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VARIATION IN DETERMINANTS OF SUPPORT FOR BREXIT – AN EXPLORATIVE STUDY OF 'LEAVE' & 'REMAIN' REGIONS

Abstract

This article aims to shed light on the possibility of individual level determinants of voting for 'Leave' in the Brexit referendum displaying varying influence in regions that voted for leave or remain.

The effect of various factors influencing voters' decisions has been thoroughly researched in the past years, with explanations around attitudes towards immigration, the domestic & personal situation, values, and socio-demography at the forefront. However, the scholarship has – with some important exceptions – ignored the possibility that the strength and accuracy of these explanations could vary, bringing their contextual validity, i.e. the equivalent influence of the determinants for support for Brexit across contexts, into question. Therefore, this article addresses the question of *how determinants of support for Brexit vary between "Leave" & "Remain" regions*. The focus here is on Scotland, Northern Ireland and London as the 'Remain' regions and Wales as well as the rest of the UK as the 'Leave' regions. Through a descriptive analysis of the distribution of factors between regions (descriptive) and logistical survey regression investigating the variance of determinants' influence on voting decisions, some empirical evidence is produced that points towards the possibility of determinants not possessing contextual validity.

While the descriptive analysis shows how most of the determinants are significantly differing in their distribution across respondents, the multivariate analysis shows that they displayed different effects in the two samples. Nonetheless, this article only presents a very basic starting point for much-needed further research that should employ more sophisticated methodology and sampling.

Keywords: Brexit, United Kingdom, contextual validity, anti-immigration sentiments, left-behind

Introduction

On 24 July 2016, people across Europe, particularly in the United Kingdom, woke up to a changed political reality. Almost 52% of voters had chosen in favour of the UK leaving the European Union (Dennison et al. 2020: 1).

Very quickly, the media "produced correlations between selected variables and the referendum result" (Becker et al. 2017: 604) while it took the scholarship longer to produce comprehensive analyses, as 'Brexit' was regarded as a challenge "to our theoretical understanding of how voters' attitudes towards the EU are shaped" (Curtice 2017: 19). Therefore, the referendum has become "one of the most interesting challenges for both theorists of International Relations and Political Scientists" (Betti 2021: 72). However, while possible explanations for the referendum result have been investigated in great detail (see for instance: Dennison et al. 2020; Halikiopoulou/Vlandas 2018; Hobolt 2016), not all of the UK voted to leave. Here, possible differences between the regions that voted *remain* and the ones that voted *leave* have been borderline neglected, with only a couple of researchers addressing this gap in the literature (Henderson et al. 2021).

The aim of this article is therefore to further fill this research gap by answering the question of "*how do determinants of support for Brexit vary between "Leave" & "Remain" regions?*"

The article is structured as follows. The first part introduces the perceived similarities and differences between what will subsequently be called Leave regions (LR) and Remain regions (RR), as well as the caveats

and problems that many current analyses of Brexit face/have faced. The second part details the theoretical approaches utilized and outlines the explorative puzzle under investigation – the possible variation of determinants – introducing the main proposition under investigation accompanied by some assumptions and expectations. Next, in the third part, the research design chosen is discussed in further detail. Subsequently the proposition is reviewed in light of the descriptive and multivariate analyses. Lastly, these results are summarized in a conclusion, the research question is answered and next steps for further research are proposed.

'Leave' & 'Remain' Regions – Differences between London, Northern Ireland, Scotland, and the Rest of the UK

While the United Kingdom overall voted to leave the European Union, three 'regions'[2] – Scotland, Northern Ireland and London – opted to remain to varying degrees.[3] As there is "no single UK people or demos, nor is there shared telos" (Keating 2018: 40), these differences in results are only somewhat surprising (McCrone 2017: 392). However, it is still essential to further elaborate on these differences and how they might be related to the differing results in the referendum or at least might have affected the influence of the determinants outlined in the next section.

First, in Northern Ireland and Scotland, different issues might have been at the forefront of the referendum campaign, with a notable difference between Scotland and England being, for instance, the "salience of the issue of migration and free movement" (ibid.: 42). Out of all three regions making up the 'Remain' part, Scotland has been investigated most thoroughly. Here, some authors suggest that the results were "especially striking" and different "than might have been expected" given the socio-demographic make-up of the territory (Goodwin/Heath 2016a), with communities similar to their counterparts in England voting in a different way (de Ruyter et al. 2021: 508). Still, at least in the case of Scotland, others argue that the different outcome was not "driven by a different set of socio-demographic factors" (McCrone 2019: 515).

Additionally, in Northern Ireland, concerns about the border with the Republic of Ireland and a rekindling of the 'Troubles' overshadowed the Brexit debate (Garry et al. 2021; Wilson 2020), producing a "less hostile referendum campaign than was evident across other parts of the UK" (Murphy 2016: 846). This in turn, could then also have led to differences in the influence of the determinants for supporting Brexit outlined in the next section.

When it comes to London, the main difference to the 'Leave' regions of the UK can be found in economic and cultural spheres (Carreras et al. 2019: 1400f). Here, the highest shares of 'Remain' votes in any UK-wide district could be found (McEwen 2018: 67), which could be strongly related to the city's connection with, and dependence on, the EU (Colantone/Stanig 2018: 6f). Therefore, all three RR seem to have had slightly varying differences in comparison to the LR, which has thus led to the conclusion in the literature that "it was in England outside London where the decision to leave the EU was made" (Arnorsson/Zoega 2018: 2).

Construct Bias, Concept Bias, Context Validity, Determinants & Support for Brexit

The existence of multiple (possible) differences between the LR and RR already alludes to the often-ignored problem facing the scholarship around explanations for the outcome of the Brexit vote. These caveats – construct bias and content bias – are in the following subsumed under what I term **context validity**. First, construct bias "occurs when the construct measured is not identical across groups" (van de Vijver 2003: 145) and concept bias where "nonidentity of theoretical concepts across cultural groups" (Harkness et al. 2003: 13) is present.

As has been shown in the previous section, these two possible problems in the analysis of the outcome of the referendum have so far been only very rarely investigated (for an important exception see: Henderson et al. 2021) and are bordering on neglected. While both construct and concept bias represent different phenomena, they are closely related and frequently connected, stemming from the same root.[4] Therefore, in this article,

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[2]   As it is merely an "overseas territory" Gibraltar is excluded in this article.

[3]   Scotland: 62%, Northern Ireland: 55.8%, London: 59,9% (BBC 2016).

[4]   Or more specifically, construct bias may often result out of concept bias.

for reasons of practicality, both problems are subsumed under one term. Furthermore, both are related to the overarching concept of *measurement* validity and its sub concepts (Toshkov 2016: 117ff) – referring to the fact that the presence of one or both problems could lead to concepts no longer measuring what they are operationalized or conceptualized to measure.

Additionally, because the division of the two 'groups' under investigation here – LR and RR – is exclusively guided by their political (and spatial) *context*, the term 'group' as included in the definitions above is treated as analogous to 'context'.[5]

Hence, **context or contextual validity** in this article refers to the equivalent influence of the determinants for support for Brexit across contexts – here the LR and RR in the UK – argued to have been neglected by the current literature and requiring more investigation, especially because "guaranteeing that the measurement of relevant constructs is invariant […] constitutes a central concern when applying theories and instruments across different contexts" (Ariely/Davidov 2011: 272). The following section therefore introduces these theoretically-grounded determinants and further details the puzzle under investigation.

Theoretical Approach(es)

Considering the aforementioned goal of this article – to investigate the contextual variation of determinants of support for Brexit – given that "explanations of variation in individual-level voting behaviour" (Dennison et al. 2020: 2) are among the most-well developed (ibid.), the theoretical approaches utilized in this article and the determinants resulting from them are among those most prominent in the literature. However, the fact that I only focus on the individual level of course means that I cannot investigate other-level factors (see for instance: Becker et al. 2017; Carreras et al. 2019; Colantone/Stanig 2018). Still, the explorative nature of this article and the aforementioned popularity of individual-level determinants justify this decision. Furthermore, it is important to note that much of the literature indicates that many of the determinants argued to have influenced the decision to vote Leave are interconnected (Carreras et al. 2019), which however does not hinder the aim of this article, as it does not make any claims about the scale of importance of determinants *per se*, but focuses on (possible) regional variation.

Determinants of Support for Brexit

Attitudes – Immigration

One important determinant are anti-immigration sentiments – directed at both EU and 'third country' migrants (Favell/Barbulescu 2018: 118) – which are seen as one of the main drivers of the 'Leave' vote, as immigration was "a central topic throughout the Brexit campaign" (Alaimo/Solivetti 2019: 651). Therefore, the "importance of attitudes to immigration in the Brexit vote" (Dennison et al. 2020: 2), has been shown to be one of the key determinants of support for supranational integration in general (ibid.) and in turn for leaving the European Union. While the actual number of migrants in communities has been shown to **not** have a substantial effect (Goodwin/Heath 2016a: 328), the focus here is on **attitudes** towards migration and not **actual** migration. The reason for this is the salience of 'problems' arising from 'mass immigration' in the agitation for Leave and the strong association between negative attitudes and the subsequent pro-Brexit vote (Becker/Fetzer 2017; de Ruyter et al. 2021: 509).

Domestic Situation – Trust & (Political) Satisfaction

While identity and immigration have been focal points in the debates around Brexit, many scholars have also pointed towards another group of determinants argued to have influenced the decision of voters. Subsumed here under 'domestic (political) situation', these determinants focus mostly feelings of "anti-politics" (Flinders 2018), very often including trust in politicians,[6] as well as satisfaction with domestic politics. While 'anti-politics'

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5   This means that construct bias could for instance occur if the measurement is not identical across contexts.

6   Here as a subset of debates around populism (see for instance: Arnorsson/Zoega 2018)

is not a new problem, it is "one which is increasing, with disaffection with politics as it is practiced, together with growing distrust of the political elite, resulting, in large part, in the British vote to leave the European Union" (Vines and Marsh 2018: 434). Additionally, this 'anti-politics' sentiment with low trust in politicians and a low satisfaction with domestic politics could have resulted in voters, who often see referenda as "rather unimportant occasions" (Curtice 2017: 20), expressing their frustration with the performance of the national government, not focusing on "the merits of the proposition on the ballot paper" (ibid.). This argument is also supported by the fact that "the Leave campaign sought to frame the referendum as a battle between ordinary people and the political establishment, in line with the populist idea of a fundamental division between the 'the pure people' and the 'corrupt elite'" (Hobolt 2016: 1266; Mudde 2007).

However, the actual influence of this determinant has sometimes been called into question (Dennison et al. 2020: 7, 10), as "the assumption implies that those who voted 'remain' in the referendum were less alienated than Brexit supporters, which could be unsustainable in light of the numerous studies that have examined political alienation, political discontent or anti-politics in the UK" (Fox 2021: 17) Still, as the domestic situation and 'anti-political' feelings could present themselves as one of the determinants most likely to vary between the (mostly devolved) RR and the rest of the UK. In addition to this, the popularity of 'trust' playing a central role in the referendum (ibid.: 16f) also makes it suitable for the inclusion of the analysis.

Furthermore, the second determinant of this 'family' – the perception of a strain on and satisfaction with domestic institutions and public service in general – has received some attention in the literature (Becker et al. 2017: 605). The fact that the argument was that "voting to leave the EU [would allow] the country [to] save £350 million each week that could be redirected into the National Health Service (NHS)" (Clarke et al. 2017: 440) means that there is some ground to include this determinant as well, given the possibility that it should not only have a significant influence, with less satisfied individuals being more likely to vote leave, but also might vary between the two regions.

Personal Situation – Economic Considerations & Life Satisfaction

Another prominent 'family' focuses on the (personal) economic consideration of individuals as a determinant of voting for Brexit, with "groups vulnerable to poverty" (Goodwin/Heath 2016b: 1) more likely to support Leave. Here the argument is that economic anxieties served as "a motivating factor behind voting for Leave, either in terms of a backlash against fiscal austerity and inequality" (Dennison et al. 2020: 2; Dorling 2016) or were the manifestation of protest by the "losers of globalization" (Hobolt 2016; Rogaly 2019) as the "gaps between winners and losers have grown too large" (Lee et al. 2018: 5f). Therefore, "individual economic cost-benefit analyses [seem to] have become increasingly important for explaining public reactions to the EU" (Clarke et al. 2017: 442). Some scholars have thus pointed to the fact that "economic cost-benefit evaluations are at least as influential as any sense of identity" (Crescenzi et al. 2018: 120) when it comes to the likelihood of voting Leave. While the relationship between voter's economic situation and support for supranational integration – and hence also the backing of *leaving* supranational organizations – is well established (Eichenberg/Dalton 1993), some authors still argue that "the role of the economic scenario and of individual well-being in referendum voting leaves room for doubts" (Alaimo/Solivetti 2019: 652). As the empirical results sometimes remain mixed (Betti 2021), these scholars then claim that "economic variables did not play a role when controlling for attitudinal variables at the individual level" (Dennison et al. 2020: 2; Kaufmann 2016). However, given that variables related to the personal situation of voters and especially their economic circumstances and the 'left-behind' are at the forefront of a large volume of publications analysing Brexit (Carl et al. 2019; Halikiopoulou/Vlandas 2018), the inclusion of this determinant, notwithstanding the mixed results, is merited in the subsequent analysis.

A second notable dimension of this 'family' is what Liberini et al. (2017) describe as 'unhappy feelings' that do seem to "have contributed to the Brexit decision" (ibid.: 13), even though they indicate that most of these feelings came from economic considerations (ibid.). However, others have still included the determinant (Abreu/Öner 2020) sometimes producing significant results (Alabrese et al. 2019: 141), attesting to the need to review the contextual validity of both determinants in this 'family'.

Values – Universalism & Conservationism

Somewhat differing from the arguments around the domestic and the personal situation are the determinants focusing on *values* for explaining the outcome of Brexit. Here, the argument is that these values "predicted voting decisions through their impact" (Van de Vyver et al. 2018: 76) on other determinants. Therefore, personal traits and their regional distribution are seen as "important determinants of regional differences in voting outcomes, even when we control for more standard economic and demographic explanations" (Garretsen et al. 2018: 172), making this 'family' possibly the one with the most pressing need for a review of its contextual validity.

As the defining feature of values is "their stability over the life course, their fundamentally personal, motivational characteristic" (ibid.: 3) which in turn "makes them predictors for both political and non-political attitudes and behaviour" (ibid.), scholars then focus on 'universalism'/'openness' and 'conservationism' (Schwartz et al. 2012) as influential determinants for the individual's vote decision, with universalists more likely to vote remain and conservationists more likely to vote leave in the referendum (Dennison, Davidov et al. 2020; Hanel and Wolf 2020). However, the strong association between these values and other determinants (Goodwin/Heath 2016a: 325) could affect their (significant) influence on voting decisions, which is important to keep in mind when interpreting their effect.

Socio-Demography

Another group of determinants – closely related to the other 'families' – are subsumed here under 'socio-demography':[7] age, education, ethnicity and gender are argued to have influenced the voting decision (Hayes 2018; Henderson et al. 2021: 1503; Manners 2018: 1215). High levels of education are "a more influential driver of support for the EU" (Clarke et al. 2017: 442), even though the actual differences between education levels remain somewhat unclear (Antonucci et al. 2017). There is some indication that education might be one of the factors not varying between contexts (Murphy 2016: 849), making the inclusion of this determinant especially interesting.

Furthermore, "it is now apparent that the Brexit vote was indeed influenced by age" (Crescenzi et al. 2018: 118), making this variable another important determinant. However, some authors have found a non-linear relationship here (Liberini et al. 2017: 14). Still, there is good indication that age influenced the Brexit vote, with older people opting to vote leave (Tubadji et al. 2021: 250). Furthermore, gender has also often been argued to have influenced voting decisions (Green/Shorrocks 2021) with men more likely to support 'Leave', even though, again, the results are mixed (Halikiopoulou/Vlandas 2018: 1). Lastly, the role of ethnicity has gained some traction in the literature as well (Favell/Barbulescu 2018), as "the case for Brexit was intimately bound up with questions of race" (Virdee/McGeever 2018: 1808), and "Black and ethnic minority voters were 18% more likely to support Remain" (Manners 2018: 1215). Therefore, the inclusion of ethnicity is merited, as uncovering contextual variation would be of special interest here.

The Puzzle

Regional Differences and Determinants of Support for Brexit

As the various parts of the United Kingdom voted (on aggregate) differently in the Brexit referendum, splitting into (more or less) 'remain' (Scotland, Northern Ireland and London) and 'leave' regions (England and Wales), questions arose around the causes for the outcome of the referendum in general, but only sparsely around the reasons for this regional split (for an important exception see for instance: Henderson et al. 2021). Hence, scholars are aware that "the regional dimension was […] important" (Fidrmuc et al. 2016: 2), but many either only look at the different regions on their own (Gormley-Heenan/Aughey 2017; Wilson 2020), solely focus on identity as an explanation for differences (Wellings 2018), include regional 'dummy variables' (Garretsen et al. 2018) or employ only descriptive analysis (McEwen 2018). However, Henderson et al. (2021) – one of the only

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[7] Or 'standard controls'.

groups of scholars thoroughly investigating regional differences – convincingly argue that "national–territorial variation in support for Remain/Leave was a defining feature of the 2016 referendum" (ibid.: 1503) and not accounting for this variation is, hence, problematic (ibid.).

What remains unanswered, therefore, is "the extent to which the observed regional variations in the vote are due to variations in the composition of the electorate across locations, or whether they are due to contextual effects" (Abreu/Öner 2020:1448)

Two possible arguments then present themselves, both of which are related to the explanatory determinants. Firstly, if determinants exhibit the same influence for both regions, variation in support could be the result of different distributions of individuals across the scales and categories of these determinants. Secondly, however, if the effects vary between regions (de Ruyter et al. 2021: 93), this could point to a lack of contextual validity and the need for a review of theoretical arguments

This, thus, leads to the aforementioned research question: *"How do determinants of support for Brexit vary between "Leave" & "Remain" regions?"*. However, because of the already alluded-to limitations and the huge variety of possible determinants influencing individual voting decisions, this article does not aim to explain in all-encompassing detail what influences support for Brexit; it merely constitutes an initial attempt to investigate the contextual validity and regional differences.

Assumptions, Expectations & Proposition

As a result of the detailed objective of this article, the proposed research design is accompanied by one major assumption: that there are certain differences between and shared features within the two conceptualized 'regions' that allow for their grouping when investigating contextual validity. While this assumption may rightfully be criticized, it should still be justifiable given the explorative aim of this article, without the goal of establishing generalizable results.

Given the puzzle outlined above, my research is guided by one overarching proposition:

The determinants of support for Brexit possess contextual validity. This means they show no substantial differences in their effects between 'leave' and 'remain' regions.[8]

Additionally, I expect the following effects to be present: a strong British identity, adverse feelings to immigration, lower trust in politicians, dissatisfaction with public services/institutions, precarious economic circumstances and satisfaction, lower education, age and being male, as well as strong conversationist values are associated with a higher likelihood of voting for Brexit, while universalists and individuals belonging to an ethnic minority are less likely to vote for Brexit.

Research Design

To answer the research question and test my proposition, I utilize a comparative quantitative research design. As this article has an explorative aim and because of its limited scope, I focus on a comparison between RR[9] and 'LR.[10] While this selection limits the potential generalizability of the findings, given the restriction of contexts, it does not hinder the goal of this article, which is not to produce conclusive results, but rather to serve as the starting point for further research on the important, but still under-researched variation of determinants between regional contexts.

Dataset & Samples

The dataset of the subsequent empirical analysis is comprised of data from the European Social Survey's 8th round (ESS8, 2016), which not only provides well-coded data but also comes with disaggregated and well-coded Stata datasets, including weights and PSUs to allow for complex-survey methods. The subsequent analysis is then divided into two samples – RR (London, Scotland and Northern Ireland) and LR (rest of England and

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[8]   The H0 proposition being that there is a substantial difference between their effects, substantial meaning different significance, opposite directions of effects or large differences in effect size.

[9]   Scotland, London, and Northern Ireland.

[10]   Rest of the UK.

Wales) – which are investigated separately. However, the huge disparity between sample sizes – Leave: ~1350, Remain: ~350 – significantly limits the external validity of any results and needs to be taken into consideration when interpreting them, even though the survey design of the analysis should somewhat mitigate this problem.

Methodology

The empirical analysis employs a two-fold structure. First, the distribution of (some) determinants is descriptively analysed for both regions as a way two find initial cues for the first argument. Subsequently, multiple survey-regression analysis is used to investigate the differences in the effect of the aforementioned determinants.

Descriptive Statistics

For the two regions in question, the differences in mean values of the determinants and subsequently the distribution of some of the major determinants are shown to investigate the argument that differences in voting outcome might result from a variation in their dispensation. The combination of mean comparison with significance tests and analysis of distribution aims to mitigate the effect of the divergent sample sizes, as this could otherwise not be ruled out as an explanation for possible variation.

Multivariate Statistics

For the multivariate analysis I utilize multiple logistic survey regression. The survey regression weights respondents' answers so that they are representative for the overall population.[11] Additionally, the use of survey regression also means that an investigation of influential cases is not necessary, and the precondition of autocorrelation can be dropped, making model building much easier.

Dependent Variable

Since the aim of this article is to investigate the contextual variation and the effect of determinants of support for Brexit, I utilize a dummy variable measuring whether a respondent voted for 'remain' (x=0) or voted leave/did not participate the referendum in a valid way (x=1).[12]

Independent Variables

Since there is no single variable of interest present in my analysis, I include multiple independent variables serving as indicators for the outlined theoretical approaches, which are treated as equally relevant alongside some (standard) control variables.[13]

To test the effect of anti-immigrant sentiments, I construct an index out of the row means of three variables measuring if a respondent supports allowing different types of immigrants[14] to come to the UK (see for instance: (Dennison et al. 2020). For the determinants relating to the domestic situation, I include two variables already included in the ESS. To measure the 'anti-politics' sentiment, I operationalize *trust in politicians* as a proxy. While this does not cover all of the dimensions included in *anti-politics* (Fox 2021), it should still cover the influence of this 'sentiment' as elaborated above. Satisfaction with domestic institutions/public service is again operationalized through another proxy. Here, I utilize a variable measuring how an individual evaluates the state of the health service, in this case the NHS, which, as previously mentioned, was a focal point in the referendum campaign (Clarke et al. 2017: 440).[15]

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[11] In my case the population of the UK over 18.

[12] For an overview of the distribution of 'leave' and 'remain' votes in the two regions see Table 2., appendix p. iii.

[13] An overview of the variables included in the analysis can be found in the appendix, p.iii

[14] "Immigrants of different race/ethnic group from majority", "immigrants of same race/ethnic group as majority", "immigrants from poorer countries outside Europe"; see appendix, p.iii

[15] Coded from 0 "Extremely bad" to 10 "extremely good".

When it comes to voters' personal situation, I include one variable for the economic considerations and another one for personal satisfaction. Diverging from other studies (see for instance: Halikiopoulou/Vlandas 2018), I do not include income as a determinant, as the variable would lead to too many observations excluded from the analysis. Instead, I opt for a variable measuring how a respondent evaluates their subjective economic situation which should capture the arguments brought forward by the proponents of the 'left behind' in a more accurate way (Antonucci et al. 2017). Personal satisfaction in turn is measured by a variable ranging from 0 "extremely dissatisfied" to 10 "extremely satisfied". Furthermore, for the operationalization of values I follow Dennison et al. (2020) by including two variables created through a factor analysis, measuring conservationism and universalism respectively (ibid.: 5).[16] Lastly, for the socio-demographic determinants, I include a variable with three categories (low, middle, high) for education, two variables measuring age and gender, as well as a dummy-variable measuring whether a respondent belongs to the majority of the country as a proxy for ethnicity.

Limitations

Given the mostly explorative nature of this article, some major limitations affecting the research design and the generalizability, as well as the explanatory power of the analysis need to be discussed before commencing with the presentation of the results. The first major limitation of this article is the assumption already mentioned in the previous section. While the three regions have sometimes been described together (Alaimo and Solivetti 2019: 649), they still are mostly not investigated as one group. However, the already mentioned skewed sample sizes and the explorative nature of this article justify the investigation of mere 'Leave' and 'Remain' regions. Additionally, while the analysis groups the regions together, it still allows for the inclusion of individuals from Northern Ireland, something that many other studies fail to do completely (Henderson et al. 2017: 633). Still, it is important to keep in mind that the difference in vote shares between the regions are not that immense (Wellings 2018: 152), possibly impeding the likelihood of variation in contextual validity. Furthermore, the immensely unequal sample sizes – as previously mentioned – additionally limit the analysis, as the weighting process of the smaller sample ('Remain') could lead to bigger standard errors and therefore a higher likelihood of insignificant results, which is why I mostly focus on effect size and direction of effect when interpreting.

A different type of limitation is the restricted scope of my article. As the Brexit "is multi-causal and multi-faceted" (Becker et al. 2017: 605), I cannot investigate the possible variation of influence of **all** possible determinants discussed in the literature (see for instance: Crescenzi et al. 2018) and can also not claim generalizability or provide any causal explanations. Furthermore, as with all survey research, there is some possibility that results may be influenced by interviewer effects and skewed by preference falsification (Dennison et al. 2020: 10; Kuran 1995). Lastly, one other limitation is the exclusion of a prominent factor – national identity – which has received a lot of attention in the literature. While some authors argue, that many Eurosceptics focused "on the apparent threat to Britain and Britishness posed by 'Brussels'" (Henderson et al. 2016: 194) when reasoning for a 'Leave' vote, alluding to a connection between 'national identity' and support for Brexit (Carl et al. Evans 2019: 286), leading some scholars to conclude that "people with strong national identity are less supportive of European integration" (Hobolt 2016: 1265). However, because that "it cannot simply be assumed that British identity has a uniform meaning across all the territories of Britain (let alone the United Kingdom)" (Henderson et al. 2017: 635) the data available for the analysis[17] made it impossible to operationalize identity in an internally valid way, leading to the exclusion of the determinant to avoid possible measurement errors.

Results and Discussion

Distribution of Determinants – "Leave" & "Remain"

For both regions under investigation, significant differences in the distribution of determinants are observable, which could serve as an early indicator that the first argument outlined in the Puzzle section might be merited,

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[16]   See appendix, p.iv

[17]   The European Social Survey does only ask "How emotionally attached do you feel to [country]" (European Social Survey 2016; 64)

which could also point towards possible contextual validity of the determinants under investigation. First, the mean values of all variables under investigation – except for the anti-immigration feelings index – significantly vary between both regional samples,[18] showing not only a possible distributional variation, but also that this variation (for the most part) should not have resulted from sampling or the weighting of the data, but rather results from differences in the *general population* of both regions. Taking a closer look at some determinants then reveals some possibly influential differences, at least for some of the variables under investigation. For instance, when it comes to attitudes towards immigration[19], it becomes obvious that sentiments in the RR, were much more positive. For instance, while ~25% of all respondents in the RR thought that the UK should accept many immigrants from different, non-majority ethnic backgrounds, the same is only true for about 14% in the LR. Additionally, only around 4% want the UK to allow none of these immigrants in RR, while the figure is around 7% in the LR. A similar distribution is visible when it comes to immigrants from the same ethnic backgrounds. Here, ~27% of respondents in RR hold the opinion that "many" should be accepted while the same is only true for 16% in LR. Moreover, there is another difference in the "allow none" category with 3% and 5% respectively. Lastly, the divergence between both regions is most blatant when it comes to immigrants from "poorer Eastern European countries", where 70% of respondents in RR want the UK to allow many or some, while the same is only true for around 61% in LR. While these differences are noteworthy and hint at support for the first argument, it is still important to keep in mind however, that the index is one of the few variables not exhibiting a Wald-test result indicating that the mean differences are not by chance. Still, the difference in distributions is also visible for other determinants. For instance, trust in politicians[20] exhibits some variety with around 42% of respondents scoring on 0 (No trust) or the next highest category in RR while the same is true for 45% in LR. Additionally, ~24% in RR either indicate "complete trust" or the second highest category and only ~21% in LR. Although these differences are not massive, they could still prove to have been decisive, as the margins of victory in both regions were not very large, meaning slight variation in distribution could have – should contextual validity be present – played a significant role. Furthermore, there was also some variation in the distribution of economic evaluations.[21] While ~50% reported that they live comfortably on their present income in RR the same is only true for ~46% in LR. Additionally, only around 9% of respondents reported either struggling or finding it difficult to cope with their income in RR and 12% in LR. Regarding most of the other determinants, the significant differences in mean values all point towards a distribution that would be in accordance with the expected effects of the variables, with RR showing higher mean values in education, universalism, (very slightly) life satisfaction as well as positive evaluations of the state of the NHS and displaying lower values in conservationism.

While these results already point towards the fact that contextual validity of determinants might be present (at least for the not ideal sample division), they do not allow for the verification of said validity of the effects of determinants, which are covered by the multivariate analysis discussed in the following section.

Effects of Determinants on Support for Brexit – "Leave" & "Remain"

The regression analysis produced some tangible results that could possibly indicate that contextual **invalidity** might be present, consequently, leading to a (restricted) rejection of the proposition. However, given the already-outlined limitations, the results are not generalizable, and the interpretation focuses mostly on the direction of effects, as well as the coefficient size and to a lesser degree on the significance levels. The effect[22] of the 'anti-immigration' sentiment pointed into the expected direction with people in both regions very highly significantly (p<0.001) more likely to vote for Leave the higher they scored on the index. Interestingly, the coefficient is much higher in RR, which could point at a stronger influence of that determinant in those regions. Next, trust in politicians also points in the expected direction in both regions, with respondents becoming less likely to have voted for Brexit when displaying higher trust in politicians.

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18 See Table 2, appendix p.iii
19 See Figure 1, appendix p.iv
20 See Figure 2, appendix p.iv. Here recoded onto a five-point scale and resembling the "anti-politics" sentiment.
21 See Figure 3, appendix p.v
22 All effects are always interpreted under control of all other variables in the models.

Table 1: Effect of Determinants – 'Leave' and 'Remain'

	Leave Regions	Remain Regions
Opposition to Immigration	0.944*** (0.110)	1.567*** (0.214)
Trust in Politicians	-0.0753* (0.0338)	-0.0344 (0.0882)
Evaluation of State of NHS	-0.0435 (0.0309)	0.0538 (0.0637)
Subjective Economic Situation	0.146 (0.108)	0.159 (0.250)
Life Satisfaction	-0.0542 (0.0388)	0.174* (0.0748)
Universalist Values	-0.363*** (0.106)	-0.259 (0.250)
Conservationist Values	0.354*** (0.0966)	0.0823 (0.196)
Age	0.0152*** (0.00424)	0.00546 (0.00990)
Education		
intermediate	0.163 (0.209)	-0.309 (0.415)
high	-0.649*** (0.172)	-1.003** (0.361)
Belonging to Minority	-0.321 (0.270)	-0.366 (0.502)
Female	-0.234~ (0.122)	0.104 (0.317)
Constant	-1.498* (0.638)	-5.163*** (1.051)

Observations	1449	361

Standard errors in parentheses

Notes: Standard errors are estimated with Stata's SVY command to account for clustered and stratified survey design. Weighted (sampling weights adjusting for differential selection probability and nonresponse). Pseudo R2 not reported due to survey design.

~ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

However, the effect is only significant ($p<0.05$) in 'Leave', not allowing for any conclusion on the actual influence of this determinant to be drawn, and the coefficient sizes vary as well. Interestingly, the effect of the proxy measuring satisfaction with domestic institutions/public service points in different directions for both samples, which could indicate possible invalidity. Here, the coefficient is negative in LR, with people evaluating the state of the NHS more positively less likely to vote for Brexit, but surprisingly the coefficient is **positive** for RR, meaning the better a respondent evaluated the NHS's situation, the **more likely** they were to vote leave. Nonetheless, the effects are not significant, making it impossible to infer any generalizations. Furthermore, while the effect of the economic situation proxy points into the expected direction and is almost identical for both regions, both coefficients are not significant, possibly indicating that economic considerations might not have played such an important role in individual voting decisions. Interestingly, the coefficients for the personal satisfaction proxy again point into different directions with people in RR (significantly) more likely to vote **for** Brexit the more satisfied they are, contrary to the expectation, while the effect was negative but insignificant for LR which again could indicate invalidity. When it comes to the values 'family', both variables point into the expected direction, with universalist respondents *less* and conservationist respondents *more* likely to vote for Brexit in both samples, even though the effects are only (very highly) significant in LR, which could point at a lower importance of values in RR but could also result from the very small sample size. For the socio-demographic variables the effects were mixed. Age and belonging to an ethnic minority both confirmed the expectation with older people more likely to vote for Brexit in both regions, even though the effect is only significant for LR ($p<0.001$). Additionally, people from non-majority backgrounds were less likely to vote for Brexit in both regions, albeit insignificantly. The effects for both education and gender were inconsistent though. While highly educated respondents were (very) highly significantly less likely to vote for Brexit in comparison to people with low education – though the effect sizes again vary – individuals with intermediate education were **more** likely to vote for Brexit than respondents with low education in LR but less likely in RR, something that a) might indicate contextual invalidity and also could point at only marginal differences between the influence of low and intermediate education (Antonucci et al. 2017: 212), though the effects are again insignificant. Lastly, the effect of gender also varied, with women being (slightly significantly) less likely to vote for Brexit than men in LR but (insignificantly) more likely in RR.

Before consolidating the analysis' findings and outlining possible implications and possible next steps in further research, some remarks about the overall model quality are in order. Both models passed goodness-of-fit tests, indicating a correct model specification. Moreover, though the survey linear regression does not require homoscedasticity and cannot suffer from autocorrelation, it still requires testing for multicollinearity, which was very slightly present through the inclusion of the ethnic minority variable. As the values were not as high over the threshold, the models should nonetheless be well-fitted, suffering only from negligible flaws that would not impede the presented results.

Conclusion

The explorative objective of this article was to investigate the possible variation of the influence of determinants of support for Brexit between 'Leave' and 'Remain' regions. To answer this question, the differences between those regions – London, Scotland and Northern Ireland on the one side and Wales + the rest of the UK on the other – were outlined in the first part. Thereafter, some of the most prominent theoretical approaches and their resulting determinants guiding the empirical analysis were discussed in the second part. Next, the puzzle under investigation was detailed by expounding on the possible differences between a) the distribution of determinants and b) the possible different effects of said determinants in the regions. Additionally, the main proposition "*The determinants of support for Brexit possess contextual validity. This means they show no*

substantial differences in their effects between 'leave' and 'remain' regions", which was subsequently (mostly) rejected through the multivariate analysis, was presented. After detailing the sampling strategy and the research design, the variation in distribution as well as in influence of determinants were analysed.

In the last section, the descriptive analysis showed that the distribution of determinants varied significantly between the regions indicating that this divergence could possibly be responsible for the different outcomes in the Brexit vote.

However, the multivariate analysis indicated that while some of the included determinants were consistent across both regions, notable differences were still present with significance levels, effect directions and coefficient sizes varying between the samples. Therefore, these results point to the fact that contextual validity might not necessarily be present when it comes to individual level determinants. Nonetheless, the major limitations of this article's research design, already detailed above accompanied by the non-generalizability of the findings and the explorative aim, means that all results need to be interpreted with great caution and should just be seen as merely a very basic starting point for further research. As "several scholars have interpreted Brexit as an example of failure in the decision-making process" (Betti 2021: 78), and given the fact that both this analysis as well as most other publications do not scrutinize individuals that did not vote as their own group (de Ruyter et al. 2021: 78), qualitative methodology presents itself as a promising starting point to broaden the perspective on influence of determinants in general and contextual validity in particular.

Additionally, possible starting points for further research could be panel analyses and more district specific samples to gather more precise data that would go beyond the scope of this article and would allow for more definitive empirical evidence for the contextual (in)validity of the proposed determinants in the literature. Here, a stronger focus should also be on the very often neglected case of Northern Ireland.

In conclusion, while this article has shed light on the issue of contextual (in)validity of determinants of support for Brexit, it only provides the foundation upon which further research can build.

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Appendix

Variable-Operationalization Table

Variable	Description/Original Statement	Values	
Vote in Brexit Referendum	Vote in EU referendum	0 = Remain 1 = Leave/ Non-Participation	Dependent Variable
Anti-Immigration Sentiment	The variable is an index-variable created from the row-mean values of three variables measuring respondents attitude towards letting in different types of immigrants into the UK	1 – 4 (12 categories)	Determinant
Trust in politicians		0 (no trust at all) to 10 (complete trust)	Determinant
State of the NHS	State of health services in the country nowadays	0 (extremely bad) to 10 (extremely good)	Determinant
Subjective economic evaluations	Feeling about household's income nowadays	1 = Living comfortably on present income 2 = Coping on present income 3 = Difficult on present income 4 = Very difficult on present income	Determinant
Life satisfaction	How satisfied with life as a whole	0 (extremely dissatisfied) to 10 (extremely satisfied)	Determinant
Universalism	The variable was created through a factor analysis with a promax rotation with the variables "Important that people are treated equally and have equal opportunities", "Important to understand different people" and "Important to care for nature and environment" loading on the factor	-4.03 (lowest display) to 1.51 (highest display)	Determinant

Conservationism	The variable was created through a factor analysis with a promax rotation with the variables "Important to follow traditions and customs", "Important to behave properly", "Important to do what is told and follow rules", "Important that government is strong and ensures safety" and "Important to live in secure and safe surroundings" loading on the factor	-3.3 (lowest display) to 1.76 (highest display)	Determinant
Age		People under 18 excluded	Determinant
Education	Variable is recoded to three categories according to ISCED levels	0 = low 1 = intermediate 2 = high	Determinant
Belonging to ethnic minority		1 = yes 2 = no	Determinant
Gender		1 = Male 2 = Female	Determinant

Descriptive Analysis

Table 2: Distribution of leave and remain vote (in %) in regions

	Remain Regions	Leave Regions
Leave vote	43%	58%
Remain vote	57%	42%

Table 3: Mean Values Differences & Significance Level Adjusted Wald Test

Variable	Mean Value
Anti-Immigration Sentiment	2.073924 (RR) 2.251754 (LR)
p-Value	0.0019
Trust in Politicians	3.860126 (RR) 3.75137 (LR
p-Value	0.502
State of the NHS	5.797311 (RR) 5.781323 (LR)
p-Value	0.92
Subjective economic evaluations	1.609177 (RR) 1.692878 (LR)

p-Value	0.088
Life satisfaction	7.348515 (RR) 7.341057 (LR)
p-Value	0.95
Universalism	.0777209 (RR) -.0262592 (LR)
p-Value	0.077
Conservationism	-.027849 (RR) -.0550496 (LR)
p-Value	0.656
Education	1.186624 (RR) 1.128859 (LR)
p-Value	0.376
Belonging to ethnic minority	1.843879 (RR) 1.90999 (LR)
p-Value	0.014
Gender	1.503451 (RR) 1.51351 (LR)
p-Value	0.783

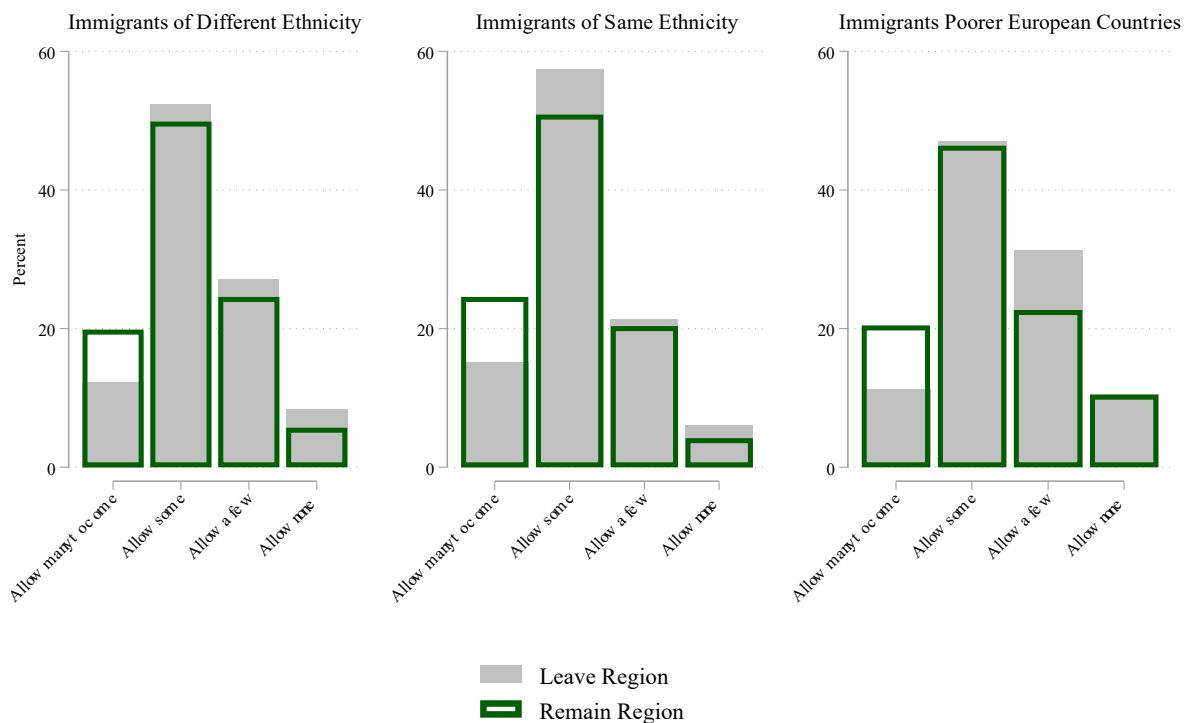**Graphical Display of Results**

Figure 1: Attitutdes toward Immigration

Figure 2: Trust in Politicians

Remain Regions

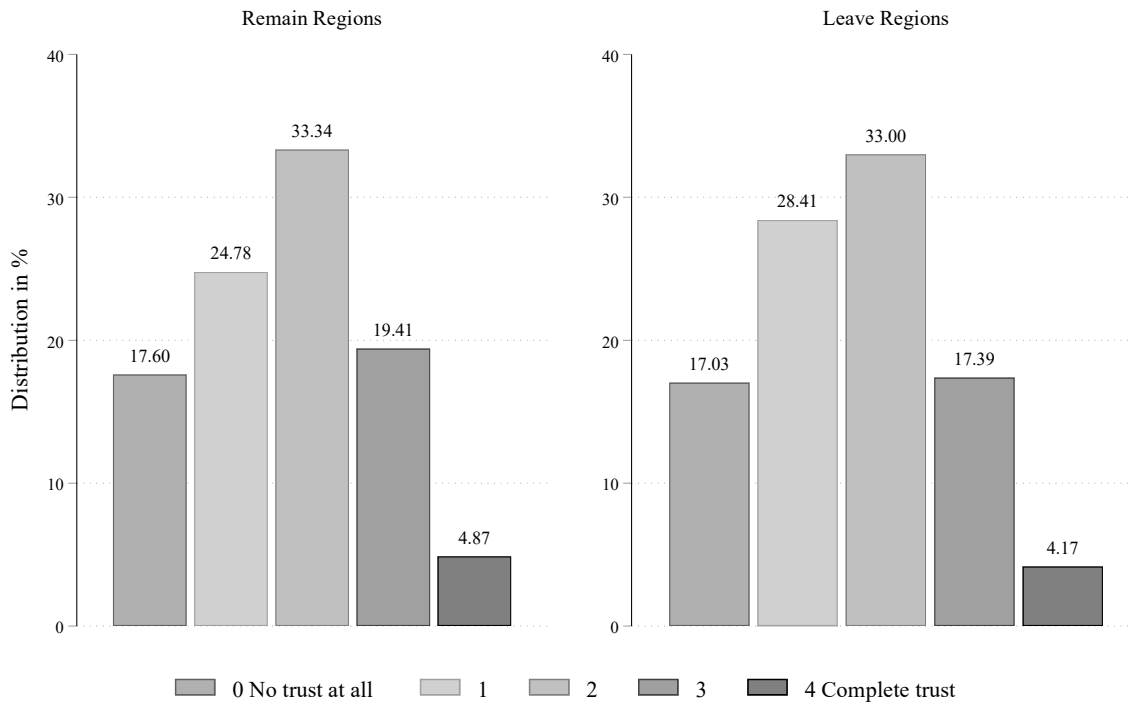Leave Regions

- 0 No trust at all
- 1
- 2
- 3
- 4 Complete trust

Figure 3: Subjective Economic Situation

- Living comfortably present income
- Coping on present income
- Difficult on present income
- Very difficult on present income