Support for Sale?

''A quantitative study into the relation between support for the European Union and being a direct net- contributor to or beneficiary of the European funds''

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Abstract

This study investigates the relation between support for the European Union and funding on a regional (NUTS-2) scalar level. Previous research has been limited by investigating this relation on a national scalar level, or based solely on data from the Cohesion Fund. Therefore this study tries to contribute to this body of literature by including the five biggest funds and compare support on a regional scalar level. Support for a governmental institution is crucial to be able to effectively govern. By studying support, this study helps determine whether or not funding could be of importance to increase the support towards, and thus the effectiveness of, the European Union. This study is based on data provided by the European Commission, European Social Survey, Eurostat and results from national elections. To generate results all 281 NUTS-2 regions have been divided in two categories: net-beneficiary or net-contributor to the European Funds. Based on the performed tests, the following conclusions can be drawn: First, support is heavily influenced by the economic state of the country or region. This results in a situation where a region that is economically doing well, is more likely to support the European Union. Second, quality of government is important for determining the effectiveness of the funding money received in a region. Therefore, regions with higher quality of government are more likely to support the European Union than regions with lesser functioning local governments. Third, after correcting for the economical state of the region and the quality of government, the relative amount of funding does influence support. Where the higher the amount of funding that is relatively transferred towards a region, the higher the support for the European Union in that region will be. Lastly, when looking at voting behaviour, people tend to vote opposite of their own economic interests.

Keywords: European Union, Support, European funding, Voting behaviour, Quality of government, Regional analysis

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1. Introduction

a. Background

On the 23rd of June in 2016, the United Kingdom held a referendum on whether or not to stay within the European Union. A total of 51,9% of the people voted for leave. The share of leave votes was highest in England and Wales. Within these countries there were many regions with a high share of leave votes while simultaneously these regions received a relatively high share of the European funding money transferred towards the UK (Huggins, 2018). Based on this situation, it would seem that people vote against their own economic interest (regarding the economic support they receive from the EU). Which could suggest a negative relation between European funding and European support. This observation has sparked academic interest. New studies emerged focussing on the political dissatisfaction many people in Europe have displayed. One study that focused on the UK, researching the distribution of leave votes and European funding money, found no significant relation between the two. Meaning that regions that received significantly more or less funds did not vote significantly different from each other (Huggins, 2018). Other studies had a more general, geography wise, approach. These studies were based on all, or multiple, European member states and tried to identify the source of support (or lack thereof) (Bélanger, 2017; Stockemer, 2017; Henceroth & Oganesyan, 2019; Dijkstra et al., 2020). These studies investigating support towards the European Union, mainly did so by researching support for further European integration (Hobolt & de Vries, 2016). Thus studying whether or not the people of Europe wish for a more intertwined and connected Europe.

To broaden on this already existing body of literature, this research will look into the support expressed by all NUTS2 regions within all the member states of the European Union. While most of the already existing studies have focussed on the national scalar level, this study will be specified on a regional scalar level. Support will then be studied with regards to funding and the ratio between the funding directly received and money paid to the EU. Besides attributing to the academic literature on this topic, there is also a societal relevance to this research. Support, expressed by people, for a governmental institution is crucial to be able to effectively govern these people (Newton et al., 2018). By studying support, this research helps determine whether or not funding could be of importance to increase this support and thus the effectiveness of the European Union.

Previous research that did focus on a more regional level of support for the EU, often did this with data from solely European elections or with data from only the Cohesion Fund. This research will combine and expand on these methods by using both voting behaviour and the five biggest European funds (which includes the cohesion fund). With the combination of the two data sources it is possible to create a clearer image of the situation on a regional level. Expected is that a positive relation between support for the European Union and the amount of fund money a region receives will be found. Meaning that the more money a region receives, the higher the support for the EU will be.

The European funds have multiple objectives, these budgets are to enhance economic, social and territorial cohesion while also increase solidarity within and among EU countries (European Union, 2020). This research will look into the distribution of these European funds across NUTS-2 areas and the support that these areas then show for the European Union. With these different funds, The European Union trying to compensate the economical weaker areas within the Union (Chalmers & Dellmuth, 2015). More specifically, reducing regional inequalities, support job creation, enhance the economic well-being of European regions and as an expression of solidarity (Gross & Debus, 2018). Previous research on the distribution of the money within these funds found that in the earlier periods of the European Union, it was not so much the need, but the political power that determined the amount of funds that were allocated to a country (Kauppi & Widgrén, 2004). However, more recent research in this topic (with new and improved research methods) by (Zaporozhets et al., 2016) found that political power is not the main explanation for fund allocation anymore. It is indeed the economical weaker areas that are granted the largest shares of the funds to help their economies converge towards the higher European standard.

b. Research problem

This study will look into the relation between support and funding. The main research question goes as follows: ''How does the support a European NUTS-2 region expresses for the European Union relate to the amount of money that region directly pays and receives to and from the European funds?'' To be able to formulate a clear answer to this research problem, more general information regarding support and funding is necessary.

First an overview of all European NUTS-2 regions and whether they are net- payers or beneficiaries to the EU budget needs to be created. This will help to later compare regions and draw conclusions from the fact that they are net-contributors or beneficiaries to the European funds. Because within this study support will be measured in two different ways (a variable for support together with voting behaviour), the relation between these two approaches will be examined. Support for the European Union and its policies regarding allocation of fund money has been related to each other by Henceroth & Oganesyan (2019). They proved that, on a national level, people voted more in favour of the European Union when they felt their country benefited from the European Funds allocated towards them. Which does not necessarily relate to the actual amount of funding received. Economically benefitting from the European Funds however is a key indicator for European support. As Dellmuth & Chalmers (2017) state that support for the EU could be brought back to a simple a cost-benefit analysis the people make. Therefore, when people do or do not experience benefits from the European Funds, they will hold the governments (national and European) responsible. Resulting in a supporting vote when content, and a challenging vote when discontent (Marsh & Tilley, 2010; Bélanger, 2017). Lastly, to be able to investigate the relation between support and funding, the effectiveness of the funding needs to be taken into account. Effectiveness of funding determines whether people will experience that they benefit from it. To measure effectiveness, the quality of the regional government will be included. The presence of a strong local government determines the effect or success the funds have in the region it was allocated. The effect of the allocated money is determined by the economic returns each euro that is invested generates. This success depends on the quality of the government and institutions working with it. The higher the quality, and thus the effect the funding generates in a region, the higher the support towards the distributor of these funds, the EU, will be (Rodriguez-Posé & Stroper, 2006; Rodriguez-Posé & Garcilazo, 2015).

The before mentioned aspects will be included in the research by the following three sub questions: ''Which regions are net-beneficiaries of the funds and which are net-contributors?'' ''How does voting behaviour relate to support for the EU?'' and ''How does the quality of government influence support for the EU?'' To answer all research questions, data from the European Social Survey, Eurostat, Quality of Government index from the University of Gothenburg and data from the European Commission will be used.

c. Structure

The following section in this paper will contain the theoretical framework. Here the main concepts of this research, being a net- contributor or beneficiary, voting behaviour in the European Union and support towards the European Union will be explained. Then in the methodology the way of data collection and usage will be described. This section will also explain how support will be measured and interpreted. Hereafter the results will be presented with the use of different maps and statistics. In order of mentioning, the sub questions and main research question will be answered. Based in these results, the final conclusion will be drawn. This paper will conclude with a discussion where the results will be examined in relation to the hypotheses, and where the added value of the research will be reviewed.

2. Theoretical Framework

Hobolt & de Vries (2016) explained in their study on support and dissatisfaction for the EU that these sentiments can be explained from two different perspectives. The economic perspective and the identity perspective. Although the influence of the identity perspective, and thus the cultural aspect of support, should not be overlooked, this study will focus on the economic perspective. It investigates the relation between support for the European Union and the amount of funding a region received from the European Union, and is therefore economical. To examine this, a thorough understanding of the concept support, and its relation with funding, has to be developed.

a. European support

Measuring support for the European Union is difficult. It is a multidimensional variable which can be measured in many different ways. However, all these measurements could never fully comprehend everything that support contains. Therefore multiple sources, all containing different aspects of the concept, should be brought together to create a valid concept of support. One aspect linked to support is trust. Specifically trust in the European Parliament. Political trust has been linked to support for government policies by Marien & Hooghe (2011). They found (on a national scalar level) that when someone shows higher trust for the government, they are more likely to support the government ideas and policy proposals. Another political aspect linked to support is the influence one can apply on the political agenda and politics in general. Influence on the political agenda has been proven to be important by Ulbig (2008). When people are able to address certain issues important to them, which governments then actively start working on, will positively influence their trust (and thus support) in that government. However, when people are able to address these issues and then feel like the government does not improve anything on the subject, it negatively influences their trust and support for that government.

Besides using different political aspects that relate to support in a certain way, voting can be related directly to support. This link between voting and support has been subject in several studies. Voting has often been related to levels of support regarding the functioning of a government (Marsh & Tilley, 2010; Hooghe & Zmerli, 2011; Marien, 2011; Bélanger, 2017; Dellmuth & Chalmers, 2018; Gross & Debus, 2018; Henceroth & Oganesyan, 2019; Schraff, 2019). When voting, people cast a value judgement to the government. People that support what a government is doing will vote in favour, while people who do not support and agree with the policies could cast an anti-establishment vote.

Within the EU, people get to vote for several governmental institutions on local, national and European level. The European Union consist out of three political bodies for which only the European Parliament can be voted for directly by European citizens during European elections. These elections are held once every five years (European Parliament, 2020). Within the European Parliament, parliamentarians are part of a political group. These political groups are distinguished by political affiliation. However, voters do not vote for a political group directly. National parties compete within the European elections and then declare their support to a political group with ideas equivalent to theirs. On average, the turnout for European elections is 30% lower than for national elections (Franklin & Hobolt, 2011). This low voter turnout has often been related to low political trust and dissatisfaction with the political system and politicians themselves (Hadjar & Beck, 2010). For the European parliament elections specifically, people tend to view them as second-order elections, thus giving them an unimportant feeling (Hobolt & Spoon, 2012).

Because regional data on the European Parliament elections is not available, for this study regional data on national elections will be used. Since national parties compete for the European Parliament, it is assumed results will not differ greatly. Within national governments, political parties express ideas about the European Union. These parties are, simply put, either opposed or not opposed towards further (economic) integration of the EU. Parties that are opposed towards the European Union are, in general, less successful in countries that received a large share of the European funds (Nicoli, 2017). This suggests that countries that receive more money from the European Union, support the Union more.

However, in the same year, a research by Stockemer (2017) showed that strikingly the economical weaker areas had the most critique on the European Union.

b. European support and funding

Next to support, the other main concept within this study is European funding. European funds are organized in time-spans of 7 years by the European Commission (European Union, 2020). Within this long-term budget the restrictions and availabilities of European money are regulated for each year within this time-span. The European Union has several funds with which money is distributed among the member states. Most important funds are; ERDF (European Regional Development Fund), EAFRD (European Agricultural Fund for Rural Development) and ESF (European Social Fund). For the budget period 2014-2020, ERDF makes up 43,3% of the total budget, EAFRD 23,4% and ESF 18,8% of the total budget (European Union, 2020). These funds are distributed over the different European regions to try to compensate the economical weaker areas within the Union (Chalmers & Dellmuth, 2015). Distributing this money across the regions, could influence the support coming from these regions. As Dellmuth & Chalmers (2017) argue that support could be broken down to a cost-benefit analysis an individual makes about the EU. When an individual feels they economically gain from being part of the European Union, he or she will support the EU. Does an individual feel they economically lose from being part of the European Union, he or she will not support the EU (Dellmuth & Chalmers, 2017). Within this research economically gaining form the European membership is considered as being a direct net-beneficiary of the European funds. Losing economically from a European membership is considered as being a direct net-contributor to the European funds. In reality however, support is a way more complex concept than just a cost-benefit analysis. The following sections will further explain the concept of support and its relation with different factors.

c. European support and effectiveness

One of the variables that make the relation between funding and support complex, is the effectiveness of the allocated money. With a budget of around 140 billion euros annually, the European Union has tremendous resources to help regions economically. However, the money then needs to be invested properly and effectively to generate and increase support for the EU. Research conducted in Uruguay (South-America) proves that households financially benefitting from an anti-poverty cash program show higher levels of support towards the providing governmental institution (Manacorda et al., 2015). The increasing support was due to the higher living standards these people could obtain because of the program. Rodriguez-Posé & Garcilazo (2015) also discovered such a relation for the European Union. They found that effective funding would lead to economic growth and more economic opportunities, which then causes a more widespread support for the European Union (Rodriguez-Posé & Garcilazo, 2015). Currently an increasing share of the European money is allocated towards regions that lack behind to decrease the differences between European regions (Becker et al., 2012). These investments have shown to be effective in diminishing these economic differences (Becker et al., 2010; Pellegrini et al., 2013; Rodriguez-Pose & Novak, 2013; Dall'Erba & Fang, 2017).

Effective funding will generate higher economic returns for each euro invested. Higher quality governments have proven they are better able to generate these higher returns (Rodriguez-Posé & Di Cataldo, 2015). Thus, the higher the quality of national and regional government, the less corruption and the more autonomy on decision making, the bigger the effect generated by funding is in that region (Becker et al., 2012; Rodrígues-Pose & Garcilazo, 2015; Incaltarau et al., 2020). Therefore, the higher the quality of government, the greater the effects of funding will be. Thus resulting in higher levels of support for the European Union.

d. European support and other variables

Besides the already mentioned factors that could influence support for the EU; funding and quality of government, more general factors (could) play a role in the level of support someone expresses for the European Union. These factors are; gender age, education, income, economic state of the country, satisfaction with life in general and risk of poverty and/or social exclusion.

Age, specifically older age, has been related to anti-establishment voting (Goodwin & Health, 2016; Hobolt & de Vries, 2016; Dijkstra et al., 2020). Education is also an important factor in determining ones political views, the lower the education, the higher the chances are someone is anti-European (Hobolt & de Vries, 2016; Becker et al., 2017; Dijkstra et al., 2020). Related to education is income, and in line with income is employment. People with lower income, or who are unemployed, are more likely to be Eurosceptic about further European integration (Goodwin & Health, 2016; Hobolt & de Vries; Becker et al., 2017; Dijkstra et al., 2020). Furthermore, the economic opportunities a country experiences has again an impact on the European satisfaction people express. The lower these country-wide economic opportunities are, the higher the chance that people will vote anti-European (Goodwin & Health, 2016; Becker et al., 2017; Dijkstra et al., 2020). Finally, the relation between political support and risk of poverty and/or social exclusion has been a heavily studied field. As mentioned in the section about voting behaviour, a research by Stockemer (2017) showed that economical weaker areas had the most critique on the European Union. These results are in line with research done by Rodriguéz-Pose (2018) who claims that regions with fewer economic opportunities and prospects have been expressing their dissatisfaction by voting more populistic and anti-establishment.

e. Previous research

This research investigates the support for the European Union on a regional level. The divergence between regional economies (also within countries) has become a risk for economic progress and political stability in Europe (Iammarino et al., 2017). Therefore European regional studies are becoming increasingly relevant since it has become one of the Union's pillars to decrease the regional economic differences within the Union.

To make sure this divergence between regions will not grow even further, the European Cohesion Policy was introduced. This fund has been initiated to economically strengthen the weakest European regions and now makes up to approximately 30% of the European budget (Gross & Debut, 2018). As mentioned, the purpose of this fund is to decline regional differences by job creation and enhancing the well-being economically. But most importantly, the EU sees it as an expression of solidarity (Mendez & Bachtler, 2016; Gross & Debus, 2018). Quite some research has been done on the relation between these funds and the support for the European Union. Most of these researchers however focused on the national scalar level (Appendix 1). Nevertheless, there has also been some research on a more regional level.

A study by Gross & Debus (2018) focussed on local political parties in the Netherlands, UK, Spain and Germany. The focus on those local parties is because governing local parties are directly involved in the processes of allocating the money from the European (Cohesion) Funds. Their involvement mainly includes deciding which objectives could be eligible for funding and then pursuing those (Dettmer & Sauer, 2016; Mendez & Bachtler, 2016; Gross & Debus, 2018). Besides deciding which objectives are eligible, local governments also lead bargaining processes to acquire as large as possible shares from the funds (Dettmer & Sauer, 2016; Gross & Debus, 2018). When a region then receives money from the Cohesion Funds (and is aware of the money's source), this region's support for the European Union will increase (Gross & Debus, 2018). On a national scalar level Chalmers & Demuth (2017) also find that countries that are net-beneficiaries of the European budget show higher support rates for the European Union. In line with these findings, Gross & Debus (2018) find that that the support from political parties for the European Union increases when more money from the Cohesion Fund is allocated to that region. Interestingly, when during a next budget period less money is allocated towards that certain region, political parties do not directly become less supportive of European policies (Gross & Debus, 2018).

Money thus seems to influence the public support for the European Union, but research by Gross & Debus (2018) does not find this relation with European identity. Other studies do find that individuals identification with the European Union is an important driver for European political support (Hooghe, 2005; Borz et al., 2018). However, studies also point out that identification with the EU is then not related to the amount of funding a region receives (Verhaegen et al., 2014; Borz et al., 2018). Nevertheless, economic aspects are still important in terms of identification with the EU. Verhaegen et al. (2014) and Borz et al. (2018) both find evidence that doing economically well, increases the chance of identifying with the European Union.

Where these studies all focused solely on the European Social Fund, this research will take into account the five biggest European funds that distribute money among the member states. This makes it possible to create a more nuanced picture of the distribution of European money and is thus more suited to study its relation with European support.

f. Conceptual model

The previous sections have elaborated on the different concepts that (could) influence support, here the main concepts will be combined into a model (Figure. 1) presenting the design of this research. These main concepts include funding, quality of government (effectiveness) and voting behaviour. As the model shows, this study investigates the relation between support for the European Union and the annual received money from the European funds. The former will function as the main dependent variable and the latter as most important independent variable.
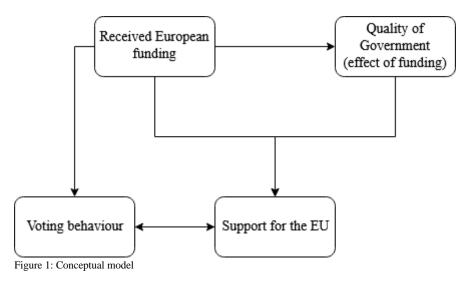

Figure 1: Conceptual model

Figure 1 shows the conceptual model for this research. The left top corner contains the main independent variable ''received European funding money.'' With this variable the effect of funding on support for the EU will be determined. However, the variable also influences the effect of funding, measured by quality of government. Quality of government itself also influences support for the EU.

Another part of this model is voting behaviour. Henceroth & Oganesyan (2019) and Nicoli (2017) have proven in their studies that voting behaviour relates to the amount of funding money received. Where regions that receive more money, are more likely to vote for pro-European parties. On the other hand has voting behaviour often been related to support for a government (Marsh & Tilley, 2010; Hooghe & Zmerli, 2011; Marien, 2011; Bélanger, 2017; Dellmuth & Chalmers, 2018; Gross & Debus, 2018; Henceroth & Oganesyan, 2019; Schraff, 2019). Lastly, because not all European regions have the data to create the variable for support, this research will also use voting behaviour as a second dependent variable measuring support.

g. Hypothesis

The relations between the different concepts as showed in figure 1 could be positive or negative. Based on the available literature, the relation between support for the European Union and money received from the European funds is expected to be positive. Meaning that the more money a region receives from the EU, the higher the support for the European Union will be within that region. Other relations that will be studied, such as voting behaviour and support as well as quality of government and support, are also expected to show positive relations. A negative relation is expected for the relation between funding and quality of government.

3. Methodology

This chapter describes the approach of the research. It introduces the actions performed to properly execute the statistical tests needed to answer the research questions. Then explains the reasons for the different regressions that will be used to generate results. Thereafter follows a justification on how the different variables have been composed and conducted.

a. *Included data and statistical tests*

Within this research the relation between support for the European Union (dependent variable) on the one side, and funding (independent variable) on the other will be studied quantitatively. Besides funding as independent variable, quality of government and corruption levels (effectiveness) will also function as main explanatory variables. Additionally the control variables will consist out of gender, age, education level, feeling of happiness, economic state of the country, satisfaction with life in general and risk of poverty and/or social exclusion. Because this study tries to generate an overview of the relation between support and funding, a regional component is needed. Regional differentiation can be applied on different scalar levels. For this study is chosen to use the NUTS-2 regional level while data on the distribution of funding amongst the regions is by the European Commission applied on this scalar level from the nomenclature. Therefore all data is, as much as possible, divided into the 281 NUTS-2 regions of the EU. However, not all data is available on the NUTS 2 scalar level for all relevant regions. Therefore some variables vary for different member states, meaning that some variables are at the same time on NUTS 1 level and NUTS 2 level. The data this study is based on is secondary data and accounts 45.222 observations provided by different organizations; European Social Survey, European Commission, Eurostat and a quality of government index by the University of Gothenburg. With this data both variables measuring support for the European Union will be generated.

Support, the dependent variable, will be measured in two different ways. Firstly, support will be measured with the use of an proxy variable. This proxy variable will consist out of data from three different variables being; trust in the European Parliament, level of influence one has on the political agenda, and level of influence on politics. Secondly, voting behaviour will function as measurement for support for the European Union. Both variables are ordinally distributed and consist of respectively 10 and 3 different categories. For both measurements of support applies that the higher the category, the greater the support expressed. Because both the proxy variable and the voting behaviour variable are used to measure support, a correlation between the two will be executed. By doing this it will be clear how to compare and interpret these variables to one another in regards to the different statistical tests where they will function as dependent variable. Therefore, since both variables are ordinal, a Spearman rho will be used to determine the correlation between them.

To generate an answer to the question whether support for the EU depends on funding, two different statistical tests will be executed, one for each depending variable. First, for the proxy variable (EUsupport) an ordinal logistic regression will be executed. The ordinal logistic regression will be performed multiple times with different combinations of independent variables. This ensures that the explanatory value of each variable will become visible. Significance will be assumed by a P value smaller than 0,05. The second dependent variable on voting behaviour (votingsupport), will be used in a multinominal logistic regression. Because this variable consists out of three categories, a multinominal regression provides the opportunity to compare these three groups to one another. The three categories are strongly opposed, moderately opposed and not opposed towards the European Union. The first two categories will be compared to the last within this model. The following section will explain how the variables are composed and used.

b. *Composing European support*

Because support is a complex concept, it cannot be captured in one variable using one single form of data. Rather multiple data sources all containing different aspects of the concept should be brought
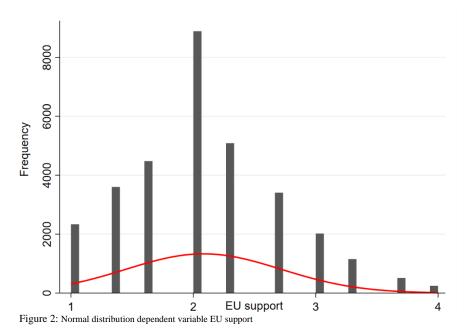
together to create a valid concept of support. Therefore it is needed to conduct as much data as possible regarding support to construct the variable support. Within this study, this results in two different ways of measuring support for the EU.

The first method for measuring European support will be by generating a proxy variable. As explained before, the variable support for the European Union is composed out of; trust in European Parliament, level of influence one has on the political agenda, and level of influence on politics. Data on these elements come from the European Social Survey for the year 2014 (European Social Survey, 2014). These variables show a moderate positive correlation to each other (Table 1).

Table 1: Correlation between components of dependent variable

	Influence on agenda	**Influence on politics**	**Trust EP**
Influence on agenda	1.0000		
Influence on politics	0.6704	1.0000	
Trust EP	0.3565	0.3610	1.0000

These three individual variables, influence on agenda, influence on politics and trust in European Parliament, are all divided into eleven categories ranging from no influence/trust at all (0), to complete influence or trust (10). To generate the variable support for the EU, these variables will be combined and then divided by 3 to generate an average score. This would generate a total of 31 different categories for support where the category with the least cases would only contain a total of eleven cases. Therefore, before creating the dependent variable, the number of categories within these three separate variables is brought back to 4. These new categories are composed as follows; category 1 consists out of values 0 & 1, category 2 consists out of values 2 till 5, category 3 consists out of values 6 & 7 and category 4 consists out of values 8 till 10. These variables are then combined and divided by 3 to generate the variable ''support for the European Union.'' This new variable then consists out of 10 categories varying from 1 till 4 in steps of 0.333. Within this new variable the category with the least amount of cases, category 4, still contains 246 individual cases. All composing variables add equally to the variable support for the EU generating the following normal distribution (Fig. 2).

Figure 2: Normal distribution dependent variable EU support

c. Composing voting behaviour (as votingsupport)

The variable EUsupport includes data for a total of 18 European countries (Appendix 2). To broaden on this data and to create a more complete image of support for the European Union, the variable voting behaviour is used. This variable contains data on voting behaviour from all 27 European member states. Besides, with the inclusion of voting behaviour as a measure for support a control mechanism is created. This mechanism can compare, measure and place into perspective the effect of the different independent variables within the different regressions. Furthermore has voting behaviour, as mentioned before, often

been linked to trust and support for governments (Marsh & Tilley, 2010; Hooghe & Zmerli, 2011; Marien, 2011; Bélanger, 2017; Dellmuth & Chalmers, 2018; Gross & Debus, 2018; Henceroth & Oganesyan, 2019; Schraff, 2019). The data that composes the variable voting behaviour comes from the European Social Survey, round 7 (ESS, 2014). Data on national election results for 27 countries within the Union (still including the UK) will be used (the national elections taken into account by the ESS were the most recent elections before/in 2014). The parties that have been voted for within these countries are placed into three different categories; strongly opposed, somewhat opposed and not opposed towards the European Union. This categorisation of the national parties is based on the research by Dijkstra et al. (2020) who used the Chapel Hill Expert Survey* to determine the position of national political parties towards the EU. They developed a scoring system for all competing parties in national elections regarding their attitude towards the European Union. After distributing all votes over the three different categories, the votes were divided as follows (Table 2).

Table 2: Voting behaviour

Level of support (by voting)	Absolute amount of votes	Share in votes	Share votes without missing	Value
Not opposed	23.708	52,43%	89,46%	3
Moderately opposed	1.227	2,71%	4,63%	2
Strongly opposed	1.566	3,46%	5,91%	1
Missing	18.721	41,40%		X

As is shown in the table, the value labels applied to the different categories are decreasing. This ensures a similar structure as for EUsupport, where higher values mean higher levels of support. The share of votes per category differs quite from the distribution by Dijkstra et al. (2020). Their distribution among the categories is as follows; for moderately opposed 8%, for strongly opposed 14% and then not opposed 78%. So for both categories of opposed to the European Union their dataset has a higher share. This difference could be explained by the high share of missing data in the dataset used for this research. Nevertheless, the data by the European Social Survey will be used, since it allows to compare between the two ways of measuring. Because both variables are built up based on data provided by the same group of people for every NUTS-2 region, there is no bias or other noise that makes the interpretation more complicated.

As mentioned, the table shows a vast amount of missing cases (41,4%). Instead of using available election results, respondents in the survey were asked individually which party they voted for during the last election. With this question, they had the opportunity to not answer that question, which has led to a vast amount of missing values. These cases will be eliminated from the regression leaving a remainder of 26.501 cases. This could lead to altered results compared to studies where the total share of votes is taken form national or regional election results. The reason this study does work with this data is because it allows to compare both the variables that measure support. The missing values in the dataset where people who did not answer the question which party they voted for in the last election. The group of people generating this missing data did however differ significantly in certain aspects from those who did answer. On average, the people that did not vote or did not answer the question about voting where less satisfied with their life and economic state of the country. They where less happy and lower educated (Appendix 3). The characteristics of this group match, based on the available literature, with a group that is more likely to cast anti-establishment votes (Hobolt & de Vries, Goodwin & Health, 2016; 2016; Becker et al., 2017; Dijkstra et al., 2020). When interpreting the results from this variable, these aspects need to be taken into account.

The variable votingsupport is based on the elections for national governments and thus based and dependent on the national political systems of each European member state. That makes this (support by voting) variable different from the other dependent variable EUsupport. To create the main variable support for the EU, all respondent were given the same questions and answers. With national voting, voters from different member states have different voting options. For example, in Spain there are no national political parties with an Eurosceptic program. Therefore, voters in Spain cannot, if they would have wanted, vote for parties that are opposed to the EU. This results in a situation where the variable

votingsupport shows an image of Spain where there is no region opposed towards the EU, while at the same time EUsupport shows that there are certainly people in Spain who do not support the European Union. When interpreting the results generated by the variable votingsupport, this bias towards not opposed to the European Union needs to be taken into account.

To correct for these biases, an expanded version of the variable votingsupport is developed to control for differences in results. Within this variable the distribution among the three categories has been altered in a way that represents the division of seats in the European Parliament (Table 3) by multiplying moderately opposed by two and strongly opposed by three. This alteration now matches the distribution of votes that was used by Dijkstra et al. (2020) to study the support expressed by the different geographical regions of the European Union.

Table 3: Expanded variable votingsupport

Level of support (expanded)	Absolute amount of votes	Share in votes	Value
Not opposed	23.708	76,82%	3
Moderately opposed	2.454	7,95%	2
Strongly opposed	4.698	15,22%	1

d. Composing European funding

The variable funding will be applied on a NUTS-2 scalar level when possible. Some countries only had data on a NUTS-3 level. For these regions, the data has been combined to be able to compare NUTS-2 regions. Data for regional funding comes from the European Commission and is based on the funds distributed in the year 2015.

The European Union has an annual budget with which it is able to support countries, regions and sectors that the European Union deems important to invest in (European Commission, 2020). This budget is mostly financed by the contributions member states pay to the Union. Every member state transfers a certain percentage of its GDP over to the EU. Therefore, countries with higher GDP pay, in absolute terms, more to the Union than countries with lower GDP. When this budget is then allocated and distributed among the different member states, some have received more directly than they paid (net beneficiaries) and some have paid more than they directly received (net contributors).

To determine the contribution to the EU of a NUTS region, for this research the regional domestic product of these regions will be used. Determining the received money is done with data form the European Commission. They provide data on allocation of fund money nationally and per NUTS-2 region (European Commission, 2020). This will be used to determine the total of benefits certain regions receive from the EU. To be able to equally compare the different European regions, the data on regional fund transfers is then made relative. This is done by dividing it through the region's GDP and multiply it with 100. By dividing the received funding with that regions GDP, it corrects for population differences. This makes the smallest ratio 0,0015 and the biggest 11,5979 (Fig. 3). Meaning that for the first, funding from the EU equals 0,0015% of the regional domestic product, for the latter this is 11,6%. On average, 2,4% of the regional domestic product for European regions comes from the European funds. By making these numbers relative, they can be compared and used in the regression. Regions that have an outcome below 1 are then considered to be net-contributors to the EU budget. Regions with a ratio outcome bigger than 1 are considered to be net-beneficiaries. For this research, 38,6% of the cases is from a net-contributor region, 61,4% form a net-contributor region.

e. Composing quality of government

Data on quality of government comes from Charron et al. (2015). With the University of Gothenburg they created an index to determine the quality of government. This index is based on a widely carried out citizen survey in which respondents answered questions on their perceptions and experiences with corruption in the public sector and their believes in the quality of various public institutions (Charron et

al., 2015). This data is provided on a NUTS 1 or 2 level depending on the country. When data is only available on NUTS-1 level, all NUTS-2 regions within that specific region get the same score on quality of government. This results in a score per region on the quality of government. Since it is an index, values can vary between 0 and 100, 0 being the lowest quality of government and 100 the highest. Besides quality of government, corruption will also be taken into account. This variable is also an index and therefore the values can again vary between 0 and 100. Here, 0 means the highest amount of corruption in a region, a value of 100 the least.

f. Control variables

The following variables will be used within this study to control for possible other relations between the dependent and main independent variables; gender, age, education level, risk of poverty and social exclusion, feeling of happiness, satisfaction with life in general and lastly satisfaction with economic

	Lowest value	Label	Highest value	Label	Mean	Label
Gender	1	Male	2	Female	1,54	
Age	14		114		49,6	
Education	1	Completed primary school	5	Completed university	3,2	Completed high school
Risk of poverty/ social exclusion	0,096		0,556		0,224	
Happiness	0	Extremely unhappy	10	Extremely happy	7,02	
Satisfaction economy of country	0	Extremely dissatisfied	10	Extremely satisfied	4,02	
Satisfaction life	0	Extremely dissatisfied	10	Extremely satisfied	6,73	

state of the country. Table 4 shows the values associated with each of these variables together with the interpretation.

Table 4: Control variables values and interpretation

Except for the variable risk of poverty/social exclusion, all these control variables are measured case specific. Risk of poverty/social exclusion is measured on a regional scale. A value of 0,096 means that 9,6% of the population for that region has a risk of living in poverty or social exclusion. The variables happiness, satisfaction with life in general and satisfaction with economic state of the country have within the regression been brought back to 5 categories. This has been done to improve the readability of the output generated. To generate a somewhat normal distribution of cases among these variables, the following alterations have been made for all three variables. The first 4 categories consists out of 2 initial values, for example category 1 consists out of values 0 & 1. The last and 5th category combines the values 8 till 10.

4. Results

This chapter will discuss the results from the different regressions. The data will be presented in both maps and tables showing data on support, funding, quality of government and controlling variables. First the relations between the main dependent and independent variables are shown within different maps. Then a general description of the data and its explaining value is presented. Lastly the results from the ordinal and multinominal logistic regressions are presented and interpreted.

a. Net- beneficiary and contributing regions

To determine the effect of funding on support, this section will subdivide, as accurately as possible, all 281 European NUTS 2 regions according to the ratio of money contributed and received. Figure 3 shows an overview of net beneficiary and -contributing regions.
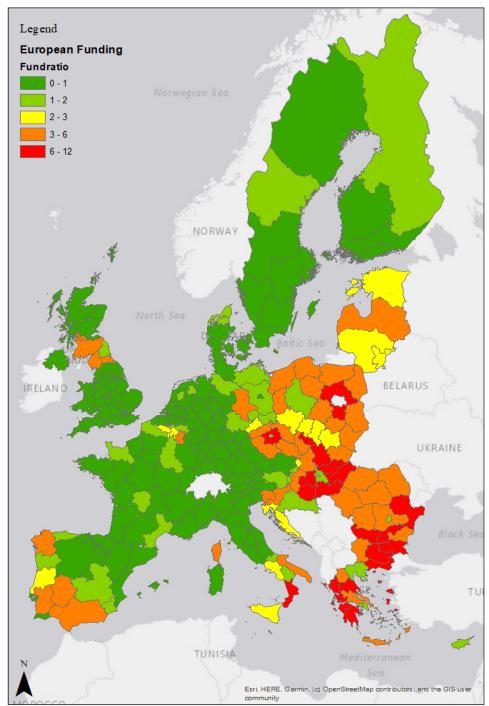
Figure 3: Map of net- beneficiary and contributing regions

All dark green regions on the map score lower than 1 on the fundratio-scale, meaning that those regions are direct net contributors to the EU budget. In total there are 149 net-contributing regions in the European Union. The region that relatively contributes the most to the budget is Bremen (Germany) with a score on the fundratio of 0,0015. Regions scoring a 1 or higher are net beneficiaries of the funds. A total of 132 regions classify as net-benefitting regions. The figure shows that the Eastern and Baltic European countries together with the Southern Mediterranean regions are the largest direct beneficiaries of the EU budget. Észak-Alföld (Hungary) is, with a score of 11,5979 on the fundratio, relatively the biggest net-beneficiary of the EU funds. Within the map the effect cities have on the fundratio is visible within the Eastern European countries. Prague in the Czech Republic, Budapest in Hungary, Bucharest in Romania, Athens and Thessaloniki in Greece and to a lesser extent Berlin in Germany and Lisbon in Portugal. These regions all show lower scores on this ratio scale than the more rural NUTS-2 regions surrounding them. Part of the explanation can be found in the way of calculating the ratio. Predominantly

urban regions will receive less to no money from the Agricultural funds, which still makes up to a quarter of the total European budget. Furthermore, city regions are known to be the engines of the economy, creating, on average, more added value to the gross domestic product per person (Gagliardi & Percoco, 2017). This will affect the ratio between incoming funding and the regional domestic product, making urban regions more likely to be net-contributor to the European Funds.

b. *Voting behaviour and support*

Table 5 shows the relation between voting behaviour and support for the European Union. Based on 19.823 remaining observations after excluding all missing data, the test shows that both variables are not independent from one another (P(t) 0,0000). This confirms what has been implied by different studies that support and voting behaviour are related (Marsh & Tilley, 2010; Hooghe & Zmerli, 2011; Marien, 2011; Bélanger, 2017; Dellmuth & Chalmers, 2018; Gross & Debus, 2018; Henceroth & Oganesyan, 2019; Schraff, 2019). The relation is a positive relation, the higher the level of one's support for the EU the more likely that one votes pro EU and vice versa. However, this relation is quite weak with Spearman's rho being 0,090.

Table 5: Frequency table showing support by voting & proxy variable

	Voting support		
EU support	1	2	3
1	156	60	857
1,333	148	117	1586
1,667	226	132	2274
2	392	293	5005
2,33	159	167	3009
2,667	108	128	2112
3	47	64	1377
3,333	23	38	778
3,667	13	10	357
4	5	5	177

Number of observations:	19.823
Spearman's rho:	0,0900
P(t):	0,0000

Figures 4, 5 and 6 show support for the European Union in different ways. Figure 4 shows support based on the proxy variable EUsupport. Figure 5 and 6 both show support based on voting behaviour. The results shown in figure 6 are expanded because the voting variable has a lot of missing data. To make the data representative for the division of electoral seats in the European Parliament, strongly opposed and moderately opposed have been expanded in figure 6. For both ways of measuring goes; the higher the score, the higher support for the European Union is in that specific region.
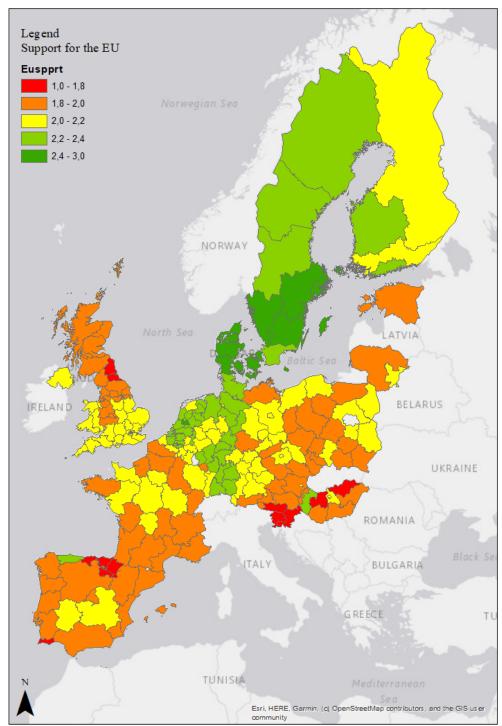
Figure 4: Support for the European Union

For this study, support for the EU can vary (in theory) between a score of 1 and 4. The mean level of support from all regions is 2,067. As is visible in the map, the highest score a region shows in Europe is between 2,4 and 3. The highest levels of support are expressed in Åland (Finland) with a score of 2,7179. In general the Scandinavian countries together with the western regions of Germany and the Netherlands show the highest scores on support for the EU. The lowest scoring region is Comunidad Foral de Navarra (Spain) with a score of 1,6087. When looking at the map, Slovenia, southern part of Austria, parts of Hungary, south Portugal, north England and in Basque country in Spain the lowest scores regarding support for the EU are visible. These lower scoring regions are predominantly regions that classify as net-beneficiaries of the funds. When testing this with a Spearman correlation (before controlling for other factors), this observation is confirmed with a significant (P(t) 0,0000) negative

score of -0,1658. This indicates a relation between funding and support where regions that receive more funding, will support the EU less. As is visible in the map, data on support (measured by the proxy variable) is not present in all EU countries. When using the data on voting, this problem does not occur, all European countries have this data available.
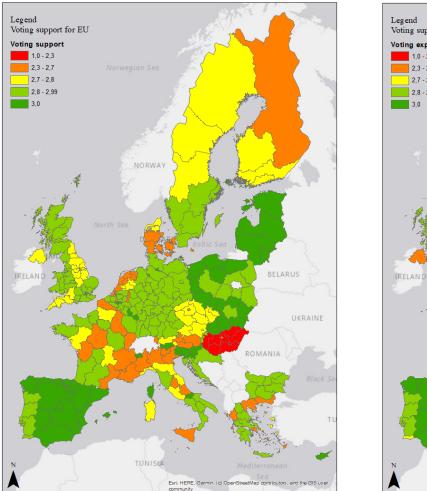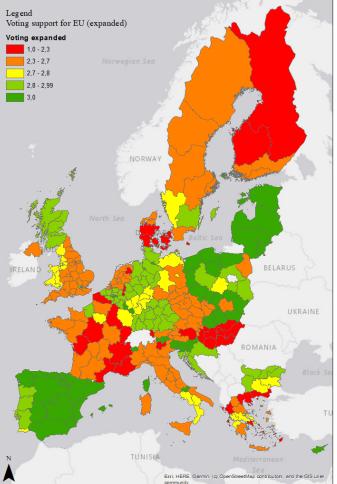

Figure 5: Voting support for the EU

Figure 6: Voting support expanded for the EU

Figure 5 and 6 both show support for the European Union based on voting behaviour in national elections. For this variable, scoring could vary between 1 and 3. The dark green regions within this map are the regions that have scored a 3 on voting support. These regions were able to score that high because there are no political parties that are opposed towards the EU (big enough to get) in the national parliament. The mean score of voting support is 2,825 and 2,666 for the expanded variable.

These maps, especially the expanded, show a different distribution for support than figure 6 does. Here the Scandinavian countries and the Netherlands are amongst the lowest scoring regions, where they were showing the highest levels of support in figure 6. Simultaneously the Eastern European countries (except Hungary) and Spain showed the lowest levels of support in figure 6, but now show high levels of support based on voting behaviour. Nevertheless, the proxy variable support and support by voting are positively correlated. The correlation with voting support is again very weak with 0,090, the correlation with voting support expanded is a bit stronger with 0,1385. Knowing this correlation is weak, it is interesting to see how voting correlates with funding before correcting for other factors. This Spearman correlation (with the regular voting variable) is significant (P(t) 0,0046) and still negative -0,0179. When taking the expanded voting variable the correlation becomes insignificant (P(t) 0,4369). The relation between voting and funding is thus weaker than between support and funding.

c. *Quality of government and support*

A reason that could explain the weak relationship between funding and EU support could be the effectiveness with which the funding is spent by the local government. Figure 7 and 8 examine this topic by depicting the regional differences in quality of government, building on the assumption that a higher quality of government increases the effectiveness of the received funding (Rodrigues- Posé & Garcilazo, 2015). These maps show two highly correlated (0,925) measures of quality of government. Both maps are based on data provided by the University of Gothenburg. These variables are composed in a way where the higher the scores, or the more the region colours green, the better the local government functions. Implying that the funding money would be spent more effectively.
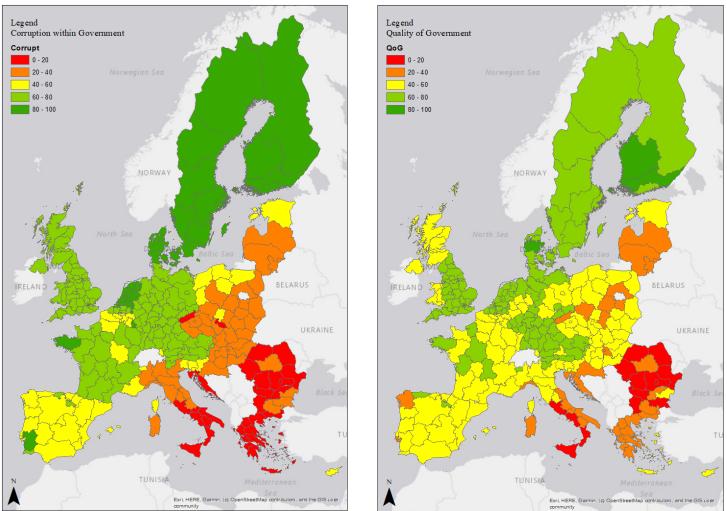

Figure 7: Corruption within local government

Figure 8: Quality of local government

As mentioned before, corruption and quality are highly correlated with a score of 0,925. Therefore, both maps roughly show the same pattern. As with the fundratio map, the Eastern states together with the Southern Mediterranean regions show lower levels of governmental quality and higher levels of corruption. Corruption has more of an national division, where mostly the entire country falls into the same category. This national distribution of corruption has already been studied by Shleifer & Vishny (1993), they found that when the quality of national governmental institutions is low(er), corruption with in local governments will increase. Interestingly, some countries deviate from this rule such as Belgium and Italy. Within both these countries, the southern regions show higher levels of corruption than the north, while they have the same national government. However, these southern regions were also the regions that showed higher scores on fundratio. This observation is supported by the corelation between funding and quality of government. For both corruption within and quality of government, a correlation with fundratio of respectively -0,5794 and -0,5696 has been found. Both these variables are strongly related to economic success. Therefore, interpreting this correlation can be challenging since cause and

effect are difficult to distinguish. However, based on available literature on the topic, the following assumptions about these variables can be made. One, the greater the effectiveness of the money spent, the lower the score on fundratio. Thus relatively less money has to be transferred to these high scoring regions. Second, the higher the quality of government and the lower the scores for corruption within a region, the lower the score on fundratio will be. This means that regions with strong governments will shift more towards being a net-contributing region.

The map on quality of government has some more variance within countries. Again Belgium and Italy show higher levels of quality in the North. The United Kingdom has a clear division between England, Scotland, Wales and Northern Ireland. Where England has the highest scoring quality of government and these other regions lack behind. Still within most countries, the quality of government does not differ more than two categories. Only Spain, Italy and Bulgaria show a maximum difference of three categories. Since both variables quality of, and corruption within government, are highly correlated. Only the variable quality of government will be used in the overall analysis of the relation between funding and support.

d. Funding and support

The following section will further investigate the relation between support, funding and other variables. To uncover the complex relations underneath the different variables included in this research, multiple models with different composition of variables will be examined. By generating results based on different compositions of the variables, each variable's explaining power and influence can be better interpreted. When performing the statistical tests with different combinations of dependent and independent variables, the effect of the main independent variable ''funding'' on support changes. These relations are shown in table 6 and 7, within both tables a regression is performed. Within table 6 the proxy variable EUsupport is the dependent variable. Since this proxy variable consists out of 10 different categories, an ordinal logistic regression is used. Table 7 shows the results of the models with votingsupport as dependent variable, a variable with only 3 different categories. Therefore, this relation will be tested with a multinominal logistic regression. For both tables and all models, the first column shows the coefficient of the variable with the level of significance, the second column the robust standard error. This robust standard error uses the European NUTS regions as clusters. With these clusters, the expected regional influence based on support has been controlled for. Therefore the output shows a more truthful representation of the associations concerning support. Furthermore an interaction variable has been added to both models. This interaction is between funding and quality of government and can explain more accurately the effectiveness of the funding money spent.

Table 6 consists out of 4 different models. With every model, additional variables are added to correct for underlying mechanisms and to investigate different relations. With the addition of new variables, the amount of cases in the model decrease from 29.085 to 13.770. These fewer cases lead to less variation and with an increasing amount of variables, the explanatory value increases with every model. This is visible within the Pseudo R2 which increases from 0,0052 to 0,0660 and the decreasing loglikelihood from -58179 to -26152.

Table 7 shows the multinominal logistic regression with votingsupport as dependent variable. Within this model there has been differentiated between strongly opposed (on the left) and moderately opposed (on the right). These values should be interpreted relative to the reference category not opposed towards the EU. The direction of a possible significant relation can be interpreted by using the RRR (relative risk ratio). For the RRR two categories are distinguished, smaller than 1 and greater than 1. When a RRR is smaller than 1 (for example 0,7 for satisfaction with life) it indicates that the so called risk of being satisfied with your life is smaller for that group compared to the reference group. Specifically for this study, it translates as follows: ''the risk of being satisfied with your life is 30% lower when you vote strongly opposed compared to voting not opposed towards the EU.'' When a RRR is greater than 1 (for example 1,3 for fundratio) it indicates that the risk of becoming a bigger net beneficiary of the European funds is greater for that group compared to the reference group. Within this research this means that the risk of becoming a bigger net beneficiary of the European funds is 30% higher when you vote strongly opposed compared to not opposed towards the EU. Within table 7, two models are

included. These models differ on only one variable, the interaction variable for funding and quality of government. Because this interaction variable consists out of already included variables, the amount of variables (13.266) and corrected clusters in both models are equal. Logically, with the addition of this variable the explanatory value of the model increases from a R2 of 0,0780 to 0,0890 and a decrease of the log likelihood from -5.702 to -5.634. All in all does table 9 show higher levels of explanatory power than table 8 does.

Table 6: Output Ordinal Logistic Regression (EU support dependent variable)

EU support	Coef.	Robust Std. Er.	Coef.	Robust Std. Er.	Coef.	Robust Std. Er.	Coef.	Robust Std. Er.
Fundratio	-0,117***	0,022	0,271*	0,137	0,310*	0,132	0,248	0,156
Riskpvrexcl			-1,159	0,695	-1,224	0,668	-0,045	0,751
Norm_qual			0,040***	0,005	0,034***	0,004	0,021***	0,005
Fundratio##Qual			-0,006	0,003	-0,006*	0,003	-0,005	0,003
Age					-0,002*	0,001	-0,003*	0,001
Gender					-0,107**	0,032	-0,027	0,034
Education level								
2					0,138	0,085	0,096	0,090
3					0,166*	0,081	0,028	0,087
4					0,417***	0,093	0,218*	0,089
5					0,886***	0,094	0,695***	0,107
Satisfaction life								
2					0,662***	0,137	0,391**	0,125
3					0,755***	0,128	0,351**	0,123
4					1,054***	0,133	0,461***	0,130
5					1,224***	0,140	0,509***	0,141
Happy								
2					0,598**	0,137	0,440*	0,186
3					0,468**	0,150	0,330*	0,156
4					0,739***	0,137	0,501***	0,142
5					0,852***	0,147	0,602***	0,149
Satisfaction eco								
2							0,913***	0,100
3							1,552***	0,106
4							2,166***	0,119
5							2,489***	0,125
Model	**1**		**2**		**3**		**4**	
Pseudo R2	0,0052		0,0188		0,0387		0,0660	
Log likelihood	-58179		-27473		-26916		-26152	
Number obs.	29.085		13.770		13.770		13.770	
Adjusted clusters	227		112		112		112	

*** = sig < 0,0005
** = sig < 0,005
* = sig < 0,05

Table 7: Output Multinominal Logistic Regression (Voting dependent variable)

Voting support	RRR	Robust Std. Er.	RRR	Robust Std. Er.	RRR	Robust Std. Er.	RRR	Robust Std. Er.
	1 – Strongly opposed				2 – Moderately opposed			
Fundratio	1,316***	0,070	1,253	0,156	1,312**	0,107	0,811	0,136
Riskpvrexcl	0,262	0,408	0,368	0,709	0,070	0,137	1,117	2,542
Norm_qual	1,068***	0,011	1,067***	0,011	1,016	0,013	0,999	0,014
Fundratio##Qual			1,001	0,003			1,011**	0,004
Age	0,990**	0,003	0,990**	0,003	0,999	0,002	0,999	0,001
Gender	0,716***	0,062	0,718***	0,062	1,018	0,079	1,038	0,082
Education level								
2	1,646*	0,358	1,674*	0,364	1,725*	0,371	2,077***	0,433
3	1,559	0,378	1,583	0,404	1,021	0,259	1,243	0,327
4	0,927	0,286	0,940	0,291	0,913	0,263	1,073	0,308
5	0,661	0,186	0,675	0,189	0,893	0,220	1,133	0,271
Satisfaction life								
2	0,725	0,151	0,721	0,146	1,335	0,309	1,182	0,272
3	0,732	0,158	0,726	0,152	1,629*	0,347	1,392	0,287
4	0,721	0,152	0,716	0,147	1,539	0,396	1,325	0,331
5	0,795	0,180	0,790	0,178	1,127	0,318	1,007	0,275
Happy								
2	1,183	0,292	1,167	0,288	1,150	0,323	0,998	0,290
3	1,000	0,227	0,977	0,218	1,163	0,299	0,963	0,239
4	1,006	0,236	0,984	0,230	1,262	0,362	1,046	0,292
5	1,062	0,274	1,038	0,266	1,326	0,410	1,094	0,327
Satisfaction eco								
2	1,202	0,171	1,197	0,171	1,172	0,206	1,127	0,200
3	1,021	0,164	1,023	0,165	0,934	0,188	0,950	0,186
4	0,608*	0,115	0,612*	0,115	0,991	0,259	1,063	0,277
5	0,401***	0,081	0,404***	0,081	0,622	0,183	0,668	0,196
Constant	0,004***	0,004	0,004***	0,003	0,013***	0,014	0,020***	0,020

Model	1	2			1	2		
Pseudo R2	0,0780	0,0890						
Log likelihood	-5702	-5634						
Number obs.	13.266	13.266						
Adjusted clusters	170	170						

***	= sig < 0,0005
**	= sig < 0,005
*	= sig < 0,05

The first model in table 6 depicts an ordinal logistic regression solely including fundratio as independent variable. These variables show a significant relationship (sig. < 0,0005) to one another. This is a negative relation with the coefficient being -0,117. A negative coefficient indicates that the more a region benefits from the EU funds, the less support that region expresses to the European Union. The negative relation for this regression is not unexpected. Poor regions receive more money from the EU funds than wealthier regions. Poverty has often been related to political distrust and unsatisfaction (Goodwin & Health, 2016; Becker et al., 2017; Dijkstra et al., 2020; Stockemer, 2017; Rodriguéz-Pose, 2018). Additionally, the quality of the local government is important to make proper investments with the received funding money. When funding money is transferred towards a region, but due to corruption or bad governing

inhabitants do not experience it's benefits, funding will not lead to higher levels of support for the EU (Rodriguez-Posé & Garcilazo, 2015). To control for this, three variables have been added to the second model: the risk of poverty and social exclusion, an index for quality of government and the interaction variable with funding and quality of government. Model 2 shows the results of this new regression.

Not all the variables in the second model contribute to the significance of the test. However, this combination of variables makes that the coefficient of fundratio now has a significant positive relation with the logarithm of support (coef. 0,271). Thus meaning that when a region receives more money from the EU funds, they support the EU more. Logically, the variable riskpvrexcl (risk of poverty and social exclusion) shows a negative relation towards support (coef. -1,62366). This indicates that when one's chances to fall into poverty or be socially excluded from society increase, one's support for the EU will decrease. However, this interpretation of the variable cannot be projected on the population since it does not show significance. The variable quality of government is significant and positively related to support (coef. 0,040). Indicating that the higher the quality of the local government, the greater the support for the EU. The interaction variable consisting out of funding and quality of government, included to indicate the effect of funding, is not significant with this combination of variables. Therefore, it is not possible to make any assumptions about this effect.

To control for other underlying forces that might influence support, the third model includes more new control variables. Within this third model, almost all these variables show different levels of significance (between <0,0005 & <0,05). Four variables show a negative relation towards support; risk of poverty and social exclusion, the interaction between funding and quality of government, age and gender. The risk of poverty and social exclusion is again insignificant and can thus not be interpreted. Opposite to the first model, does the interaction variable show significance within this second model. Yet, with a coefficient of -0,006 its effect is very small compared to the other variables. Still, it is interesting to look at the interaction between funding and quality of government and their relation to support. This negative relation indicates that for any given value of funding, when the quality of government (and thus the effectiveness of funding money spent) increases, support for the European Union will decrease. The negative coefficient for age (-0,002) signifies a relation where the older one becomes, the lesser they support the European Union. The negative value for gender (-0,107) suggests that men support the EU more than women. All other variables show a positive relation towards support. New within this ordinal logistic regression are education level, satisfaction with life and experiencing of happiness. All these variables need to be interpreted relative to the lowest score for that variable (which is left out of the regression as reference category). This means, for example with education level, that the log odds for someone to support the EU are 0,886 higher when a person went to university (category 5) than when someone did not finish primary school (category 1). These variables show that the higher the logarithmic value, the stronger the positive relation towards support. For education level this signifies that the higher ones completed education, the higher the support for the EU. These finding on the relation between education level and support are in line with previous studies where was found that the higher the level of ones finished education, the bigger the chance that one will support the EU (Hobolt & de Vries, 2016; Becker et al., 2017; Dijkstra et al., 2020). With satisfaction of life, the relation shows that the higher the score one rewards to life, the greater the support for the EU. Lastly for happiness, this indicates that the happier someone is in life, the greater the support for the EU will be.

The fourth and last model includes one more variable, satisfaction with economic state of the country. The addition of this variable causes some shifts in significance for quite a few of the main independent variables. Satisfaction with economic state of the country itself shows the highest levels of significance with support for all values. The coefficients corresponding to the levels of satisfaction are of increasing value. This suggests that for every unit increase in satisfaction with the economy, the log odds for someone to support the EU increase from 0,9 till 2,5. This is also in line with previous executed research on the subject (Goodwin & Health, 2016; Becker et al., 2017; Dijkstra et al., 2020). As mentioned, with the addition of the variable satisfaction of the economic state of the country, other control variables lose explanatory power. Both education level, satisfaction with life in general and feeling of happiness show lower levels of significance and strength. Satisfaction with economic state of the country is thus of greater importance for support than happiness, education level or satisfaction with life in general.

Another variable that has lost its significance with the addition of satisfaction of economic state is the main independent variable fundratio. Both variables are monetary based, but the economic state of the country has more explanatory value than funding.

Within table 7 support is measured with data on voting behaviour. This second way of testing with a different dependent variable uses the same independent variables and robust standard errors as the model for EUsupport. However this multinominal logistic regression uses relative risk ratios (RRR) to indicate the direction of a relationship. Furthermore, are there only two different models included in contrast to the four models in table 6. The first model shows the relation between votingsupport and the independent variables before including the interaction variable containing funding and quality of government. Hardly any variables show significance in this new first model. However, the main independent variable fundratio does show high levels of significance for both strongly and moderately opposed. For both categories the RRR is greater than 1 being respectively 1,316 and 1,312. When focussing on strongly opposed, this can be interpreted as follows: the risk of becoming a bigger net beneficiary of the European funds is 31,6% higher when you vote strongly opposed compared to not opposed towards the EU. In other words, if the fundratio increases in score (a region becomes a relative bigger net-beneficiary of the funds), that region is more likely to vote strongly opposed than not opposed. This same relation applies to moderately opposed, but with a slightly weaker relative risk ratio. This outcome contradicts with the findings for EUsupport. Since both models have included control variables, the expected relation was to be equal for support measured by the proxy variable and by voting. However, even though the results from table 6 proved that people show higher levels of support for the EU (after controlling for other factors), their voting behaviour is not in line with this observation.

Other variables within the first model that show significance are, for strongly opposed; quality of government, age, gender, category 2 for education level and the last two categories for satisfaction with the economic state of the country. The variable quality of government shows a high level of significance with a RRR greater than 1. Which can be interpreted where an increase in the score on quality of government (a local government gains in quality) results in a situation where people within that region are more likely to vote strongly opposed than not opposed to the European Union. The only relative risk ratios smaller than 1 are found for the two highest categories for satisfaction with economic state of the country. These RRR's, being respectively 0,608 and 0,401, indicate that when one's satisfaction with the economic state of the country increases, ones likelihood to vote opposed towards the European Union compared to not opposed, decreases. This observation is in line with the results found for EUsupport and confirms the theories that suggest that economic opportunities are of importance in determining ones support (Goodwin & Health, 2016; Becker et al., 2017; Dijkstra et al., 2020; Stockemer, 2017; Rodriguéz-Pose, 2018).

Model 1 for moderately opposed shows less significance than strongly opposed does. This can be explained by the fact that the differences between moderately and not opposed are smaller than between strongly and not opposed. Therefore the chances for variables to show a significant different relation towards support are smaller. Nevertheless are there variables that do show significance. As mentioned before does the main independent variable fundratio significantly differ positively from not opposed. Besides this variable, also category 2 for education level and category 3 for satisfaction with life show significance. Both these significant categories have a relative risk ratio greater than 1, being respectively 1,725 and 1,629.

Within model 2 one new variable is included, this is the interaction between funding and quality of government. With the addition of this variable, fundratio loses significance for both strongly and moderately opposed towards the European Union. For strongly opposed, the interaction variable itself is not significant and does not do that much to the models outlook (besides making funding insignificant). The relative risk ratios stay the same with regard to being smaller or greater than 1 (also for non-significant variables). Again quality of government, age, gender, category 2 for education level and the last two categories for satisfaction with the economic state of the country are significant with roughly the same RRR's. For moderately opposed the interaction variable is significant and has a relative risk ratio slightly greater than 1 with 1,011. This indicates that for any given value of funding, when the

quality of government (and thus the effectiveness of funding money spent) increases, support will decrease. Interestingly, although both insignificant, is the fact that fundratio as well as quality of government now have relative risk ratios smaller than 1.

Table 7, with votingsupport as dependent variable, has contradicted many of the outcomes table 6 provided. Even though these variables positively correlated, their relation towards most of the independent variables was reversed or differed in significance. Where the relations shown with the proxy of support and independent variables, have been more economically intuitive. The relations between voting and the different independent variables did, economically, not all make sense. Possible explanation could be what Hobolt & de Vries (2016) call ''identity voting''. With identity voting it is not so much the economic position a political party takes, but the cultural aspects they address that attracts voters (Ansolabehere & Puy, 2016). This could lead to a situation where people do express higher levels of support for the European Union, but do not express that level of support in elections. Their preferred party culturally does not share the same economic positions they adhere, which is then of lesser importance to these voters.

Specifically for the variables funding and support, these outcomes would suggest that one's support for the EU will increase when one shifts towards being a bigger net-beneficiary of the funds. But ones voting behaviour would be more anti-EU when one shifts towards being a bigger net-beneficiary of the European funds. Possible reasons for this difference in results could lie in different aspects. First a clear look at the data is needed. As was visible on the map for EUsupport, not all countries had data that could generate the proxy variable for support. Therefore these countries have not been taken into account when testing for the correlation between support and voting behaviour. This might have led to a positive Spearman rho, while the not included countries could have made this relation negative. Which could explain the contradicting results from both dependent variables. Other reasons could be that people can vote for a political party for different reasons. Someone who votes for a party with an anti-EU program, might not be anti-EU, but agree with that party on different aspects within their election program. Second, people might not have the chance to vote for a party that expresses their thoughts about the EU. For example, people in Spain are unable to vote opposed to the EU, while they might be opposed themselves. Third, when people express their feeling about trust in the European Parliament or their ability to influence the local politics, they might do so with different topics in mind than funding. Fourth, The model tries correcting for the (lack of) economic opportunities one can experience in the region. Yet this might still be a reason for someone who lives in such an area to express their dissatisfaction with a government. Lastly, these models (and this study) focuses solely on the economic aspect of support. However, as mentioned before, support is also related to identity. This aspect has not been included in the models, but could be of importance with both support variables.

5. Conclusion & Discussion

a. Conclusion

Support is a complex concept. It is determined by various variables and ever changing. This study tried to research the relation between funding and support for the European Union based on economic factors. Previous research has tried to look into this relation on a national scalar level, or with solely the Cohesion Fund as money distributor. To add to these studies, this study has been performed on a regional scalar level with the five biggest European Funds being included. With two different dependent variables and logistic regressions, the relation between funding and support has been studied thoroughly. Together with funding, other variables such as quality of government, risk of poverty and social exclusion as well as satisfaction with life have been included in the models. These variables have been included in this study because of their proven relation with support by previous researches.

Of all 281 NUTS-2 regions within the European Union, 149 are net-contributors to the European budget. This leaves a total of 132 regions to be net-beneficiaries of the European budget. The net-contributing regions are predominantly in the Scandinavian countries, western Germany, Austria, the Netherlands, France and the most of the UK together with the northern parts of Belgium, Spain and Italy. The biggest net-beneficiaries of the budget are the regions situated in the Baltic countries, Eastern Europe together with the southern regions of Belgium, Spain and Italy. However, being a net-beneficiary of the funds can only lead to a better distribution of wealth and economic opportunities, when the money is invested properly by the local government. Since diverging the economies of all European regions is one of the main objectives of the funds, it is important to look to these local governments. The quality of local government influences the effect the funding money generates in a net-beneficiary region. Funding (fundratio) and quality of government correlated strongly negative and significant with one another. This negative correlation indicated two things. One that the greater the effectiveness of the money spent, the lower the amount of funding. Thus resulting in a situation where relatively less money has to be transferred to regions with high quality of government. Second, the higher the quality of government, the lower the amount of funding will be. This means that regions with strong governments will shift more towards being a net-contributing region.

This study has examined support in two ways. Firstly by creating a proxy variable that measured support based on trust in the European Parliament and the ability to influence political decision making. Secondly by using voting behaviour in the form of election results as a way to calculate support. These two different ways of measuring support correlated significantly, but weakly positive with each other. For both ways of measuring support, multiple models with different combinations of variables have been examined to study the relation between support and funding. The proxy variable for support showed a significant negative relation with the fundratio which was expected. After correcting for the risk of poverty which regions that receive more funding usually experience and including quality of government in the regression, this relation became significantly positive. When adding more control variables into the model, expected relations based on available literature appeared. For example, the higher ones education, the greater the support. This relation only became stronger when education levels got higher. Satisfaction with life in general showed the same pattern as education, where the higher the satisfaction with life, the more significant and greater the coefficient for support for the European Union. An interesting shift occurred when the satisfaction of the economic state of the country was added to the model. For this variable all categories showed the highest level of significance and strength. However, with the addition of this variable the main independent variable for this research, fundratio, lost its significance. This suggests that economic factors are important in determining support. But that funding itself might not have that much explaining value within that relation.

When looking at support based on voting behaviour (votingsupport), interesting results were obtained. In general did the model show less and lower levels of significance. The significant results were largely contradicting the outcomes from the previous model. The main independent variable fundratio showed, after adding the control variables, a negative relation towards votingsupport. This suggests that if the fundratio increases in score (a region becomes a relative bigger net-beneficiary of the funds), that region is more likely to vote strongly opposed than not opposed. Another contradicting result was found for the

relation between quality of government and votingsupport. This variable showed high levels of significance with a relative risk ratio greater than 1. The following interpretations then can be made: an increase in the score on quality of government (a local government gains in quality) results in a situation where people within that region are more likely to vote strongly opposed than not opposed to the European Union. Similarities between the models where found for the variable satisfaction with economical state of the country. This variable showed a significant negative relation for the highest two categories. The RRR's smaller than 1 indicated that when one's satisfaction with the economic state of the country should increase, ones likelihood to vote opposed towards the European Union compared to not opposed, decreases. This observation confirmed the theories that suggested that economic opportunities are of importance in determining support for the European Union.

b. Discussion

This research aimed to study the relation between support and funding in the European Union on a regional scalar level. The focus was on the economical aspect of support. With the results of this study, different European institutions are able to better estimate the effect of funding. This regards to the returns the funding could generate in different regions and the support that is expressed because of it. By using two different dependent variables to determine this relation, different outcomes in relation to the main independent variables emerged. Taking into account that these dependent variables where positively correlated, this contradiction in results came unexpected. Based on the outcomes of the executed regressions, the following conclusions could be drawn: First, support is heavily influenced by the economic state of the country or region. When a country/region is economically doing well, its people are more likely to support the European Union. Second, quality of government is important for determining the effectiveness of the funding money received in a region. With a higher quality of a local government, relatively less money needs to be transferred to a region. Because of the higher return of the investments made. Therefore, regions with higher quality of government are more likely to support the European Union than other regions. Third, after correcting for the economical state of the region and the quality of government, the amount of funding does influence support. Where the higher the amount of funding that is relatively transferred towards a region, the higher the support for the European Union in that region will be. Fourth, these last two conclusions do not apply to support based on voting behaviour. As mentioned, results regarding voting behaviour contradict the results generated with support. Based on the outcomes of this research, people seem to vote more anti-EU when one shifts towards being a bigger net-beneficiary of the European funds.

Different justifications can be made for this result. These justifications could roughly be divided in three different categories: capriciousness of human behaviour, identity voting and inconsistency in the data. Capriciousness could express itself in the variable votingsupport through voting behaviour where people vote for political parties with an anti-EU program, while not being anti-EU themselves. However, they could agree with that party on different aspects within their election program. Another way the behaviour of people could lead to a bias in the data for support is when people express their feeling of trust in the European Parliament or their ability to influence the local politics with different topics in mind than funding. Because this study has focussed the economic part of support, the cultural or identity aspect has not been included into the models. However, for some years now, the cultural identity connecting people to their region has become increasingly important in determining which party to support during elections. This protection of the own identity has caused a shift towards more populistic, and thus anti-establishment parties across Europe. This might have influenced the data used for support on voting, without considering it to be an issue. Another way the data could lead to these contradicting results is by having people included who do not have the chance to vote for a party that expresses their thoughts about the EU. This is for example the case in Spain, here people are unable to vote opposed to the EU, while they might be opposed themselves. Contradictions in the data could also have appeared because different regions were included in the two regressions. Not all regions had data that could generate the proxy variable for support. Therefore these regions have not been taken into account when testing for the correlation between support and voting behaviour. This might have led to a positive Spearman rho, while the not included regions could have made this relation negative.

To prevent or control for these described problems, in future research on this topic it is recommended to include data from different periods of time. This study is based solely on funding in the year 2015, support is measured based on data from 2014 and voting behaviour is determined by elections results from 2014 or the earliest elections previous to that year. This creates a rigid image of support, while it might show patterns through time. Another way to improve the explaining value of a research on this topic is by only including countries that have enough data available to create the two different dependent variables. This study opted not to exclude the countries that could only provide data for one of the variables because that would have led to a situation where interesting countries such as Italy, Greece, Romania and Bulgaria could not have been included in this research. However, by comparing two different samples of European countries interpretation of the results has become complex. Lastly, future research could try to include identity aspects in voting behaviour. Even though the focus of this research has been on the economic aspect funding, the influence that regional identities have on support should no longer be ignored within economic support studies.

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Appendix 1: Division of countries among net-contributors and net-beneficiaries

The table shows the 28 European countries that have, in the time period 2000-2015, been a member state of the European Union. The table is ordered in order of relative contributions vs beneficiaries, making the Netherlands the biggest net contributor and Lithuania the biggest net beneficiary during this time period (CBS, 2016).

Net-contributor	Net-beneficiary
Netherlands	Cyprus
Germany	Croatia
Sweden	Spain
Belgium	Ireland
Luxembourg	Slovenia
Denmark	Malta
France	Czech Republic
Austria	Slovakia
United Kingdom	Portugal
Italy	Romania
Finland	Poland
	Greece
	Estonia
	Latvia
	Hungary
	Bulgaria
	Lithuania
Total: 11 Countries	**Total: 17 Countries**

Net beneficiaries and -contributors of the European Union period 2000-2015

Appendix 2: Division of countries for each dependent variable

EUspprt as dependent variable	Votingsupport as dependent variable
Austria	Austria
Belgium	Belgium
Czech Republic	Bulgaria
Germany	Cyprus
Denmark	Czech Republic
Estonia	Germany
Spain	Denmark
Finland	Estonia
France	Spain
Hungary	Finland
*Ireland**	France
Lithuania	Greece
The Netherlands	Croatia
Poland	Hungary
Portugal	*Ireland**
Sweden	Italy
Slovenia	Lithuania
United Kingdom	Latvia
	Luxembourg
	Malta
	The Netherlands
	Poland
	Portugal
	Romania
	Sweden
	Slovenia
	Slovakia
	United Kingdom
Total: 18 countries	**Total: 28 countries**

Ireland misses data on funding and is therefore not included in this research for any of the two dependent variables.

Appendix 3: Output binominal regression voted/missing

Voted/Missing	Coef.	Std. Error
Satisfaction with life	-0,062***	0,013
Satisfaction with economy	-0,155***	0,009
Happy	-0,035*	0,014
Education level	-0,186***	0,008
Constant	0,995***	0,044
Model		
Pseudo R2	0,0244	
Log likelihood	-28875	
Number of obs.	43.814	

Coded as: Voted (0) / Missing (1)
*** = sig < 0,0005
** = sig < 0,005
* = sig < 0,05