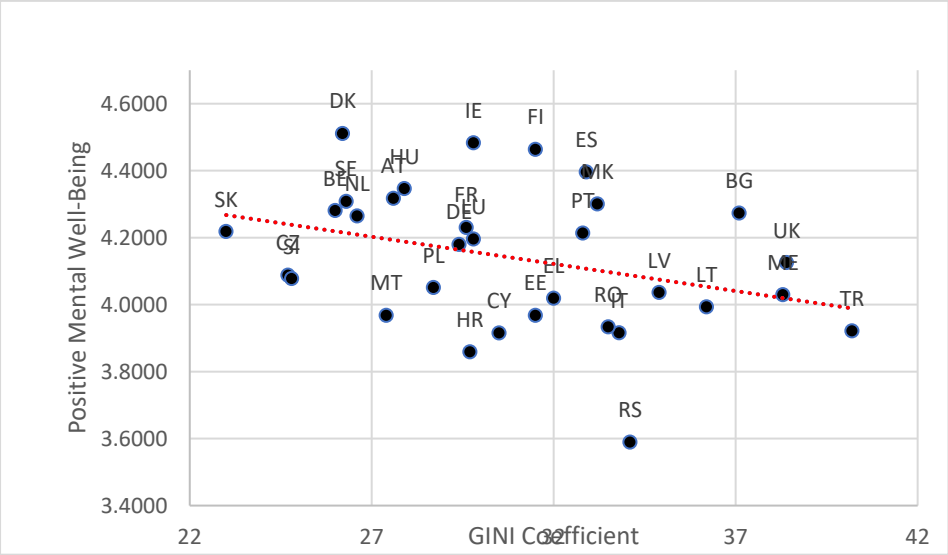
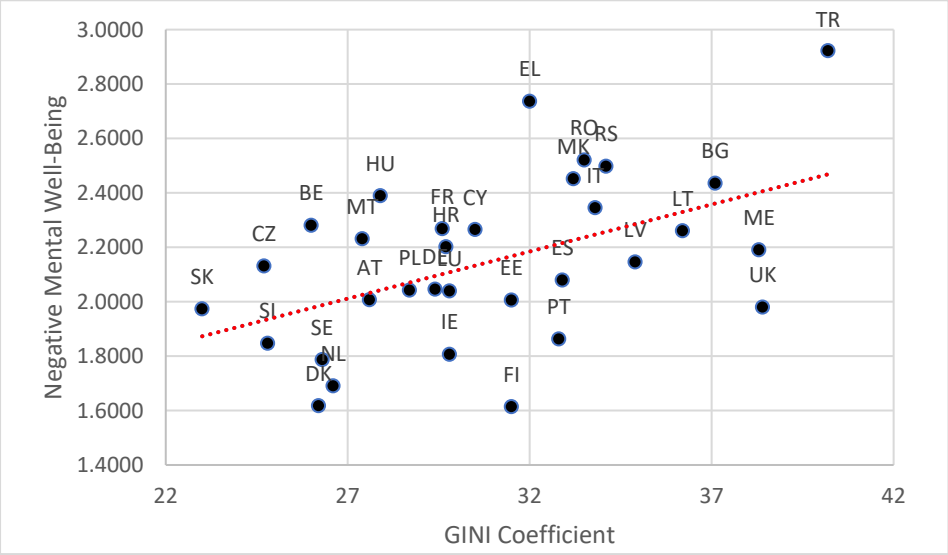
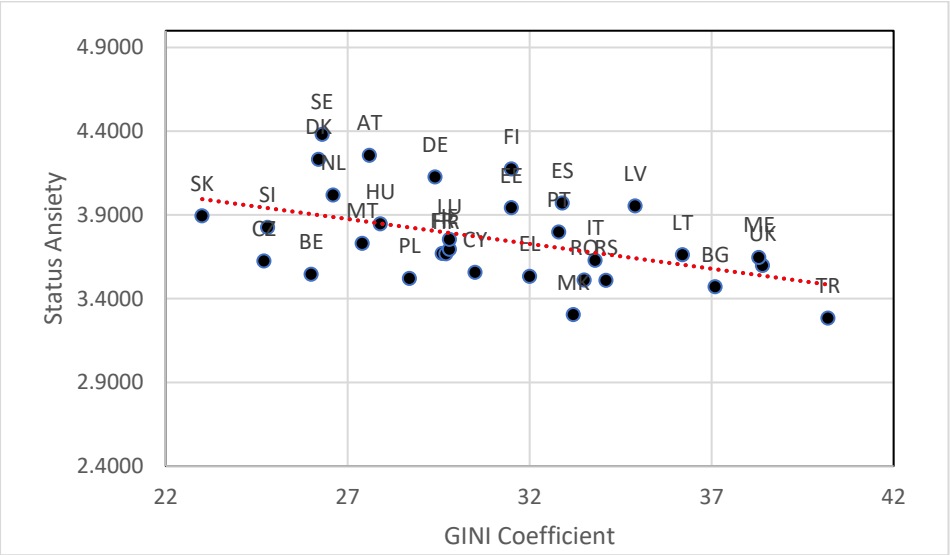


Figure 12 Income inequality (GINI) and negative mental well-being in 32 European countries, Source: author, based on data from EQLS 2016



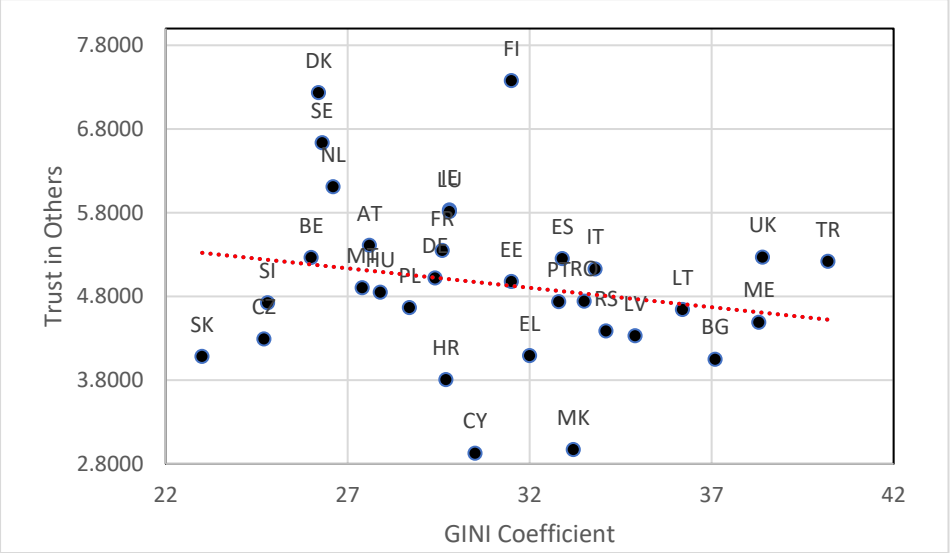
Figures 13 represents a scatter diagram of income inequality and status anxiety. The downward sloping line suggests a negative relationship. Respondents from nations with low inequality expressed less concern about their status than those with high inequality.

Figure 13 Income inequality (GINI) and status anxiety in 32 European countries, Source: author, based on data from EQLS 2016



Finally, figure 14 below represents a scatter diagram of income inequality and trust in others. The result is consistent with the evidence that the degree of economic inequality among advanced economies is a strong predictor of social trust levels (Gould and Hijzen, 2016, Putnam, 2020)

Figure 14 Income inequality (GINI) and trust in others in 32 European countries, Source: author, based on data from EQLS 2016



Interclass Correlation Coefficient

Table 9 Estimated of Covariance Parameters

Estimates of Covariance Parameters[a]

Parameter		Estimate	Std. Error	Wald Z	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Residual		1.080182	.008217	131.455	.000	1.064196	1.096408
Intercept [subject = Y16_Country]	Variance	.043117	.011397	3.783	<.001	.025684	.072384

a. Dependent Variable: POSWELLINDEX.

Within and between-group variances are estimated in the estimate column, table 9. For example, the variance within group (q_w^2) in mental well-being was 1.080182, and the variance between group (q_b^2) was 0.043117.

The typical first step in model determination is the identification of data clustering concerning the dependant variable (Heck et al., 2012). To find the evidence of clustered observations within level 2 units, the interclass correlation coefficient (ICC) is calculated using a formula below.

$$ICC = \frac{q_b^2}{q_b^2 + q_w^2} \qquad (3)$$

(q_w^2) represent Level 1 variance estimate.
(q_b^2) represents Level 2 variance estimate

ICC = 0.04. The ICC suggest that 4% of the variance in mental wellbeing occurs between countries; therefore, there is no evidence of substantial clustering. According to Heck et al. (2014), a cut-off' point to provide evidence of substantial clustering is .05. The ICC of .04 (ICC's <0.05) suggests no evidence of substantial clustering in data; therefore, the multiple linear regression is applied without any substantial effects on inferences.

2.4.2 Multiple Regression Models of Subjective Wellbeing Measured by the Positive and Negative Affect Indicators

Four models of multiple regression were run to predict mental wellbeing from gender, age, status. Durbin-Watson value of 1.910 indicated that residuals were independent. There was no evidence of multicollinearity; all tolerance values were greater than 0.1. Q-Q Plot showed that the assumption of normalcy was met. All eight multiple regression models statistically significantly predicted positive and negative mental wellbeing. F (12, 36373) = 814.476, p < .001, adj. R2 = .21. Except for the income quartile 3, all variables added statistically significantly to the prediction, p < .05. Regression coefficients and t-statistics can be found in Tables 2 and 3 below.

Table 10 Coefficients and t-statistics for multiple linear regression models of positive mental wellbeing, EQLS 2016

	Multiple Regression							
	Model 1 Base		Model 2 Status Anxiety		Model 3 Social Capital		Model 4 Social Infrastructure	
	Est.	*t*-stat	Est.	*t*-stat	Est.	*t*-stat	Est.	*t*-stat
Female	-0.115	-10.262***	-0.066	-6.007***	-0.085	-7.713***	-0.117	-10.411***
Age	-0.002	-4.862***	-0.004	-8.520***	-0.003	-6.784***	-0.003	-5.933***
Chronic Health Problems	0.534	40.645***	0.490	38.581***	0.464	36.028***	0.539	41.061***
ISCED categories	0.045	13.813***	0.023	7.365***	0.012	3.812***	0.041	12.650***
Unemployed	-0.062	-2.698***	-0.002	-0.102	0.087	3.843***	-0.065	-2.818***
Unable to work	-0.428	-10.224***	-0.335	-8.287***	-0.286	-6.875***	-0.423	-10.125***
Retired	0.114	6.040***	0.123	6.770***	0.096	5.234***	0.125	6.666***
Full-time homemaker	-0.085	-3.660***	-0.047	-2.120**	-0.087	-3.812***	-0.064	-2.760***
Student	0.176	6.106***	0.113	4.071***	0.102	3.606***	0.168	5.819***
Income quartile 1	-0.193	-10.648***	-0.125	-7.092***	-0.031	-1.710*	-0.199	-10.981***
Income quartile 2	-0.086	-4.813***	-0.058	-3.378***	-0.014	-0.805	-0.091	-5.120***
Income quartile 3	0.018	1.005	0.014	0.838	0.005	0.276	0.014	0.813
Income quartile 4	0.054	3.042***	0.047	2.714***	-0.023	-1.346	0.053	2.998***
Log GDP	0.443	12.837***	0.254	7.340***	-0.120	-3.267***	0.388	9.997***
Gini	-0.014	-10.567***	-0.005	-3.282***	-0.014	-10.816***	-0.010	-6.427***
Status Anxiety			-0.216	-37.235***				
Feeling safe after dark			-0.164	-28.622***				

Homicide Rate per 100,000			-0.009	-1.867*				
Trust in people					0.034	10.999***		
Trust in institutions					0.032	-18.723***		
Support if feeling depressed					-0.132	-40.131***		
Making ends meet					-0.194	10.999***		
Medical doctors (per 10,000)							0.005	7.207***
Public expenditure on health %GDP							0.006	1.189
Government expenditure on education, total (% of GDP)							0.032	7.577***
Government spending on social protection (% of GDP)							-0.008	-4.618***
(Constant)	1.812	9.874***	3.312	18.275***	5.086	26.262***	1.728	9.116***
Observations		33475		33475		33475		33475
R-squared		0.110		0.175		0.186		0.114

Note: Dependent variable – Positive mental wellbeing. *** p < 0.01, ** p < 0.05, * p < 0.1

Table 11 Coefficients and t-statistics for multiple linear regression models of negative mental wellbeing, EQLS 2016

	Multiple Regression							
	Model 1 Base		Model 2 Status Anxiety		Model 3 Social Capital		Model 4 Social Infrastructure	
	Est.	*t*-stat	Est.	*t*-stat	Est.	*t*-stat	Est.	*t*-stat
Female	0.113	9.207***	0.064	5.531***	0.087	7.190***	0.109	8.980***
Age	-0.003	-5.133***	0.000	-0.221***	-0.002	-3.622***	-0.002	-3.468
Chronic Health Problems	-0.375	-26.305***	-0.311	-23.324***	-0.304	-21.508***	-0.392	-27.675***
ISCED categories	-0.061	-17.253***	-0.027	-8.106***	-0.032	-8.960***	-0.052	-14.917***
Unemployed	0.176	7.035***	0.068	2.926***	0.024	0.962	0.174	7.020***
Unable to work	0.471	10.368***	0.323	7.632***	0.336	7.335***	0.474	10.503***
Retired	-0.035	-1.721***	-0.042	-2.203**	-0.019	-0.921	-0.055	-2.707***
Full-time homemaker	0.085	3.378***	0.029	1.241	0.083	3.309***	0.054	2.172***
Student	-0.139	-4.422***	-0.037	-1.267	-0.073	-2.341**	-0.113	-3.632***
Income quartile 1	0.281	14.268***	0.176	9.574***	0.127	6.322***	0.301	15.345***

Income quartile 2	0.132	6.815***	0.092	5.088***	0.058	3.000**	0.150	7.806***
Income quartile 3	0.028	1.439	0.034	1.899***	0.036	1.876*	0.041	2.148**
Income quartile 4	0.055	2.848***	0.072	3.993***	0.122	6.393***	0.062	3.248***
Log GDP	-0.661	-17.654***	-0.438	-12.078***	-0.192	-4.775***	-0.483	-11.537***
Gini	0.029	19.521***	0.018	12.143***	0.028	19.385***	0.017	10.217***
Status Anxiety			0.366	60.150***				
Feeling safe after dark			0.177	29.391***				
Homicide Rate per 100,000			-0.014	-2.711***				
Trust in people					-0.021	-7.875***		
Trust in institutions					-0.029	-9.002***		
Support if feeling depressed					0.172	22.227***		
Making ends meet					0.188	35.353***		
Medical doctors (per 10,000)							-5.081	-5.081***
Public expenditure on health %GDP							-0.043	-7.986***
Government expenditure on education, total (% of GDP)							-0.087	-19.227***
Government spending on social protection (% of GDP)							0.023	12.023***
(Constant)	5.006	25.121***	2.925	15.396***	2.069	9.720***	4.967	24.298***
Observations		33475		33475		33475		33475
R-squared		0.097		0.219		0.158		0.111

Note: Dependent variable – Negative mental wellbeing. *** p < 0.01, ** p < 0.05, * p < 0.1

Tables 11 and 12 represent the coefficients and t-statistics for the four subjective well-being models measured by the positive and negative affect indicators. Model 1, the base model, controls for the distribution of gender, chronic health problems, employment status, education, and the effects of GDP per capita and income inequality measured by a GINI coefficient. This base model supports the finding for individual mental well-being. The income inequality is negatively associated ($p<0.01$) with the subjective well-being measured by the positive and negative affect indicators. This finding is consistent with the relative deprivation hypothesis (Eibner and Evans 2005; Ferrer-i-Carbonell and Frijtes 2004; Luttmer. 2005). However, living in a high GDP per capita country has a positive effect ($p<0.01$) on mental well-being.

Mental well-being improves as self-assessed health improves ($p<0.01$), similar findings have been found for life satisfaction (Statistik Austria, 2013). Furthermore, mental well-being also improves when a higher level of education is completed ($p<0.01$), a person is a male, student or retired. The finding is consistent with reported results for Europe (McNamara et al., 2017). Using education to indicate socioeconomic status, they suggested that people with lower education are more likely to get specific ailments, including depression than those with higher education. The data also show that there is a particularly negative association among women. The result is similar to Bambra and Eikemo (2008), who argued that it was likely to be because women's replacement rates were lower than average. Although, women appear to be more suffering from depression than males, Hunt et al. (2010) suggested that men tend to under report depression and anxiety more than women.

Model 2, the status anxiety model, also controls the status anxiety, feeling safe after dark and homicide rates. When status anxiety was included, the effect of income inequality on mental wellbeing is still significant ($p<0.01$), but the t-statistic has been reduced by (-71%). Mental health also improves when people feel safe after dark ($p<0.01$). However, homicide rates are not significant.

Model 3, the social capital model, also controls for the trust in people, trust in institutions, attending a protest, support if feeling depressed and making ends meet. Again, the income inequality effects on mental wellbeing are mediated by the higher levels of trust, although the indirect effect is not as strong as for the status anxiety. Having trust in institutions, having support if feeling depressed and making ends meet are very important for mental wellbeing ($p<0.01$). Attending protest variables is not significant for mental wellbeing.

Finally, the social infrastructure model 4 controls for the number of medical doctors, government expenditure on health, education, and social infrastructure. All variables positively affect mental wellbeing, except expenditure on health; that variable is not significant. The finding is consistent with several studies suggesting that state-level protection can improve health, especially mental health (Hummelsheim et al., 2011; De Witte et al., 2015; Vásquez-Vera et al., 2017), and therefore, effective policies need to be in place to support people especially in challenging times.

2.5. CONCLUSION AND POLICY IMPLICATION

The primary purpose of this article was to examine how income inequality contributes to mental well-being in Europe, based on the data from the 2016 European Quality of Life Survey. Even after controlling for personal level indicators, the multiple regression confirms that citizens who live in countries with high inequality tend to report worse mental well-being measured by positive and negative affect indicators. These findings are consistent with the relative deprivation theory; lower economic inequality is essential for mental well-being. Moreover, the GDP per capita has a significant effect on subjective well-being.

The analysis further explored the sensitivity of other variables. The findings suggest that mental well-being also improves when a higher level of education is completed, a person is a male, student, retired or with no chronic health problems. Policy implications are that social policies should focus on women and the unemployed as they tend to be more sensitive to income inequality. Oshio and Urakawa (2014) noted that inequality means limited opportunities to improve one's position within a social environment; therefore, individuals with low-income status tend to be less satisfied by economic inequality. Bambra and Eikemo (2008) further pointed out that the link between bad health and unemployment is evident in women. They argue that inconsistent work records, such as part-time work and caring responsibilities, are why women must rely on lower-level social assistance and lower replacement rates.

This study also shows that the status anxiety, social capital and neo-material hypotheses are effective in explaining the impact of income disparity. In addition, overall health and having someone to talk to are essential determinants of mental well-being for European people. When taken together, this article's findings suggest that, while income inequality is an essential factor of people's well-being, boosting social capital, reducing social anxiety, and the welfare state are equally critical.

There is certainly no simple solution to tackle the problem of mental health in Europe. The government policies need to focus on both the macro and micro levels. At the Macro level, given evidence that the degree of economic inequality within advanced economies is a significant predictor of mental health (Layte, 2012), addressing the unequal income distribution may also improve overall physical and mental health. Given the vast range of policy implications, demonstrating causality is critical. If the association is causative, government policies could be the answer to reduce economic

inequality, such as raising the minimum wage, making taxes more progressive, or bolstering public income assistance for the poor. Furthermore, income maintenance,

At the micro-level, the policies should create opportunities for people to seek mental health support. In many countries getting mental health support can be challenging. A large proportion of people need help for their mental health; however, this need is ultimately hindered not by their inability to seek help but by the inability to access it.

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Appendix A: Life expectancy at birth by deprivation England, 2009-13

Figure 15 Life expectancy at birth by neighbourhood deprivation percentiles, 2009–13, England, Males, Source: Marmot (2020)

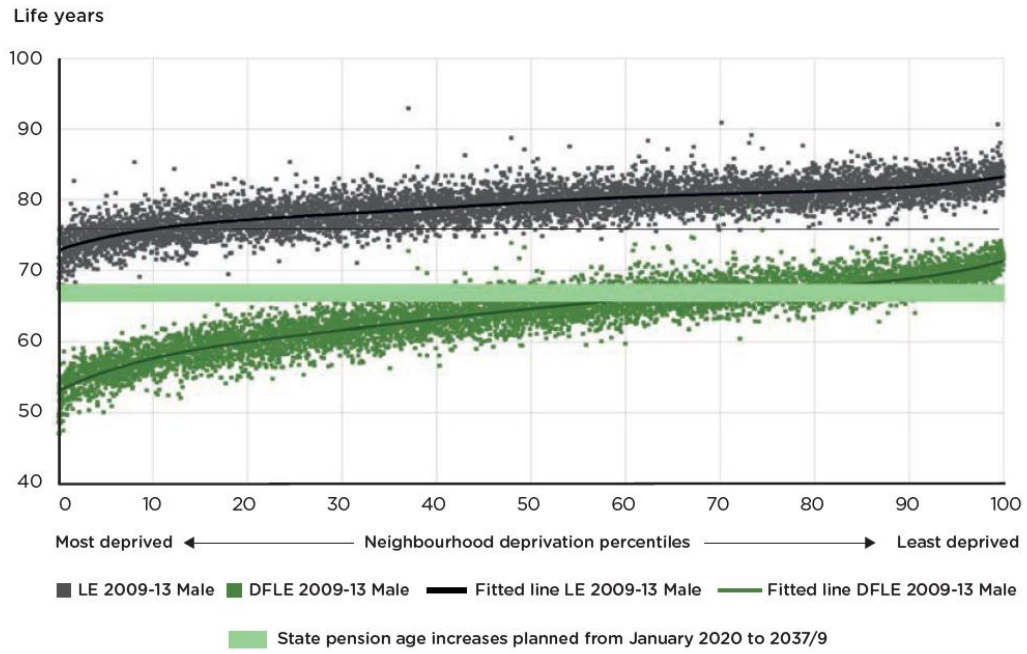
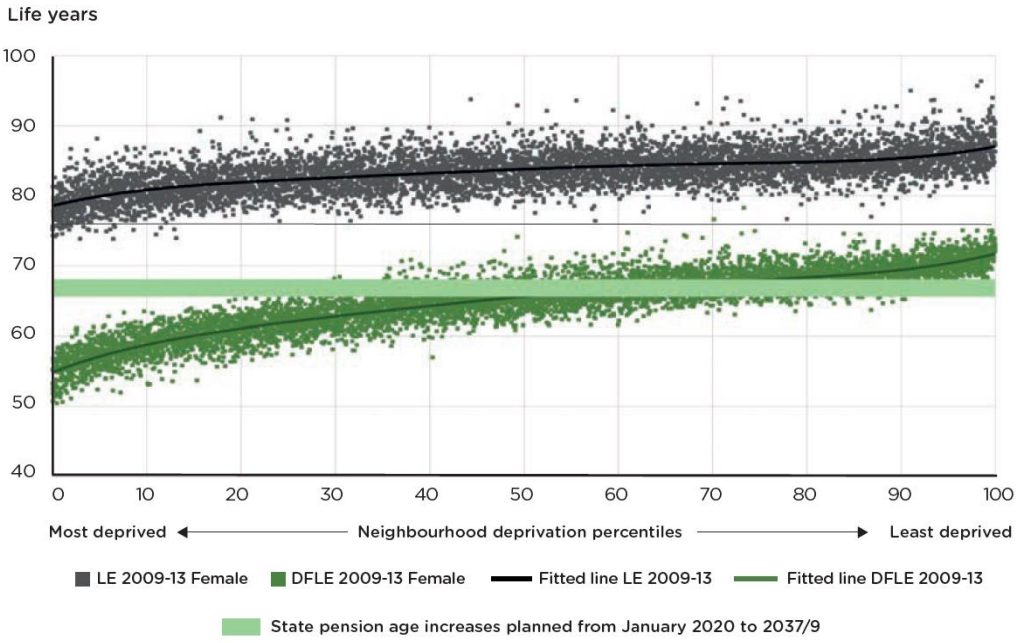


Figure 16 Life expectancy at birth by neighbourhood deprivation percentiles, 2009–13, England, Females, Source: Marmot (2020)

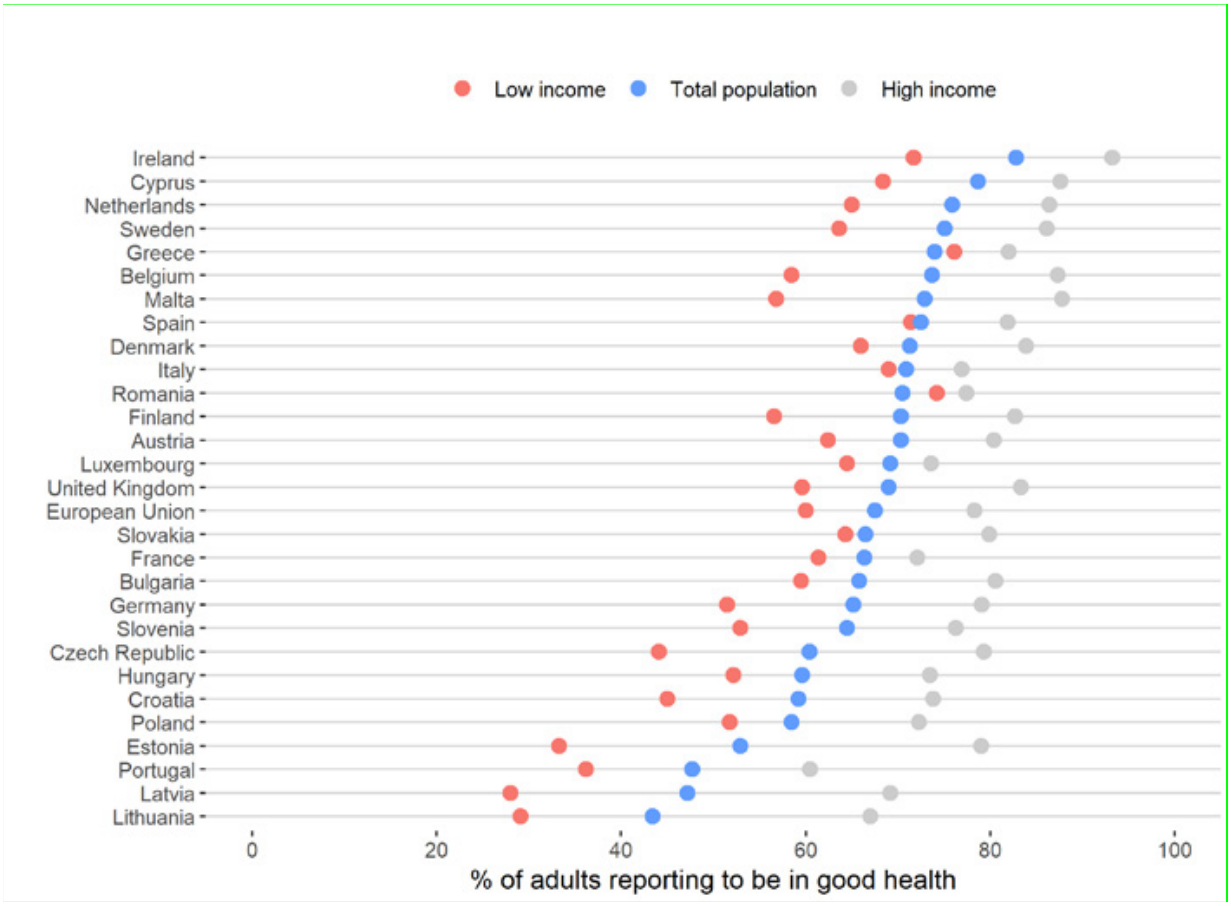


Source: Office for National Statistics (ONS) and Department for Work and Pensions (Marmot et al. 2020)

Note: Life expectancy (LE) or disability-free life expectancy (DFLE) of a neighbourhood

Appendix B: Health Inequalities in a European Context

Figure 17 ***Health Inequalities in a European Context, based on Eurostat, 2018 Source: Forster et al. (2018)***



Article 3: Income Inequality, Social Capital, and Nonviolent Protests

ABSTRACT

Objective: The purpose of this article is to investigate the impact of a country's level of economic inequality on protest engagement among European countries. *Methods:* Using hierarchal binomial logistics and utilising data from the European Quality of Life Survey, this article examines the link between income inequality and engagement in a political protest. *Results:* European people in the lowest income quartile are less likely to protest when the economic inequality increases. Social capital, measured by trust, is also a significant determinant of political engagement. *Conclusion*: The findings contradict the grievance theory, which links relative deprivation to protest action. Moreover, they reinforce the relative power theory; greater economic inequality exacerbates political inequality.

Keywords

Nonviolent protest, political inequality, social capital, income inequality

3.1 INTRODUCTION

Since the 1970s, economic inequality has risen steadily in most affluent democracies (Alvaredo et al., 2017; Franzini et al., 2016; Piketty, 2014; Piketty and Saez 2014; Alderson and Nielsen, 2002). Furthermore, in any society, citizens are unequal in many other ways. However, even in the presence of these economic and social inequalities, democracy is usually thought to imply a high level of political equality (Gilens,2012). A key characteristic of democracy, according to Dahl (1971: 2), 'is the continuing responsiveness of the government to the preferences of its citizens, considered as political equals.' In every democracy, the citizens with more resources tend to hold more power to mould government policies to their favour (Solt, 2008, Giles, 2012). Therefore, with the increasing income inequality in European societies, this ideal of political equality is perhaps impossible to ultimately realise. However, the degree of political inequality in a society and the socioeconomic conditions investigated in this article reveal a lot about democracy in European societies.

Recent political economic research suggests that the distribution of resources, rather than individual resources, determines political engagement (Solt, 2015). Regarding the impact of growing economic inequality on political engagement, the literature has offered reasons for both a negative and a positive link. The proponents of grievances theory argue that when inequality between the affluent and the poor widens, the latter will be driven to utilise their political power (Shapiro, 2002) while the affluent should engage to prevent that. The stakes are incredibly high in unequal economies (Brady, 2004), and therefore, it is rational to participate (Meltzer and Richard, 1981). However, relative power theory proponents believe that in societies with high economic inequality, the rich have tools to translate their wealth into a political voice. The poor give up on participation as they learn through experience that the system makes them feel powerless. Similarly, the proponents of resource theory believe that income inequality increases the participation of the relatively affluent but because of resources rather than power (Solt, 2015).

Even though all three theoretical arguments appear plausible, the recent empirical findings point to inequality having a lowering effect on political involvement (Solt, 2015). Utilising data from the European Quality of Life Survey, this study explores whether and how inequality in Europe contributes to variance in people's propensity to engage in a nonviolent political protest. The findings of this article contribute

significantly to the understanding of both peaceful protest participation and political efficacy. The first contribution of this paper is to compare the participation in peaceful protests across different countries. The second is to investigate the relationship between income inequality and peaceful protests. Finally, it is to make recommendations on suitable public policy. Specifically, this paper is an attempt to answer the following questions:

RQ1 – To what extent do grievances exacerbated by income inequality motivate poor people to engage in a protest? The relationship between grievances and their impact on protest behaviour has been debated for a long time (Gurr, 1970; Opp, 2009).

RQ2 – To what extent does the unequal distribution of resources motivate affluent and poorer people to protest? Brady et al. (1995) concluded that socioeconomic position has traditionally been a strong predictor of protest participation and that resources significantly impact overall political engagement.

RQ3 – To what extent does inequality discourage all but the most affluent people from engaging in different forms of protest? Several empirical studies investigate the association between the political landscape, caused by economic inequality, and protest participation; however, the results are inconclusive (Solt, 2008, 2015)

The rest of this paper is laid out as follows. First, the existing literature on peaceful protests and income inequality is discussed in Section 2 to position the current proposed study. Second, the proposed research design and other methodological concerns relevant to the current study are discussed in Section 3. Third, the empirical results, including the results of the binomial logistic regression, are reported in section 4. Finally, section 5 discusses the conclusions and the policy implication.

3.2 LITERATURE REVIEW

This article is based on recent research which suggests that resources and their distribution influence political engagement. Economic inequality has been steadily increasing in most affluent democracies (Alvaredo et al., 2017; Franzini et al., 2016; Piketty, 2014; Alderson and Nielsen, 2002). However, the implications of increased economic disparity for protest participation have primarily gone unexplored in empirical research. So ultimately, the purpose of this study is to test that premise of political equality in contemporary European democracies to see how citizens politically engage, especially in a protest.

Lipsky (1968: 1145) defines a protest activity as ’a mode of political action oriented toward objection to one or more policies or conditions, characterized by showmanship or display of an unconventional nature, and undertaken to obtain rewards from political or economic systems while working within the system'. Moreover, Turner (1969: 816) suggests that ‘an act of protest includes the following elements: the action expresses a grievance, a conviction of wrong or injustice; the protestors are unable to correct the condition directly by their efforts; the action is intended to draw attention to the grievances; the action is further meant to provoke ameliorative steps by some target group, and the protestors depend upon some combination of sympathy and fear to move the target group in their behalf’. Both definitions suggest that protest is a type of behaviour or action. Protest is viewed as a collective action by many social movement experts. Furthermore, definition 1 relates to the unconventional aspect of protest activity, whereas definition 2 refers to one-off activities that lack consistency. Without institutional standards requiring activity to be repeated over time, it is considered unconventional. In contrast to demonstrations or road blockades, attending a political meeting or election are considered conventional (Opp, 2009).

One of the many definitions of social movements is ‘a set of opinions and beliefs in a population which represents preferences for changing some elements of the social structure and/or reward distribution of a society’ (McCarthy and Zald 1977: 1217). In addition, Zaid and Ash (1966: 329) define a social movement as: ‘a purposive and collective attempt of a number of people to change individuals or societal institutions and structures.’ Such social movements frequently engage in activities such as attending meetings of a political party, signing a petition, contacting a politician, boycotting certain products (institutionalized) and activities such as attending a protest or demonstration (non-institutionalized) (Opp, 2009).

Scholars of social movements used to argue that movements were illogical, non-political activities. Le Bon (1895), a founding father of collective action studies, saw all street protests as a sort of aberrant behaviour. Milbrath and Goel (1977) used the established political science categorization system, labelling social movements as 'unusual political activity'. Most political scholars today place a greater emphasis on the rational aspect of social movements, and their view on social movement

participants has changed. The relative power, grievances and resources mobilization are the three primary participant theories of protest.

Relative Power Theory

The research in political participation has been mainly motivated by the assumption that political engagement can also translate into political power. Therefore, active political engagement by groups or individuals can translate into more effective political influence. Many scholars investigated the implications of increased economic disparity on political (Solt, 2008, Schafer, 2019) and protest (Solt, 2015) participation. Solt (2008) argued that economic inequality is a crucial factor influencing socioeconomic status and political activity. The proponents of grievance theory identified increasing income inequality to be encouraging the poor to utilize their political power (Shapiro, 2002). However, there is strong evidence suggesting the opposing notion that the poor feel discouraged to engage as the system is set up against them.

Offe (2013) believed that austerity measures increased the propensity for democracies to exclude the poorest from political participation. Furthermore, Solt (2008) described capitalist democracies as systems where wealth can be easily translated into a political voice. These arguments support the relative power theory. High levels of income inequality indicate to poorer citizens that their complaints are likely to be ignored.

In contrast, wealth and strong ties to the economic elite allow the rich to win the battle over economic redistribution. The affluent have a vested interest, and they fight hard to win these arguments. Arguably, they know how to have their voices heard, through donation, lobbying, contacting the decision-makers, and influencing who can talk and how loudly. Over time, the wealthy gain even more power, and the poor stop caring enough to get involved. Contrary, people in egalitarian societies are more likely to participate as the chance of having an influence are evenly divided (Schafer, 2019)

Grievance Theory

Unlike the relative power theory, the grievances (deprivation) theory suggests that economic inequality leads to more political engagement. This theory is a competing explanation to the relative power theory, where the poor are interested in government policies that result in the pie being shared more fairly. The redistribution policy's acceptance of the rich is limited; the high economic inequality bothers the poor and mobilizes them to protest (Solt, 2015).

Runciman (1966) made an essential conceptual distinction between egoistic and fraternal relative deprivation. When people feel unfairly disadvantaged in comparison to others, they experience egoistic relative deprivation. However, when members of a social category believe their group (socioeconomic class, racial, gender group) is denied fair treatment, they experience fraternal relative deprivation. This distinction inspired many studies, arguing that egoistic and fraternal relative deprivation may have different psychological effects. For example, Smith and Ortiz (2001) argued that fraternal relative deprivation generates protests and rebellion but not stress. In contrast, egoistic relative deprivation tends to generate dissatisfaction but not engagement in protests.

Stoufer et al. (1949), in their classic study, concluded that soldiers' job satisfaction was inversely connected with their promotion prospects. They argued that satisfaction is determined by how well reality fits a person's expectations, especially when quality standards are absent. Thus, social comparison appears to be an essential factor determining expectations (Walker and Pettigrew, 1984). Furthermore, Runciman (1966) provided evidence that relative deprivation and class consciousness experienced by workers were not absolute but relative.

More recently, relative deprivation models have been used to examine different types of political behaviour, including as election turnout (Clark et al, 2004), protest propensity (Sanders et al, 2004), and historical protest behaviour (Dalton, van Sickle and Weldon, 2009), with the theory's lack of explanatory usefulness being typically verified

Resource Mobilization Theory

In the study of social movements, resource mobilization theory asserts that the success of social movements is dependent on resources. When trying to change the political system, the masses face significant obstacles due to a lack of resources and political influence. Outside social movements' influences are needed to succeed, including money, people, and societal resources (Jenkins and Form 2003). If a group of elites backs a movement, it is unlikely to pose a considerate challenge to the political system (McAdam 1982).

Solt (2008) suggested that resources matter for political participation similarly to grievance theory and relative power theory. However, Solt (2008) described economic inequality as a mechanism that distributes resources needed for political engagement to benefit the rich. Protesting is a demanding activity, and people with higher incomes are better able to afford the costs connected with it (Verba, Schlozman, and Brady, 1995). Therefore, as economic disparity rises within a society, relatively poor people will have fewer resources, and relatively wealthy individuals will have more, reducing political involvement among the poor while increasing it among the wealthy (Solt, 2015).

It is the grievance theory only considers economic inequality as an issue that sparks protest participation. According to relative power theory, issues that more affluent people do not favourite will be more likely excluded from the political agenda as inequality rises. Thus, regardless of poorer people's views, discouraging poorer people from engaging in any form of political participation, including protests. Similarly, resource theory is concerned with whether individuals have the financial means to speak out on any issue they choose (Solt, 2015).

Empirical evidence

Norris (2002) argued that during the 1980s, several types of protest politics, such as petitions, marches, and consumer boycotts, became increasingly popular in many nations. In her conclusion, she suggested that protest politics was not a transitory fad; instead, it gained popularity as a means of political expression and mobilization. Furthermore, she concluded that protest politics were particularly prevalent among the well-educated managerial and professional classes in post-industrial economies,

but it became increasingly "mainstream" in recent years. As a result, students and the younger generation were no longer the only ones protesting by the mid-1990s. Extensive research has focused on the relationship between economic inequality and political violence (Boix, 2008; Collier and Hoeffler, 2004). However, there has been little research on inequality and nonviolent protests.

Solt (2008) examined the relationship between national economic inequality and political participation. Moreover, he analysed 20 democracies and concluded that people who live in nations with substantial economic inequality are less likely to be engaged in politics, talk politics with friends, and vote. Moreover, he confirmed that his findings are aligned with relative power theory, which is a problem for democracy. Solt (2015) examined whether changes in inequality across 25 countries and across time help explain people's participation in peaceful protest. Using four waves from the European Social Survey, he discovered that people with earnings below the top quintile are less likely to participate in protests when there is more inequality. Similarly, as in his previous research, findings support the relative power theory of political engagement; grievance and resource theories were not supported.

In the cross-national study, using the European Social Survey, Dubrow et al. (2008) found that the European people in 2006 were more likely to protest in old democracies than the new. They also concluded that a higher economic inequality resulted in a lower proportion of political protests. The probability of protesting is also positively influenced by trust in parliament and social status.

The methodological limitations in the literature suggest that these outcomes cannot be considered conclusive. Each study considers a small sample size; between 11 to 25 different countries are analysed, given such a small number of observations, the instability in findings is unsurprising.

Political Engagement and Social Capital

According to Coleman (1988) and Putnam (2000), people who are more engaged in various associations, for example, sports clubs, are more likely to be involved in politics. Putnam (2000) first connected social capital with political influence due to his research into Italian communities, and he proposed that social capital in American

communities was associated with a decrease in political involvement. Membership in societies develops a feeling of the community, which according to Durkheim (1984), contributes to the community's ability to solve issues collectively. Miller (2009) identified the relationship between political engagement and social capital to be crucial to democracy. Further research demonstrated how social connection (Knoke 1994), neighbourhood association (Huckfeldt and Sprague 1995), and sense of belonging (Conover 1984; Miller et al. 1981) could impact beliefs, political views, and political engagement. Timpone (1998: 151) proved that 'social connectedness,' defined as anything from a state region to local neighbourhood relationships, influences forms of political involvement.

Alcorta et al. (2020) investigated data on 40,455 individuals living in 27 African countries. They concluded political violence was inversely connected with trust and national identity, while it was positively associated with religious and community associational participation. Walker (2008) indicated that the character of the association to which an individual belongs are essential factors in influencing political involvement. He argued that associations are critical for political engagement because they encourage political conversation (Eliasoph 1998), recognition of shared interests (Fung 2003) and mental involvement in politics (Verba et al., 1995). McFarland and Thomas (2006) utilised two longitudinal national datasets to determine the types of volunteer groups that promote members to become more politically involved later in life. They concluded that engagement in extracurricular activities was essential. Still, participating in voluntary youth groups, including community work, public debates, and developing a collective identity, encourages future political involvement.

According to this literature review, we can formulate the following three hypotheses.

H1 = There is a significant prediction of the attending demonstration activity by income inequality, controlling for the social capital and age of democracy.
H2 = There is a significant prediction of the signing a petition activity by income inequality, controlling for the social capital and age of democracy.
H3 = There is a significant prediction of the boycotting a product activity by income inequality, controlling for the social capital and age of democracy.

Empirical evidence of the relationship between the income inequality and protest activity remains inconclusive. This review of literature highlights the existing social capital, status anxiety and neo-material theories on that relationship. Moreover, the relationship between adverse changes in social capital and protests in Europe are discussed. Considering this literature review, only limited attention has been paid to investigating the relationship between income inequality, social capital and protests. Although some evidence points to inequality having a lowering effect on political participation. The following section outlines the research design and measures selected for this study

3.3 DATA AND METHODS

This section looks at the data that will be examined in the analysis and explains the methods that will be used to test the hypothesis provided in the previous section.

3.3. 1 Data and Countries

The data utilised for this study is from the European Quality of Life Survey's fourth round. Around 37,000 individuals were interviewed for the EQLS 2016 in 33 countries (28 EU Member States and five candidate countries).

One of the most prevalent methods for dealing with missing data is listwise deletion (Peugh and Enders, 2004). The critical assumption for this strategy is that the data is missing completely at random (MCAR). The missing values for each level 1 variable are less than 5%, hence they can be deemed MCAR (Rubin, 1976); listwise deletion is applied. There are no missing values for level 2 variables.

Self-reported Indicators

Political Involvement

Beyond voting in an election, active citizenship involves other forms of political participation. The six forms covered by EQLS (2016) are attending a meeting of a trade union, a political party, demonstrations, signing petitions, contacting politicians, commenting on political or social issues online and boycotting products. The SPSS software was used to reverse the dependent variables with two outcomes, so 1 indicates engagement and 0 no engagement. The following are questions covered by the EQLS (2016) questionnaire.

Over the last 12 months, have you done any of the following activities?
Attended a meeting of a trade union, a political party or political action group
Attended a protest or demonstration
Signed a petition, including an e-mail or on-line petition
Contacted a politician or public official (other than routine contact arising from use of public services)
Commented on a political or social issue online
Boycotted certain products

0_____1

No Yes

Trust in People

Trust in a wide spectrum of people is commonly regarded as a resource that acts as a social glue and promotes collaboration (Phillips, 2006). Stiglitz (2012) argued that the trust and reciprocal goodwill are essential for the functioning of markets and social cooperation. Furthermore, they are an important aspect of a social contract, which is a social cohesion that binds society together and it is required for the long-term success of any country.

Using the World Value Survey, Zak and Knack (2006) examined the relationship between trust and growth. They defined the social, economic, and institutional conditions in which trust is high. They concluded that low trust environments are associated with lower investment rates. The model's predictions were tested empirically and found to be well supported by the dataset. The EQLS4 survey carried an item that captured respondents' trust; the respondents were asked the following question.

Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people?

1_____10

You can't be too careful Most people can be trusted

Trust in institutions

The severing of social bonds and trust evident in the politics, financial industry, and workplace has unavoidably affected the trust in institutions (Stiglitz, 2012). Algan et al. (2017) noted that the dissatisfaction of Europeans with institutions during the financial crisis reinforced an increase in political extremism. The EQLS4 poll included question on how much people trusted seven different institutions: the parliament, judicial system, news media, police, government, local governments, banks, and charities. Cronbach's alpha of 0.903 suggested that the scale had a good level of internal reliability. All the institution variables were combined to form a single composite index.

Please tell me how much you personally trust each of the following institutions.

1_____10

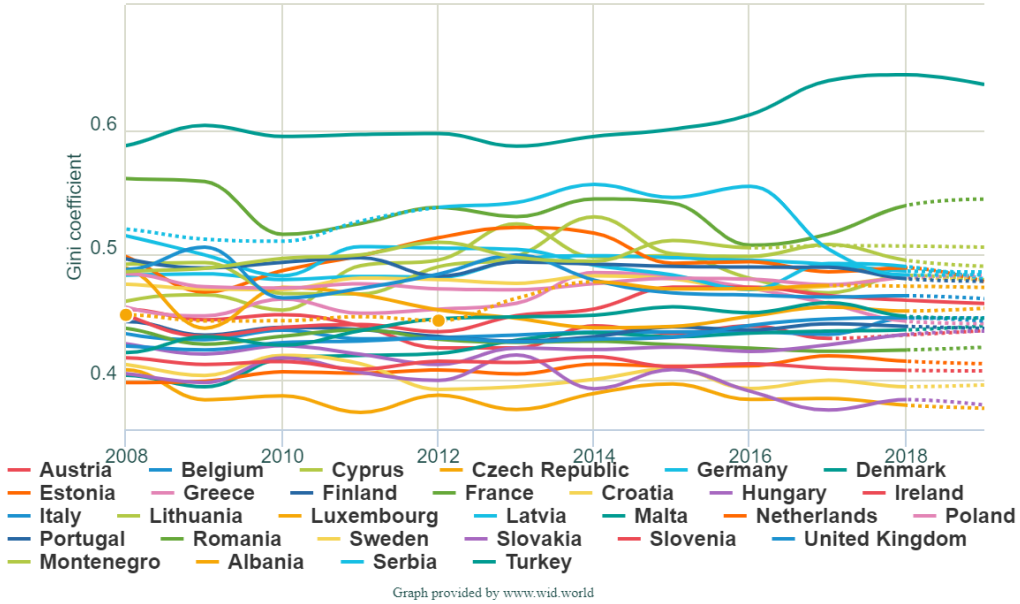
Do not trust at all Trust completely

Macroeconomic Level Indicators

Income inequality

The Gini Index, supplied by The Standardized World Income Inequality Database, is used to compare income distributions across European populations (Solt, 2016). The Gini coefficient is a number that varies from 0 to 1, with 0 denoting perfect equality and 1 denoting perfect inequality, figure 20. Greater inequality is indicated by a higher Gini coefficient. The coefficients range from 0.23 in Slovakia to 0.40 in Turkey. Figure 20 represents Gini coefficient of National Income for selected European countries used for the analysis.

Figure 18 Gini Index of National Income. Source: author, based on data from Alvaredo et al. (2016)



Income Quartiles

According to the relative power theory, grievance theory, and resource theory, the distribution has a significant effect on participation in peaceful protest (Solt, 2016). The quartile of household income is used as a measure of income distribution. In this four-point income variable, the poorest quartile is coded as 1, and the richest quartile is coded as 4.

Age of the democracy

The age of democracy is captured by a dummy variable that equals 1 for new democratic countries (former socialist states of Central and Eastern Europe) and 0 for the rest.

Personal Level Indicators

Gender, education, and principal economic status

Gender is an independent variable, and it is captured by a dummy variable that equals 1 for male and 2 for the female. Participants were asked about the highest level of education they completed and using the ISCED (1997) their responses were grouped into early childhood (0), primary (1), lower secondary (2), upper secondary (3), post-

secondary non-tertiary (4), short-cycle tertiary (5), bachelor (6), master (7) and doctoral (8) education. The participants' labour market status was established by questioning them about their principal economic status and categorising their responses as unemployed, retired, full-time homemaker, or student.

3.3.2 Data Analysis

Descriptive analysis

Tables and charts will be created as part of the preliminary inquiry to evaluate the association between gender, age, education, and the dependent variables.

Hierarchal Binomial Logistic Regression

Hierarchal binomial logistic regression will be used to predict whether people will engage in a protest based on the income inequality. This type of regression, like other types of regression, predicts the dependent variable using interactions between independent variables (Laerd Statistics, 2017). The accurately specified model is one of the most crucial assumptions in logistic regression (Hilbe, 2016; Menard, 2002). The Box-Tidwell process is one method for testing the assumption of linearity in the logit (Box and Tidwell, 1962), it is a statistical tool that was designed for linear regression but is also applicable to the logistic regression model (Fox, 2016; Guerrero and Johnson, 1982). Moreover, it is one of a few methods for determining whether a continuous independent variable is linearly related to the dependent variable's logit (Hosmer et.al, 2013; Menard, 2002, 2010). This procedure is insensitive from small departures from linearity, which Menard (2010) and Osborne (2015) considered to be an advantaged. The statistical procedure will be carried out using SPSS Statistics software.

$$logit(Protest_{ij}) = \alpha + \beta_1 lnGDP_j + \beta_2 Ineq_j + \beta_3 X_{ij} + e_{ijt} \qquad (1)$$

$Protest_{ij}$ – Protest engagement of participant i within a country j

α – Intercept

$lnGDP_j$ – the log transformed GDP per capita

$Ineq_j$ – income inequality measured by the Gini coefficient

X_{ij} – vector of other variables

e_{ijt} – represents the error

3.4 RESULTS AND DISCUSSION

Descriptive Findings

Examining the diagrams below reveals the different form of political participation and the differences are striking. The rate of people that attended a political meeting is highest in Sweden (18.6%) and lowest in Poland (1.7%). The highest number for attending demonstrations is in France (11.5%) compared to the lowest number in Latvia (1.1%). Sweden is also the most popular for signing a petition (35.3%), contacting a politician (18.7%), commenting a political issue online (27.4%) and boycotting a product (47.5%), the same forms of political engagement were least popular in Albania (2.7%), Romania (2%), Hungary (2.5%) and Romania (1.9%) respectively.

Figure 19 Attended a meeting of a trade union, a political party or political action group (% engagement. Source: author, based on data from EQLS 2016

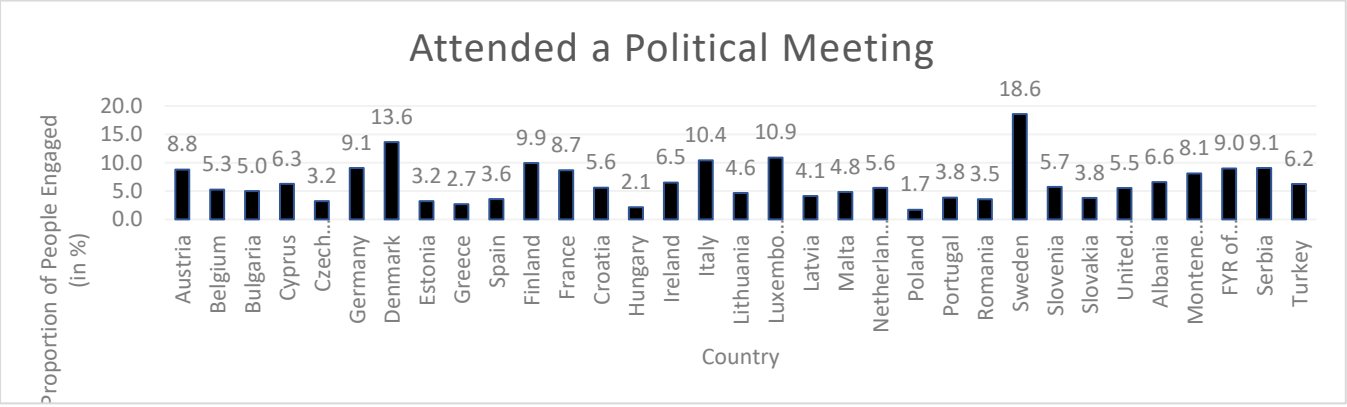


Figure 20 Attended a protest or demonstration (% engagement). Source: author, based on data from EQLS 2016

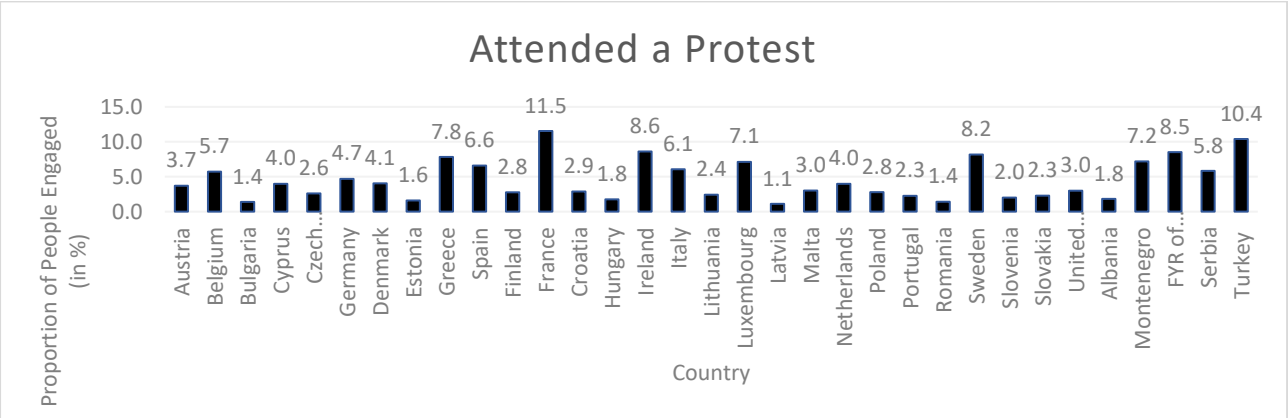


Figure 21 Signed a petition, including an e-mail or on-line petition (% engagement). Source: author, based on data from EQLS 2016

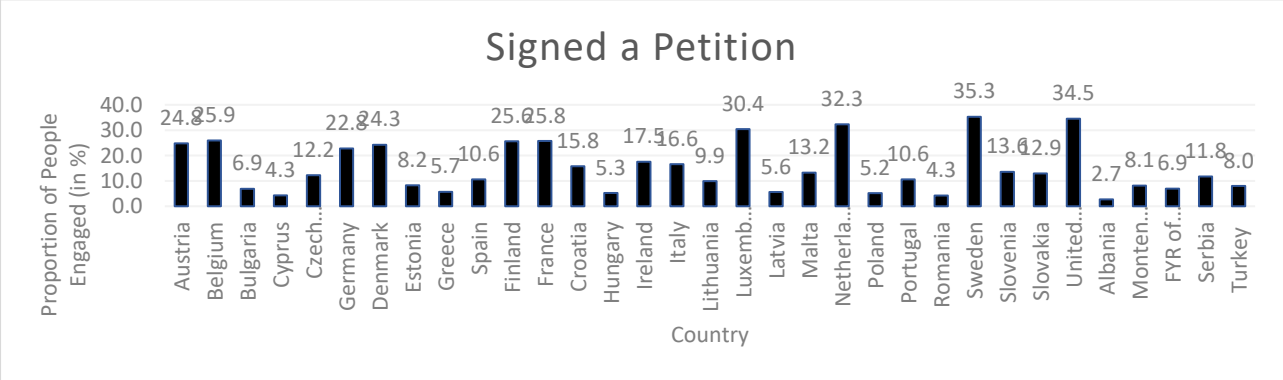


Figure 22 Contacted a politician or public official (% engagement). Source: author, based on data from EQLS 2016

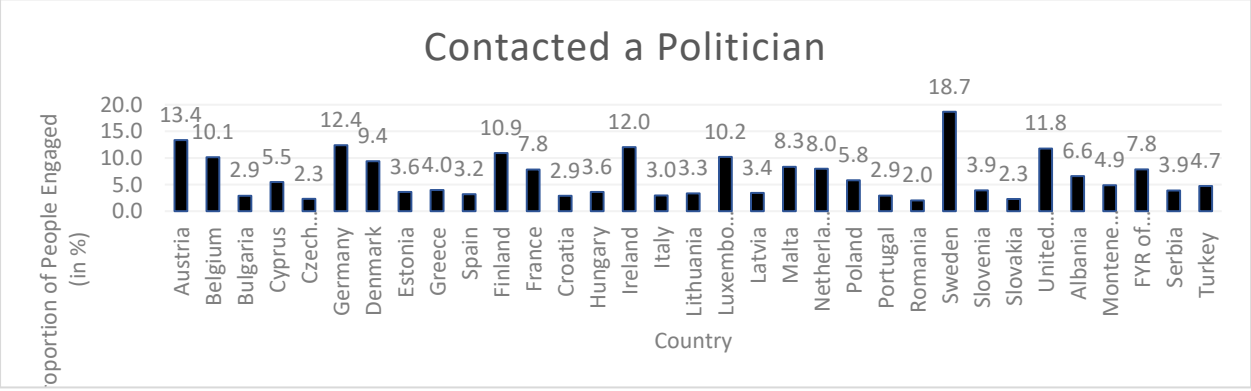


Figure 23 Commented on a political or social issue online (% engagement). Source: author, based on data from EQLS 2016

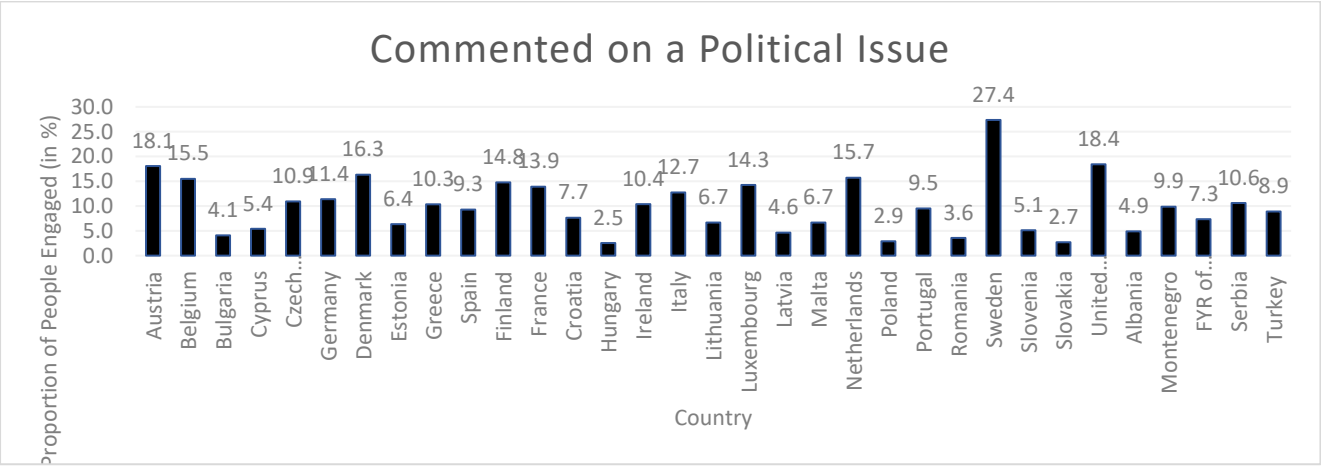
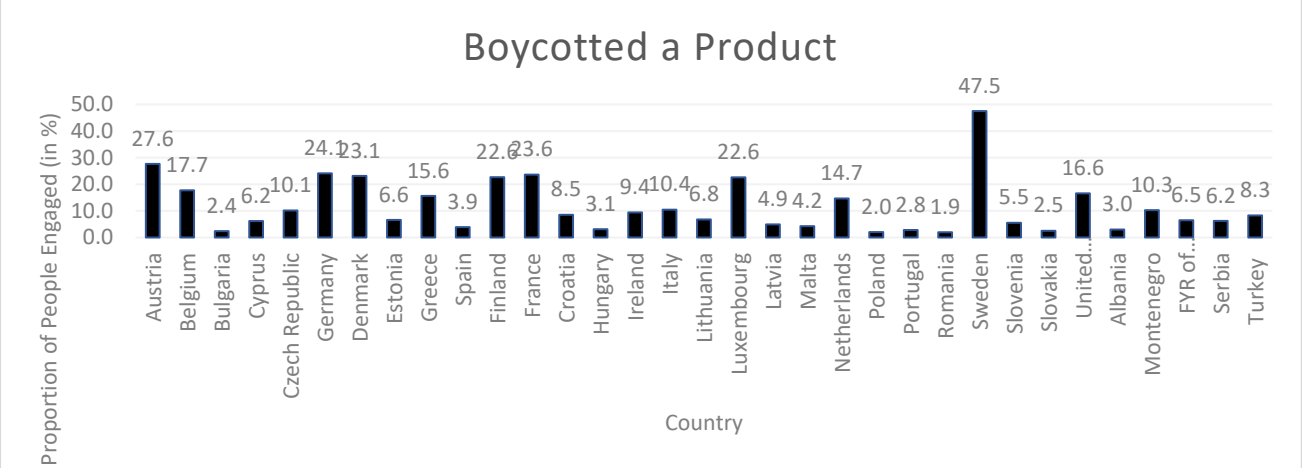


Figure 24 Boycotted certain products (% engagement). Source: author, based on data from EQLS 2016



The highest most popular activity reported across Europe was signing a petition (16%). The European Commission considers initiatives with 1 million signatures from Member States for implementation, making this form of political participation a highly relevant tool (Participedia, 2021). It was followed by the rate of people who boycotted a certain product (12%) and posted online about a political or social topic (10%). The forms of protest that require direct personal participation were the least popular, contacted a politician (7%), attended a meeting (7%) and attended a protest (5%).

Table 13 and 14 represent the effects of income inequality, trust and age of democracy on protest and other political participation investigated using hierarchal binomial logistic regressions. The Box-Tidwell (1962) approach was used to determine the linearity of the continuous variables with respect to the logit of the dependent variables. All 15 terms in the model were subjected to a Bonferroni correction,

statistical significance was accepted when $p < 0.0025$ (Tabachnick and Fidell, 2014). For all six models, all continuous independent variables except the age were determined to be linearly correlated with the logit of the dependent variable using this analysis, the age variable was categorised. All logistic regression models were statistically significant, $p < .0005$, ($\chi 2$).

Table 12 Coefficients and t-statistics for hierarchal binomial logistic regression models of attended a demonstration, signed a petition, and boycotted a product, EQLS 2016

	Hierarchical Binomial Logistic Regression – Protest Participation					
	Attended a Demonstration		Signed a Petition		Boycotted a product	
	Est.	*t*-stat	Est.	*t*-stat	Est.	*t*-stat
Female	-0.275***	0.052	0.165	0.032	0.085**	0.036
Age	-0.013***	0.002	-0.009***	0.001	-0.005***	0.002
ISCED categories	0.145***	0.015	0.253***	0.009	0.253***	0.010
Unemployed	0.088	0.100	-0.121*	0.068	-0.086	0.079
Retired	-0.186*	0.096	-0.326***	0.057	-0.100	0.062
Full-time homemaker	-0.375***	0.130	-0.825***	0.088	-0.579***	0.094
Student	0.461***	0.104	0.394***	0.072	0.207**	0.085
Gini x Income quartile 1	0.003	0.003	0.003	0.002	0.003	0.002
Gini x Income quartile 2	0.004	0.003	0.005***	0.002	0.006***	0.002
Gini x Income quartile 3	0.004*	0.003	0.008***	0.002	0.009***	0.002
Gini x Income quartile 4	0.006**	0.003	0.008***	0.002	0.009***	0.002
Trust in people	0.077***	0.012	0.110***	0.007	0.103***	0.008
Trust in institutions	-0.152***	0.014	-0.115***	0.009	-0.111***	0.010
Gini	0.024***	0.006	-0.056***	0.004	-0.061***	0.004
Age of democracy	-0.745***	0.060	-0.926***	0.037	-1.206***	0.044
(Constant)	-2.726	0.260	-0.474***	0.163	-0.717***	0.184
Chi-squared	718.336***		3356.339***		2728.246***	
R-squared	0.65		0.161		0.148	
Individuals	36463		36417		36371	
Countries	33		33		33	

Note: Dependent variable – attended a demonstration, signed a petition and attended a political meeting. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

The first column of Table 12 shows the predicted probabilities of attending a demonstration, a form of protest activity that requires a physical presence. Individuals with household earnings in the third and fourth quartile have a higher chance of attending a demonstration. Contrary, people in the poorest quartile of household income are the least likely group to attend. Those with a tertiary level of education are more likely to protest than those without any formal education. The probability of attending also decreases with age. Women, employed, and homemakers were less likely to engage. Moreover, the probability increases when people trust each other however it decreases when people trust institutions. This is consistent with previous

findings that there is a positive link between social capital and civic engagement (Miller 2009)

People living in new democracies were less inclined to attend a protest than those living in longer-established democracies. Similar evidence is also found among European people by Dubrow et al. (2008), they suggested that people are more likely to protest in old democracies. Furthermore, they argued that a higher economic inequality resulted in lower proportion of political protests.

The most popular form of protest engagement in Europe is signing a petition; its predicted probabilities are displayed in the middle column. The effect of income disparity on signing a petition for a person in the lowest quartile did not achieve statistical significance, as it did with attending a demonstration. On the other hand, inequality has a significant impact on the probability of a person in any other income quartile. Lower age and tertiary education are also linked to a higher probability to sign a petition. Signing a petition and boycotting a product are more gender-balanced forms of participation than other forms of engagement. The proportions of men and women involved are equal (16% and 16% respectively) for singing a petition and (13% and 12%) for boycotting; (see also Appendix 1). Compared to females, males are significantly likely to be involved in all the other forms of political engagement. Those who have no education are less inclined to sign a petition than those with a tertiary education. New democracies also have lower participation rates in signing a petition. Compared to those living in countries with lower trust, people living in trusting communities were more likely to sign a petition. However, lower trust in institutions is linked to lower participation.

Boycotting a product is displayed in the third column. Income inequality is a significant predictor of boycotting a product for individuals in the second, third and fourth quartile of household income. The probability of boycotting a product in the poorest income quartile did not reach any significance. People with a tertiary level of education were expected to be more likely than the least educated to engage in boycotting a product. Similarly, the youngest individuals were predicted more to be more likely than the oldest individuals. High trust among people and lower trust in institutions increased the boycotting activity, as they did for the other nonviolent

protest activities considered in this research. Those in younger democracies were less likely inclined to boycott a product. Social trust increases the likelihood of protesting, while people that do not trust institutions are predicted more likely to boycott a product. Students were also more like engage in this type of protest.

Table 13 Coefficients and t-statistics for hierarchal binomial logistic regression models of attended a meeting, contacted a politician and commented online, EQLS 2016

	Hierarchical Binomial Logistic Regression – Other Political Participation					
	Attended a meeting		Contacted a politician		Commented online	
	Est.	*t*-stat	Est.	*t*-stat	Est.	*t*-stat
Female	-0.440***	0.044	-0.408***	0.045	-0.281***	0.038
Age	0.012***	0.002	0.008***	0.002	-0.018***	0.002
ISCED categories	0.194***	0.012	0.253***	0.012	0.249***	0.010
Unemployed	-0.204**	0.100	0.277**	0.092	0.110	0.073
Retired	-0.628***	0.075	-0.180**	0.075	-0.324***	0.071
Full-time homemaker	-0.873***	0.140	-0.293**	0.123	-0.577**	0.104
Student	-0.174	0.128	0.016	0.125	0.411***	0.078
Gini x Income quartile 1	0.003	0.003	0.007***	0.003	0.004*	0.002
Gini x Income quartile 2	0.008***	0.002	0.008***	0.003	0.006***	0.002
Gini x Income quartile 3	0.012***	0.002	0.008***	0.002	0.006***	0.002
Gini x Income quartile 4	0.015***	0.002	0.015***	0.002	0.009***	0.002
Trust in people	0.023**	0.010	0.052***	0.010	0.087***	0.009
Trust in institutions	-0.004	0.012	-0.033***	0.013	-0.128***	0.010
Gini	-0.004	0.005	-0.029***	0.006	-0.022***	0.005
Age of democracy	-0.405***	0.049	-0.710***	0.052	-0.834***	0.044
(Constant)	-3.161	0.223	-2.581	0.230	-0.792	0.188
Chi-squared	902.072***		1121.158***		2363.760***	
R-squared	0.660		0.083		0.138	
Individuals	39469		39423		36369	
Countries	33		33		33	

Note: Dependent variable – attended a meeting, contacted a politician, and commented online.
*** p < 0.01, ** p < 0.05, * p < 0.1

Table 14 shows the outcome of the models for the other form of political engagement, attending a meeting, contacting a politician, and commenting online. The effect of income inequality on attending a meeting for a person in the lowest quartile did not achieve statistical significance. However, the significance is s achieved for contacting a politician and commenting online. The difference in political involvement associated with the levels of education achieved is also evident. Compered to people with basic education, people with tertiary education are significantly more likely to participate in all forms of political engagement investigated in this study.

3.5 CONCLUSION AND POLICY IMPLICATION

Economic and political scientists have been interested in the subject of inequality for generations (Milanovic, 2016; Piketty, 2014; Stiglitz, 2012). However, until recently, few attempts have been made to critically analyses the major theoretical perspectives explaining political engagement phenomena. The purpose of this article was to document and explain patterns of political engagement of ordinary citizens in Europe by examining the relationship between income inequality and different forms of participation with a focus on peaceful protests.

Overall, the empirical findings of this research point to inequality having a lowering effect on political engagement and protest activity, particularly for those with lower incomes (Solt, 2008; 2015). The binomial regression analysis above presents evidence that inequality significantly lowers probabilities of singing petitions, boycotting a product, contacting a politician, and commenting online. Greater inequality predicts more participation in one form of protest activity for people in the third and fourth quartile of income distributions.

The grievance theory, connecting relative deprivation with protest activity, is contradicted by these findings. More inequality does not make poorer individuals engage in protest. These findings, on the other hand, only reinforce the relative power. Greater inequality, overall, reduces the likelihood of peaceful protest for all except the third and fourth quartile by increasing the political power of wealthy relative to poorer citizens. Proponents of relative power theory have identified similar patterns assessing voting participation and other political engagement. It also adds to the growing body of evidence that increasing levels of economic inequality limit the scope of democracy in ways that demobilise the poor (Offe, 2013; Solt, 2008, 2015).

Policy implication

The findings in this article support evidence that the reward of economic growth is not equally distributed in many countries. Policies can impact the level of economic inequality and attempt to make economic growth more inclusive. To achieve this goal of inclusivity government can use redistribution and pre-distribution. Pre-distributive policies can provide people with opportunities throughout their lives.

Free high-quality education for all children

Heckman (2013) demonstrated how investing in quality early childhood development for disadvantaged children is the greatest strategy to level the playing field for impoverished children. These early interventions improved education, health, social, and economic results. The program eventually resulted in increased income and decreased need for costly welfare spending.

Minimum wage

Minimum wage is another pre-distributive policy. Dube et al (2010) investigated differential adjustments in minimum wages in districts in the United States. They concluded that raising the minimum wage had a minor negative impact on employment while increasing the average income of low-income employees.

Effective Civic Education at School

The government can promote quality civic education at school where students can learn about their rights and obligations as citizens, how governments operate, and how to participate in the development of a society. McFarland and Thomas (2006) concluded that participation in voluntary youth groups promotes later-life political engagement and implications for democratic education and election results.

Future research could explore the specific interaction scenarios that give rise to protest participation. Moreover, political inequality could be tested by looking at political power and policy responsiveness.

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3.6 Appendix A: Descriptive statistic, gender, and education

Table 14 Descriptive statistics for gender and political participation, EQLS 2016

Gender	Attended a meeting	Attended a protest	Signed a petition	Contacted a politician	Commented on an issue	Boycotted a product
Male	9%	6%	16%	8%	12%	13%
Female	5%	4%	16%	5%	9%	12%
Total	7%	5%	16%	7%	10%	12%
Chi-Square	174.726***	47.774***	1.471	128.711***	106.33***	0.79

*** p < 0.01, ** p < 0.05, * p < 0.1

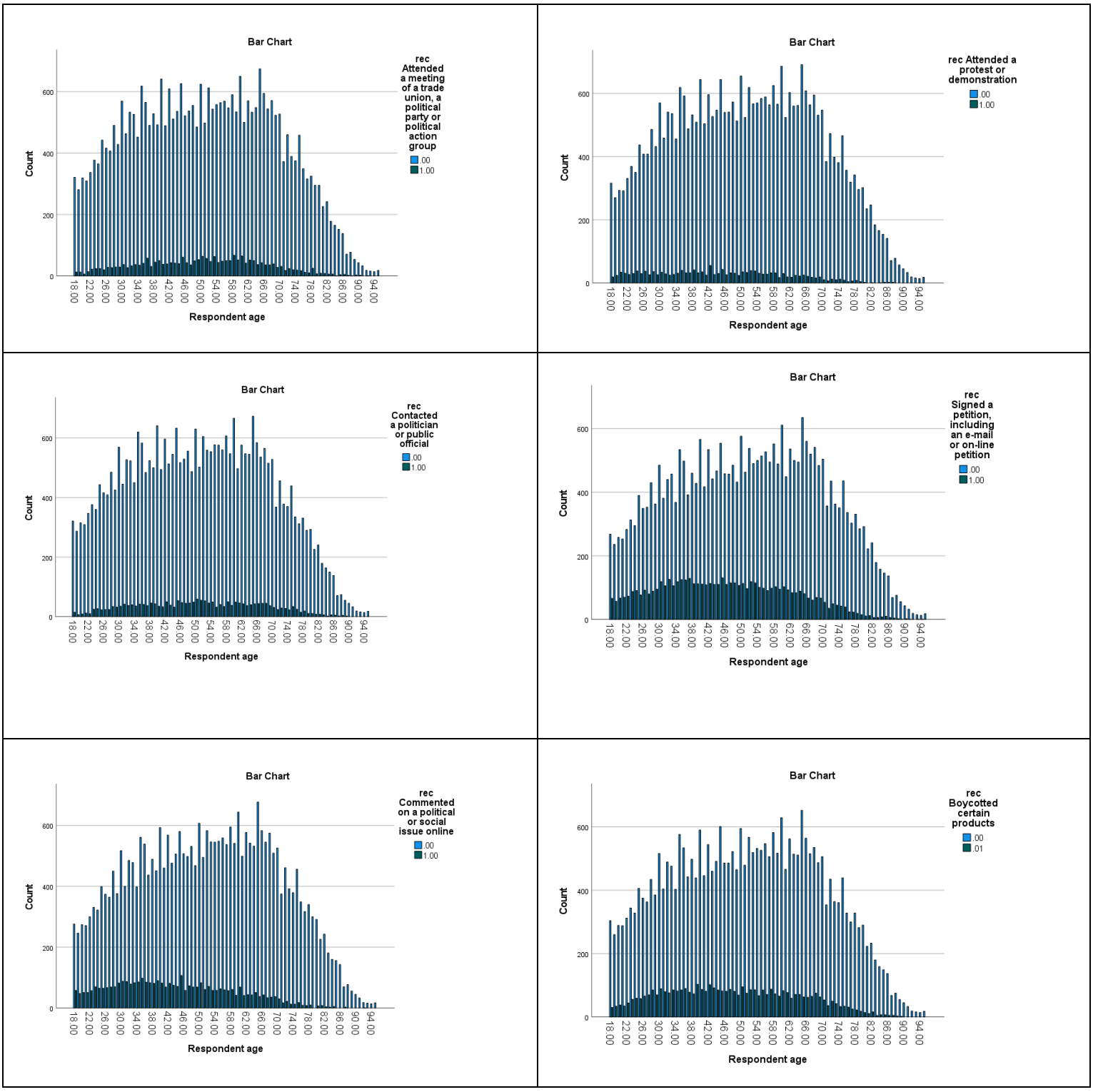
Table 15 Descriptive statistics for education and political participation, EQLS 2016

Gender	Attended a meeting	Attended a protest	Signed a petition	Contacted a politician	Commented on an issue	Boycotted a product
ISCED 0	2%	2%	3%	2%	2%	3%
ISCED 1	3%	3%	3%	3%	2%	3%
ISCED 2	4%	3%	10%	4%	6%	7%
ISCED 3	5%	4%	13%	5%	9%	10%
ISCED 4	9%	5%	18%	9%	12%	16%
ISCED 5	11%	7%	25%	11%	16%	23%
ISCED 6	10%	7%	25%	10%	18%	19%
ISCED 7	12%	7%	32%	13%	19%	23%
ISCED 8	17%	8%	35%	21%	25%	30%
Total	7%	5%	16%	7%	10%	12%
Chi-Square	536.94***	199.40***	1722.27***	1111.47***	536.94***	1352.30***

*** p < 0.01, ** p < 0.05, * p < 0.1

3.7 Appendix B: Descriptive statistic, age, and political participation

Figure 25 Descriptive statistics for age and political participation. Source: Author, based on data from EQLS 2016



General Conclusion

This thesis's main aim was to explore the extent to which economic inequality influences well-being inequality, mental well-being, and political protests among European people. Furthermore, this thesis improved the current methods used to measure well-being inequality and contributed to the growing body of knowledge about the relationship between income inequality and other inequalities.

This thesis analysed the situation of European people in the early twenty-first century using a mix of cross-national surveys, the European Quality of Life Survey (EQLS) and the European Social Survey (ESS). This thesis consists of three quantitative studies of European citizens based on three distinct literature reviews providing a detailed overview of previous research on the topic. Specifically, this thesis attempts to answer the following questions: What impact, if any, does a level of economic inequality have on the European citizens' happiness, mental health, and political engagement?

The thesis contributes to the body of knowledge in economics about the relationship between income inequality and well-being, using happiness inequality, mental health, and protest measures. The findings of this study apply not just to academics but also to governments, policymakers, community organisers, mental health practitioners and any citizen.

The rest of this section is laid out as follows. First, the objectives and findings are reviewed, including the contribution to the domains of income inequality. Second. The limitations of this thesis are discussed. Finally, possible future research paths are proposed.

Contribution of the research

Article 1: Measuring Inequality in the Context of Subjective Wellbeing in Europe, Using the Two Predictors of the European Social Survey: Satisfaction and Happiness

Article I examined the appropriateness of the standard deviation in measuring well-being. A novel disparity metric called 'Dynamic Range' was proposed and compared to the existing ones, the instrument-effect-corrected standard deviation and raw standards deviation. Delhey and Kohler (2011) developed the IEFFA adjusted standard deviation. Furthermore, the findings did not produce a meaningful effect in a country's ranking of well-being inequality, implying that there was only minimal

structural dependency in the data (Kalmeejen and Veenhoven, 2005). Moreover, the difference between the Dynamic Range and the other two measures of inequality were also negligible. The finding indicates that a lower Gini coefficient has a positive effect on well-being inequality. The creation of a new statistic, the 'Dynamic Range,' contributed to attaining this conclusion.

The first contribution of this paper was to include two measures of well-being, emotional (happiness) and cognitive (life satisfaction). The paper's second contribution, methodological, was to improve the present methods for measuring inequality in well-being (Kalmijn and Veenhoven, 2005; Delhey and Kohler, 2011). A new measure of inequality referred to as the 'Dynamic Range' was proposed. The effects of two predictors, income inequality and affluence, are compared using all three measures of well-being inequality.

Article 2: Income Inequality and Mental Health: An Examination of Socioeconomic Inequalities in Europe

The multiple regression findings indicate that citizens in nations with significant inequality report lower mental well-being, as measured by positive and negative affect indicators. The finding supports the relative deprivation theory, therefore reducing economic disparity is beneficial for mental health. The finding also indicates that mental well-being improves when a person completes a higher level of education, is a male, a student, retired, or has no chronic health concerns. The status anxiety, social capital, and neo-material theories also successfully explain the impact of income differences on mental wealth. Furthermore, general health and have someone to talk to are significant determinations of mental well-being.

This paper's first contribution was to discuss the link between income inequality and poor mental health. Furthermore, the results were compared using the positive and negative affect indicators. The outcomes for both indicators were similar. The second was to identify the key determinants affecting European mental well-being, testing the social capital, status anxiety and neo-materialist hypotheses. The third was to provide policy recommendations.

Article 3: Income Inequality, Social Status and Nonviolent Protests

The purpose of this article was to investigate and explain patterns of political engagement in Europe by looking at the relationship between economic disparity and various forms of participation, with a focus on nonviolent protests. Second, the

determinants of political participation, mainly protests, were examined. The data show that the level of political engagement among European populations varies. Except for joining a demonstration, the most popular activity in France, Sweden has the most active citizens. Former socialist countries in Central and Eastern Europe are the least involved in politics.

The findings of this article provided a substantial contribution to the understanding of both peaceful protest participation and political effectiveness. The paper's second contribution was to investigate the link between economic disparity, social capital and peaceful protests. The final contribution was to propose policy recommendations that were appropriate for the situation.

Policy implications

Economic policies can alleviate the problems of inequality and ensure more fair outcomes. Combating income inequality while boosting innovation has proven to be more critical than previously anticipated. In addition, the government can influence the results through pre-distribution and redistribution. Pre-distribution policies interfere directly in labour markets to reduce inequality Moreover, redistributive policies are another tool to reduce inequality and promote economic development.

High-Quality Education

Heckman (2013) advocated for a shift in policy toward early childhood interventions that aim to improve cognitive skills and non-cognitive traits like confidence and determination. He demonstrated that early intervention had a considerably more significant positive economic and social impact than later intervention. The findings in this study suggest the significant role education plays in causing and preventing mental health wellbeing. Mental health wellbeing data suggested a positive link with educational attainment, similar findings were reported for obesity, morbidity from chronic to acute diseases (Woolf et al., 2007)

Eliminating Gender Discrimination

Kochhar et al. (2017) argued that significant gender inequality persists; women have less economic prospects than men, males tend to work more in most nations, and women are frequently paid less for equivalent work. Furthermore, they identified the negative macroeconomic consequences of gender inequality as increased income inequality and decreased economic diversification. The finding in this thesis suggests

a significant negative association between being a female and having a worse mental well-being. Bambra and Eikemo (2008) argued that it was likely because women's replacement rates were lower than average. Thus, the critical role of policymakers is to ensure gender equality. For example, access to comprehensive, inexpensive, and high-quality childcare can frees up women's time for formal work (Gong et al., 2010). Other policies could also include flexible working arrangements and encouraging women to work in science and engineering fields.

Progressive Tax System

Hacker and Pierson (2010) argued that analysis of widening inequality must give importance to tax policy. Progressive tax policies are redistributive policies that impose a higher percentage rate on higher-income taxpayers. These can include investment interest taxes and tax credits. Redistributive strategies have always been traditionally cantered income statistics. However, Piketty (2014) argued for a wealth tax as it would raise more revenue than income tax.

Well-being Policies

Most countries' policies are based on the premise that a growing economy leads to well-being. Yet, many studies have provided evidence that aspects other than GDP and wealth have a greater impact on well-being (Helliwell et al., 2018; Diener et al., 2009; Diener and Diener-McGavran, 2008; Ovaska and Takashima, 2006; Easterlin, 1974, 1995, 2001).

Knight Foundation (2010) investigated the characteristics that connected people to their communities and the significance of community attachment in a region's economic growth. They observed a significant positive link between community attachment and economic growth. Furthermore, they concluded that national economic difficulties had no discernible impact on attachment locally, and the cities with the highest levels of attachment had the highest GDP growth rates. They identified three factors that provided well-being for cities, social offering, openness, and beauty. The findings of this article suggested that social capital, measured by trust, was substantially related to better mental health and political engagement. Thus, policies that enhance community strengths, strengthen community attachment, and increase local economic growth are required.

Zoning reforms, the provision of parks, art, playgrounds, and green spaces are all examples of social offering. Furthermore, openness policies can encourage awareness initiatives, inclusion promotion, and laws that criminalise prejudice. Finally, beauty policies can encourage green ecological constructions and preservation of historical sites (Musikansi et. al, 2021)

Civic Engagement

The government can promote policies to motivate students to learn about their rights and responsibilities as citizens and how to participate in the development of society through effective civic education in schools. In addition, participation in voluntary youth organisations improved later-life political activity, according to McFarland and Thomas (2006), with consequences for election results.

Research limitation

It needs to be acknowledged that this thesis has some limitations. One of the main limitations of this thesis is that it considers only income inequality as an indicator of economic well-being like many other studies. However, specific government policies and intergenerational transfers can significantly amplify socioeconomic inequalities, resulting in wealth inequality being larger than income inequality. Many researchers attempted to identify some of the main factors influencing wealth inequality. For example, while Piketty (2014) argued that wealth needs to be more substantially taxed, Gilens (2012) demonstrated that politicians in his study nearly entirely responded to the desires of the economically advantaged.

A further limitation of this study is the sample size. Although the samples include more than 30 European countries, the analysis would improve if the data included many countries worldwide, including high-income, low-income, and transitional economies.

Another limitation in this cross-sectional study is that it did not allow for a time lag during which income inequality impacted people's perceptions of socioeconomic position and health. For example, Blakely et al. (2000) suggested that income inequality measured 15 years ago was more strongly related to self-reported health than recent income inequality.

Future Study

Future research should explore the influence of wealth inequality on a wide range of outcomes. Although there has been a rising interest in inequality related topics in

economic and political studies, more research is needed. For example, Adler and Ansell (2019) investigated the link between wealth inequality and the rise of populist sentiment in the UK and France. They concluded that the location of wealth inequality provided a compelling explanation for the populist vote share pattern. In addition, Gyongyosi and Verner (2021) provided evidence for a positive link between debtor distress and support for the populist far-right in Hungary. Therefore, future studies would benefit from including more countries in the analysis and investigate the relationship between wealth inequality and populist sentiment across Europe.

Future research could also include more robust research methods to analyse the extent to which wealth inequality impacts mental health. Longitudinal studies including many countries worldwide could allow this. Including time lags in the analysis will provide a more accurate view of the link between economic inequality and mental health.

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Résumé

L'objectif principal de cette thèse est d'examiner si l'inégalité des revenus a un impact sur le bien-être des Européens; plus précisément, elle examine la relation entre l'inégalité des revenus et le bonheur, la santé mentale et l'inégalité politique. Cette thèse tente de répondre aux questions suivantes: Quel impact un niveau d'inégalité économique a-t-il sur le bonheur, la santé mentale et l'engagement politique des citoyens européens?

En utilisant une régression binomiale hiérarchique multiple et une combinaison d'enquêtes transnationales, l'enquête européenne sur la qualité de vie (EQLS) et l'enquête sociale européenne (ESS), cette thèse étudie le cas des citoyens européens au début du XXIe siècle.

L'article I examine la pertinence de l'écart-type pour mesurer le bien-être. Une nouvelle mesure, la "gamme dynamique", est proposée et comparée aux mesures de disparité existantes. L'analyse révèle que dans certains pays, l'inégalité du classement du bonheur a considérablement changé. Les résultats suggèrent fortement que l'inégalité des revenus est beaucoup plus critique que prévu dans la détermination de l'inégalité du bien-être. Le développement d'une nouvelle mesure, la "Dynamic Range", a grandement contribué à cette conclusion.

Le document II examine si l'inégalité des revenus a un effet sur le bien-être mental. Tout d'abord, il explore les variations du niveau de bien-être mental parmi les Européens. Deuxièmement, les déterminants du bien-être mental sont étudiés. Troisièmement, les hypothèses du capital social, de l'anxiété sociale et du néomatérialisme sont testées, afin d'expliquer l'association entre l'inégalité des revenus, mesurée par le coefficient de Gini, et le bien-être mental, mesuré par les indicateurs d'équilibre entre des affects positifs et négatifs. Les deux scores composites mesurant le bien-être et la détresse ont donné des résultats similaires dans l'analyse. Les résultats réfutent l'hypothèse de l'effet tunnel, selon laquelle l'inégalité de richesse rend les gens optimistes et accroît leur bonheur. En revanche, ils soutiennent la théorie de la privation relative, selon laquelle une moindre disparité économique est

nécessaire au bonheur. En outre, les données indiquent que le capital social et une faible anxiété sociale sont essentiels à la santé mentale.

Enfin, le document III explore la relation entre l'inégalité des revenus et l'inégalité politique. Premièrement, il étudie la variation du niveau d'engagement politique parmi les démocraties européennes avancées. Ensuite, les déterminants de la participation politique, principalement les protestations, sont examinés. Les résultats révèlent que le niveau d'engagement politique des citoyens européens varie. Les citoyens les plus actifs se trouvent en Suède, à l'exception de la participation à une manifestation, l'activité la plus populaire en France. Les anciens pays socialistes d'Europe centrale et orientale sont les moins engagés en politique. En outre, les résultats renforcent la théorie du pouvoir relatif; une plus grande inégalité économique exacerbe l'inégalité politique.

Introduction générale

Cette thèse examine dans quelle mesure la disparité économique influence l'inégalité de bien-être, le bien-être mental et les protestations politiques parmi les populations européennes. Le statut socio-économique et ses conséquences sur le bien-être humain ont été une préoccupation commune tout au long de l'Histoire. Depuis l'Éthique de Nichomaque d'Aristote, et l'idée que la privation peut faire obstacle à la réalisation de l'Eudaimonia (Cashen, 2016), la comparaison relative a été observée dans "des choses comme l'éthique utilitaire de Bentham, le Discours sur l'inégalité sociale de Rousseau et la Critique du raisonnement moral de Kant " (Suls & Wheeler, 2000 : 3). Cependant, la préoccupation concernant la comparaison entre soi et l'autre et son impact sur le bien-être a pris de l'importance surtout au cours des 100 dernières années (Cooley, 1902 ; James, 1890 ; Mead, 1934).

Easterlin (1974) a fourni un point de départ à la recherche empirique sur le sujet lorsqu'il a identifié deux facteurs expliquant pourquoi un revenu plus élevé n'est pas corrélé à des niveaux de bonheur plus élevés. Premièrement, le bien-être subjectif est affecté par des effets de comparaison avec des groupes de référence tels que quelqu'un d'autre dans une communauté, un voisin ou des collègues de travail. Stevenson et Wolfers (2008) ont contesté la conclusion du paradoxe d'Easterlin et ont fait valoir que le revenu total est un déterminant essentiel du bien-être. Ils ont identifié le même

phénomène en comparant les riches et les pauvres dans une analyse inter-pays et intra-pays. Deuxièmement, une augmentation du revenu peut faire fluctuer le bonheur pendant une courte période avant de revenir à son niveau précédent.

Depuis lors, de nombreuses études empiriques sur le revenu et le bien-être relatifs ont été menées (Layte, 2012 ; Fitzroy et al., 2011 ; Hopkins, 2008 ; Ferrer-i-Carbonel, 2005 ; Falk et Knell, 2004 ; Stutzer, 2004 ; Clark et Oswald 1996). En outre, Amendola et al. (2015) ont examiné les économies européennes avancées, Clark et Senik (2014) les villages ruraux, Kuegler (2009), les économies à revenu intermédiaire supérieur, et Becchetti et Savastano (2009), les économies en transition.

Les études sur l'influence des inégalités de revenus sur un large éventail de résultats sont de plus en plus multidimensionnelles. On pense que des résultats négatifs tels que la mauvaise santé, les problèmes mentaux, la faible confiance sociale, l'exclusion sociale et les faibles niveaux d'engagement politique sont influencés par le degré général d'inégalité économique dans la société (Solt, 2015, 2008; Wilkinson et Pickett, 2010 ; Huisman et Oldehinkel, 2009 ; Andersen et Fetner, 2008, Neckerman et Torche, 2007 ; Rothstein et Uslaner, 2005 ; Daly et al., 2001, Kawachi et al., 1997). Compte tenu de l'évolution rapide de l'économie et des conditions socio-économiques, il est nécessaire de poursuivre les recherches sur l'association entre l'inégalité des revenus et les résultats négatifs au sein des sociétés. Cette thèse vise à examiner dans quelle mesure l'inégalité des revenus a un impact sur l'inégalité du bonheur, le bien-être mental et les protestations politiques. Les tendances et les déterminants de l'inégalité seront suivis et explorés. En outre, cette thèse améliore les méthodes actuelles utilisées pour mesurer l'inégalité de bien-être.

Le reste de cette section est présenté comme suit. Tout d'abord, le concept d'inégalité du bonheur en Europe est introduit. Ensuite, le rôle de l'évolution de l'inégalité des revenus dans la santé et l'engagement politique est examiné. Enfin, la contribution académique, ainsi que les questions et objectifs de la recherche, sont proposés.

Bien-être - Inégalité

La plupart des recherches sur les inégalités se sont concentrées sur les disparités de revenu et de richesse (Atkinson, 2015 ; Keeley, 2015 ; Atkinson et Bourguignon, 2014

; Piketty, 2014 ; Stiglitz, 2012 ; Neckerman et Torche, 2007). Cependant, l'inégalité de revenu est une estimation trop simpliste de l'inégalité totale (Helliwell et Mayraz, 2018; Helliwell et al., 2016; Goff et al., 2016, 2018 ; Kalmijn et Veenhoven, 2005). Helliwell et al. (2019) ont suggéré que les implications de l'égalité du bonheur sont fréquemment plus remarquables que les effets de l'inégalité des revenus. Par exemple, Geof et al. (2018) ont soutenu que la confiance sociale est plus fortement liée à l'inégalité de bien-être que l'inégalité de revenu.

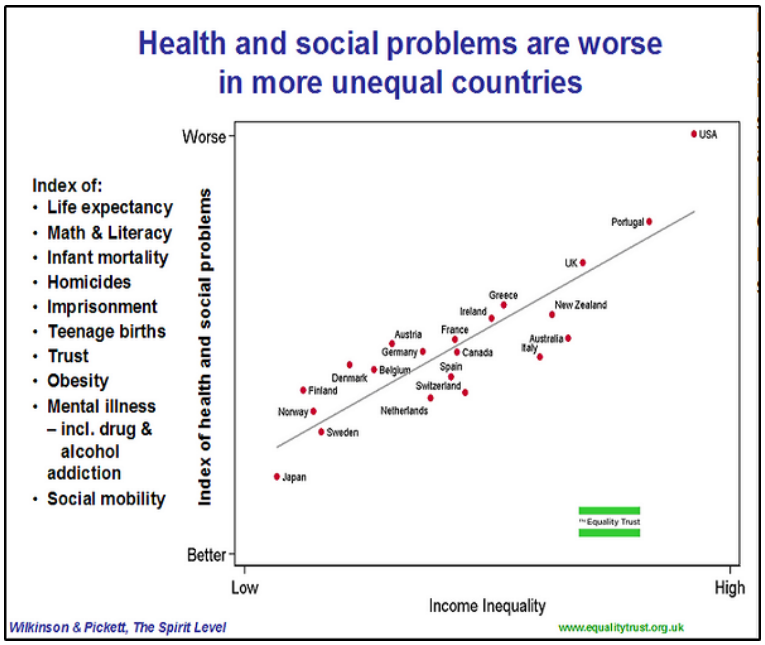
Alors que le bien-être subjectif a gagné en popularité dans la recherche sur le bonheur, la recherche sur les marqueurs de dispersion du bonheur a été limitée. Veenhoven (1990) a été le premier à suggérer de mesurer la satisfaction en fonction de l'inégalité de vie (1990). Selon Veenhoven et Kalmijn (2005), l'écart-type a donné de bons résultats en tant que mesure de l'inégalité du bien-être. Cependant, Delhey et Kohler (2011) ont conclu que l'écart-type est une fausse représentation de l'inégalité et ont introduit l'écart-type corrigé de l'effet d'instrument (SD IEFF) pour supprimer la dépendance structurelle.

Berg et Veenhoven (2010) n'ont identifié aucune corrélation entre l'inégalité de revenu et l'inégalité de bien-être après avoir contrôlé la richesse. À l'inverse, selon Delhey et Kohler (2011), l'écart-type (SD) corrigé de l'effet d'instrument (SD IEFF) modifie le classement de certains pays en termes d'inégalité de bonheur. En outre, ils ont conclu que l'inégalité de revenu est un déterminant significatif de l'inégalité de bonheur.

Santé mentale et bien-être

En ce début de vingt et unième siècle, d'importantes inégalités de santé sont présentes dans tous les pays européens. Plusieurs études ont examiné dans quelle mesure les inégalités de revenus ont un impact sur la santé globale et les inégalités de santé (Hu et al., 2015; Pickett et Wilkinson, 2015 ; Layte, 2012 ; Wilkinson et Pickett, 2010 ; Beckfield, 2004). Les conclusions générales peuvent être résumées par la figure 1 ci-dessous. Les problèmes sanitaires et sociaux, notamment la santé, la santé mentale, la criminalité et la mortalité infantile, sont pires dans les sociétés plus inégalitaires (Wilkinson et Pickett, 2010).

Figure 1 Conséquence de l'inégalité des revenus Source: Wilkinson et Pickett (2010: 7)



Plusieurs études ont examiné le rôle de l'évolution des inégalités de revenus dans les inégalités de santé au sein d'un pays. Par exemple, une étude sur l'inégalité des revenus et la santé auto-évaluée à Stockholm a conclu que le fait de vivre dans un quartier présentant une importante disparité de revenus était particulièrement néfaste pour la santé des pauvres (Rostila et al., 2012). De même, Aittaomaki et al. (2014) ont examiné l'augmentation des inégalités de revenus en Finlande. Ils ont conclu que les changements dans la répartition des revenus pourraient expliquer jusqu'à la moitié de l'augmentation observée des problèmes de santé à l'extrémité inférieure de la fourchette de revenus. En outre, Graville et Sutton (2003) ont réalisé une étude similaire sur les inégalités de santé liées au revenu en Angleterre, en Écosse et au Pays de Galles, entre 1979 et 1995. Leurs conclusions suggèrent que la diminution des inégalités de revenus peut contribuer à réduire les disparités de santé entre les riches et les pauvres. En outre, Kachi (2013) a proposé de réduire l'incidence du chômage ou de l'inactivité économique pour prévenir les disparités inutiles en matière de santé.

Alors que les effets négatifs des disparités économiques sur la santé sont largement établis, les voies sous-jacentes sont moins bien comprises. Wilkinson et Pickett (2017) ont suggéré que la qualité des interactions sociales semble être affectée par les inégalités de revenus. Ils ont contesté deux stratégies sociales contrastées. L'une est adaptée à la vie dans une hiérarchie dominante, où l'anxiété liée au statut augmente,

et où l'individualisme égocentrique est typique. L'autre est adaptée à une société plus égalitaire basée sur l'amitié, la collaboration et le partage.

Manifestations politiques et inégalité

Plusieurs études ont démontré diverses conséquences négatives des inégalités de revenus aux niveaux national et mondial. Par exemple, la disparité des revenus peut avoir un impact négatif sur la santé (Hu et al., 2015 ; Pickett et Wilkinson, 2015), le taux de criminalité (Enamorado et al., 2016) et la confiance dans les citoyens (Putnam, 2020 ; Mikucka et al. 2017). Étant donné les preuves que les inégalités nuisent au niveau de vie et au bien-être, on pourrait s'attendre à ce que les mouvements sociaux se forment en réaction à l'écart de revenu croissant de la société (Alvarez, 2018). Cependant, plusieurs études suggèrent que l'engagement politique est faible dans les pays ou les communautés lorsque les inégalités de revenus sont élevées (Solt, 2008, 2015 ; Lancee et Van de Werfhorst, 2012 ; Uslaner et Brown, 2005 ; Alesina et La Ferrara, 2000 ; Oliver, 1999). En outre, Kriesi (2012) a suggéré que les protestations étaient significativement influencées par des facteurs externes tels que le niveau de griefs d'une population, les ressources matérielles et culturelles accessibles aux manifestants potentiels, et un environnement culturel qui répond aux revendications de protestation.

La littérature a fourni des arguments en faveur d'un lien négatif ou positif entre l'augmentation de la disparité économique et la protestation politique. Selon les partisans de la théorie du pouvoir relatif, les riches peuvent utiliser leur richesse pour se faire entendre sur le plan politique dans les pays où les disparités économiques sont importantes. Les pauvres renoncent à participer car ils se sentent impuissants. De même, les partisans de la théorie des ressources affirment que l'inégalité des revenus encourage la participation des personnes relativement riches, mais en raison des ressources plutôt que du pouvoir (Solt, 2015). Cependant, les partisans de la théorie des griefs affirment le contraire: les pauvres seront encore plus motivés pour utiliser leur pouvoir politique (Shapiro, 2002).

Questions et objectifs de la recherche

L'objectif général de cette thèse est d'étudier dans quelle mesure la disparité économique influence l'inégalité du bonheur, le bien-être mental et les protestations politiques chez les Européens.

*L'*article I mesure l'inégalité dans le contexte du bien-être subjectif dans les nations européennes et analyse ensuite l'effet de l'inégalité des revenus et de la richesse sur ces indicateurs de dispersion. L'article II étudie les déterminants sociaux de la santé mentale et évalue l'impact du niveau d'inégalité économique d'un pays sur le bien-être dans les pays européens. L'article III examine l'impact du niveau d'inégalité économique d'un pays sur l'engagement protestataire dans les pays européens.

Tableau 1: Objectifs et questions de recherche

Papier	Objectifs	Questions de recherche	Source des données
Document 1	Inclure la mesure émotionnelle du bien-être: le bonheur. Améliorer les méthodes actuelles utilisées pour mesurer les inégalités de bien-être. Évaluer l'inégalité des revenus et la richesse en tant que déterminants clés de la satisfaction de la vie et de l'inégalité du bonheur.	Quel indicateur d'inégalité de bien-être a donné le résultat le plus valable? Dans quelle mesure l'inégalité des revenus et la richesse affectent-elles l'inégalité du bien-être?	Cycle 6 de l'enquête sociale européenne (ESS, 2012).
Document 2	Discuter de la relation entre l'inégalité des revenus et la santé mentale subie Identifier les principaux déterminants du bien-être mental des Européens, en utilisant les hypothèses du capital social, de l'anxiété liée au statut et du néomatérialisme. Faire des recommandations éclairées sur les politiques publiques.		4 thEnquête européenne sur la qualité de vie (4 EQLS) 2016.
Document 3	Examiner comment la participation à un soulèvement pacifique varie selon les pays. Étudier la relation entre l'inégalité des revenus et les protestations pacifiques. Faire des recommandations sur les politiques publiques appropriées.	Dans quelle mesure les griefs exacerbés par les inégalités de revenus motivent-ils les pauvres à s'engager dans une manifestation? Dans quelle mesure la répartition inégale des ressources incite-t-elle les personnes aisées et les personnes pauvres à protester? Dans quelle mesure l'inégalité décourage-t-elle toutes les personnes, sauf les plus riches, de s'engager dans différentes formes de protestation?	4 thEnquête européenne sur la qualité de vie (4 EQLS) 2016.

Conclusion générale

L'objectif principal de cette thèse était d'explorer la mesure dans laquelle l'inégalité économique influence l'inégalité de bien-être, le bien-être mental et les protestations politiques chez les Européens. En outre, cette thèse a permis d'améliorer les méthodes actuelles utilisées pour mesurer l'inégalité de bien-être et de contribuer à l'ensemble croissant de connaissances sur la relation entre l'inégalité de revenu et les autres inégalités.

Contribution de la recherche

Article 1: Mesurer l'inégalité dans le contexte du bien-être subjectif en Europe, en utilisant les deux prédicteurs de l'enquête sociale européenne : la satisfaction et le bonheur

L'article I a examiné la pertinence de l'écart-type pour mesurer le bien-être. Une nouvelle mesure de disparité appelée " Dynamic Range " a été proposée et comparée aux mesures existantes, l'écart-type corrigé de l'effet de l'instrument et l'écart-type brut. Delhey et Kohler (2011) ont développé l'écart type corrigé par l'IEFFA. En outre, les résultats n'ont pas produit un effet significatif dans le classement d'un pays en matière d'inégalité de bien-être, ce qui implique qu'il n'y avait qu'une dépendance structurelle minimale dans les données (Kalmeejen et Veenhoven, 2005). En outre, la différence entre la dynamique range et les deux autres mesures de l'inégalité était également négligeable. Ces résultats indiquent qu'un coefficient de Gini plus faible a un effet positif sur l'inégalité de bien-être. La création d'une nouvelle statistique, le "Dynamic Range", a contribué à cette conclusion.

La première contribution de ce document a été d'inclure deux mesures du bien-être, émotionnel (bonheur) et cognitif (satisfaction dans la vie). La deuxième contribution de ce document, d'ordre méthodologique, est d'améliorer les méthodes actuelles de mesure des inégalités de bien-être (Kalmijn et Veenhoven, 2005 ; Delhey et Kohler, 2011). Une nouvelle mesure de l'inégalité, appelée "gamme dynamique", a été proposée. Les effets de deux prédicteurs, l'inégalité de revenu et la richesse, sont comparés en utilisant les trois mesures de l'inégalité de bien-être.

Article 2: Inégalités de revenus et santé mentale : Un examen des inégalités socioéconomiques en Europe

Les résultats de la régression multiple indiquent que les citoyens des nations où les inégalités sont importantes font état d'un bien-être mental moindre, mesuré par des indicateurs d'affect positif et négatif. Ces résultats corroborent la théorie de la privation relative, et la réduction des disparités économiques est donc bénéfique pour la santé mentale. Les résultats indiquent également que le bien-être mental s'améliore lorsqu'une personne atteint un niveau d'éducation plus élevé, est un homme, un étudiant, un retraité ou n'a pas de problèmes de santé chroniques. Les théories de l'anxiété liée au statut, du capital social et du néo-matériel expliquent également avec succès l'impact des différences de revenus sur la richesse mentale. En outre, la santé générale et le fait d'avoir quelqu'un à qui parler sont des déterminants importants du bien-être mental.

La première contribution de cet article a été de discuter du lien entre l'inégalité des revenus et la mauvaise santé mentale. En outre, les résultats ont été comparés en utilisant les indicateurs d'affect positif et négatif. Les résultats pour les deux indicateurs étaient similaires. La deuxième contribution a consisté à identifier les principaux déterminants du bien-être mental des Européens, en testant les hypothèses du capital social, de l'anxiété liée au statut et du néo-matérialisme. Le troisième objectif consiste à fournir des recommandations politiques.

Article 3: Inégalité des revenus, statut social et protestations non violentes

L'objectif de cet article était d'étudier et d'expliquer les modèles d'engagement politique en Europe en examinant la relation entre la disparité économique et diverses formes de participation, en mettant l'accent sur les protestations non violentes. Ensuite, les déterminants de la participation politique, principalement les protestations, ont été examinés. Les données montrent que le niveau d'engagement politique des populations européennes varie. Concernant la participation à une manifestation, activité populaire en France, c'est en Suède que les citoyens sont les plus actifs. Les anciens pays socialistes d'Europe centrale et orientale sont les moins impliqués dans la politique.

Les conclusions de cet article ont apporté une contribution substantielle à la compréhension de la participation aux manifestations pacifiques et de l'efficacité politique. La deuxième contribution de l'article a été d'étudier le lien entre la disparité économique, le capital social et les protestations pacifiques. La dernière contribution a été de proposer des recommandations politiques adaptées à la situation.

Implications politiques

Les politiques économiques peuvent atténuer les problèmes d'inégalité et garantir des résultats plus équitables. Combattre les inégalités de revenus tout en stimulant l'innovation s'est avéré plus crucial que prévu. En outre, le gouvernement peut influencer les résultats par la pré-distribution et la redistribution. Les politiques de pré-distribution interviennent directement sur les marchés du travail pour réduire les inégalités. En outre, les politiques de redistribution constituent un autre outil pour réduire les inégalités et promouvoir le développement économique.

Un enseignement de haute qualité

Heckman (2013) a plaidé pour un changement de politique en faveur d'interventions dans la petite enfance visant à améliorer les compétences cognitives et les traits non cognitifs comme la confiance et la détermination. Il a démontré que les interventions précoces avaient un impact économique et social positif considérablement plus important que les interventions ultérieures. Les résultats de cette étude suggèrent le rôle important que joue l'éducation dans la cause et la prévention du bien-être en matière de santé mentale. Les données sur le bien-être en matière de santé mentale suggèrent un lien positif avec le niveau d'éducation, des résultats similaires ont été rapportés pour l'obésité, la morbidité des maladies chroniques et aiguës (Woolf et al., 2007).

Élimination de la discrimination fondée sur le sexe

Kochhar et al. (2017) ont fait valoir que d'importantes inégalités entre les sexes persistent; les femmes ont moins de perspectives économiques que les hommes, les hommes ont tendance à travailler davantage dans la plupart des nations, et les femmes sont fréquemment moins payées pour un travail équivalent. En outre, ils ont identifié les conséquences macroéconomiques négatives de l'inégalité des sexes comme une

augmentation de l'inégalité des revenus et une diminution de la diversification économique. Les résultats de cette thèse suggèrent une association négative significative entre le fait d'être une femme et le fait d'avoir un bien-être mental moins bon. Bambra et Eikemo (2008) ont affirmé que cela était probablement dû au fait que les taux de remplacement des femmes étaient inférieurs à la moyenne. Ainsi, le rôle essentiel des décideurs politiques est de garantir l'égalité des sexes. Par exemple, l'accès à des services de garde d'enfants, peu coûteux et de qualité peut permettre aux femmes de libérer du temps pour le travail formel (Gong et al., 2010). D'autres politiques pourraient également inclure des modalités de travail flexibles et encourager les femmes à travailler dans les domaines des sciences et de l'ingénierie.

Système d'imposition progressif

Hacker et Pierson (2010) affirment que l'analyse de l'accroissement des inégalités doit accorder de l'importance à la politique fiscale. Les politiques fiscales progressives sont des politiques de redistribution qui imposent un taux de pourcentage plus élevé aux contribuables à revenu élevé. Il peut s'agir de taxes sur les intérêts des investissements et de crédits d'impôt. Les stratégies redistributives ont toujours été traditionnellement cantonnées aux statistiques sur le revenu. Toutefois, Piketty (2014) a plaidé en faveur d'un impôt sur la fortune, car il permettrait de collecter davantage de recettes que l'impôt sur le revenu.

Politiques de bien-être

Les politiques de la plupart des pays reposent sur le postulat qu'une économie en croissance conduit au bien-être. Pourtant, de nombreuses études ont apporté la preuve que des aspects autres que le PIB et la richesse ont un impact plus important sur le bien-être (Helliwell et al., 2018; Diener et al., 2009 ; Diener et Diener-McGavran, 2008 ; Ovaska et Takashima, 2006 ; Easterlin, 1974, 1995, 2001).

La Knight Foundation (2010) a étudié les caractéristiques qui lient les gens à leur communauté et l'importance de l'attachement communautaire dans la croissance économique d'une région. Ils ont observé un lien positif significatif entre l'attachement communautaire et la croissance économique. En outre, ils ont conclu que les difficultés économiques nationales n'avaient pas d'impact discernable sur l'attachement au niveau local, et que les villes présentant les niveaux d'attachement les plus élevés

avaient les taux de croissance du PIB les plus élevés. Ils ont identifié trois facteurs de bien-être pour les villes, l'offre sociale, l'ouverture et la beauté. Les conclusions de cet article suggèrent que le capital social, mesuré par la confiance, est substantiellement lié à une meilleure santé mentale et à l'engagement politique. Il est donc nécessaire de mettre en place des politiques qui améliorent les forces de la communauté, renforcent l'attachement à la communauté et augmentent la croissance économique locale.

Les réformes de zonage, la mise à disposition de parcs, d'œuvres d'art, de terrains de jeux et d'espaces verts sont autant d'exemples d'offre sociale. En outre, les politiques d'ouverture peuvent encourager les initiatives de sensibilisation, la promotion de l'inclusion et les lois qui criminalisent les préjugés. Enfin, les politiques de beauté peuvent encourager les constructions écologiques vertes et la préservation des sites historiques (Musikansi et. al, 2021).

Engagement civique

Le gouvernement peut promouvoir des politiques visant à motiver les élèves à apprendre leurs droits et responsabilités en tant que citoyens et à participer au développement de la société grâce à une éducation civique efficace dans les écoles. En outre, selon McFarland et Thomas (2006), la participation à des organisations de jeunesse bénévoles améliore l'activité politique ultérieure, ce qui a des conséquences sur les résultats des élections.

Limites de la recherche

Il convient de reconnaître que cette thèse présente certaines limites. L'une des principales limites de cette thèse est qu'elle s'appuie encore sue l'inégalité des revenus comme un indicateur du bien-être économique, comme beaucoup d'autres études. Cependant, des politiques gouvernementales spécifiques et des transferts intergénérationnels peuvent amplifier de manière significative les inégalités socioéconomiques, ce qui fait que les inégalités de richesse sont plus importantes que les inégalités de revenus. De nombreux chercheurs ont tenté d'identifier certains des principaux facteurs influençant les inégalités de richesse. Par exemple, alors que Piketty (2014) a soutenu que la richesse doit être taxée de manière plus importante, Gilens (2012) a démontré que les politiciens de son étude répondaient presque entièrement aux désirs des personnes économiquement favorisées.

Une autre limite de cette étude est la taille de l'échantillon. Bien que les échantillons comprennent plus de 30 pays européens, l'analyse serait améliorée si les données incluaient de nombreux pays du monde entier, y compris des économies à haut revenu, à faible revenu et en transition.

Une autre limite de cette étude transversale est qu'elle n'a pas tenu compte d'un décalage dans le temps pendant lequel l'inégalité des revenus a eu un impact sur la perception de la position socio-économique et de la santé des personnes. Par exemple, Blakely et al. (2000) ont suggéré que l'inégalité des revenus mesurée il y a 15 ans était plus fortement liée à la santé autodéclarée que l'inégalité des revenus récente.

Étude future

Les recherches futures devraient explorer l'influence des inégalités de richesse sur un large éventail de résultats. Bien qu'il y ait eu un intérêt croissant pour les sujets liés à l'inégalité dans les études économiques et politiques, des recherches supplémentaires sont nécessaires. Par exemple, Adler et Ansell (2019) ont étudié le lien entre les inégalités de richesse et la montée du sentiment populiste au Royaume-Uni et en France. Ils ont conclu que la localisation de l'inégalité de richesse fournissait une explication convaincante du modèle de vote populiste. En outre, Gyongyosi et Verner (2021) ont fourni des preuves d'un lien positif entre la détresse des débiteurs et le soutien à l'extrême droite populiste en Hongrie. Par conséquent, les études futures gagneraient à inclure davantage de pays dans l'analyse et à examiner la relation entre l'inégalité de richesse et le sentiment populiste à travers l'Europe.

Les recherches futures pourraient également inclure des méthodes de recherche plus robustes pour analyser la mesure dans laquelle les inégalités de richesse ont un impact sur la santé mentale. Des études longitudinales incluant de nombreux pays du monde entier pourraient le permettre. L'inclusion de décalages temporels dans l'analyse permettra d'obtenir une vision plus précise du lien entre l'inégalité économique et la santé mentale.