Did the UK country an individual was from effect their support for heavy focus on environmental policy in the 2019 UK general election?

Word Count: 3126

**Introduction**

Environmental policy is an ever-growing area of discussion with increasing importance. Governments around the world take different stances and place differing levels of urgency on it, even within different countries or regions of a particular state. The subject of this report is the United Kingdom, each of the Scottish, Welsh and English parliaments have taken slightly differing approaches, placing varying levels of importance on the subject. Environmental policy is one of the most pressing issues in modern society. The UN stated in 2019 that there was only eleven years until irreversible damage will be caused by climate change (United Nations, 2019). Therefore, it is imperative to translate this urgency to the general public and governments in the UK must do everything they can to mobilise their populations to prevent the irreversible damage being done to the planet. This report will take the information from the 2019 British Election Study on each of the countries in the UK’s respondents except from Northern Ireland as they don’t take the survey there and see if this influences an individual’s prioritisation of environmental policy. The report will conclude that although contradicting the theory Welsh citizen’s prioritised environmental policy the least and confirming the theory, Scottish citizens had the largest amount of importance placed on environmental policy. However, country of residence may not possess as much explanatory power as political left-right position or trust in politicians when it comes to environmental policy prioritisation.

**Literature review**

In terms of policy the UK government has devolved environmental policy to the respective parliaments of Scotland, Northern Ireland and Wales with Westminster being the central parliament for English environmental policymaking (Burns et al, 2018). Prior to the Brexit vote EU directives dictated UK environmental policy, however member states were encouraged to go beyond this if they desired, most notably Scotland and Wales in the UK had ambitious targets in the areas of climate change, energy policy and waste (Burns et al, 2018). The Northern Irish Parliament on the other hand has less focus on this policy historically with scandals including quarrying or mining without planning permission and cross-border dumping of waste (Burns et al, 2018). Research has shown that public perceptions of climate change in Western countries is typically that it is a distant threat that does not directly affect them (Brügger et al, 2015). This literature review section will look more in depth at each country’s perspective on climate change and what can be done to forge urgency around climate change in the UK.

In cross national studies done on 24 countries it was found that varying degrees of urgency were felt in relation to climate change (Weber, 2016). Due to the lack of actual warmth being hard to quantify for an average person there must be other ways to translate this change to the public. The agenda setting theory written by Walter Lippman, states governments can promote their policy through the media with a particular policy focus on a certain area known as ‘policy agenda’ which aims to translate a policy area’s importance to the public (Zain, 2014 and Lippman, 1922). In order for UK citizens to feel urgency for climate change the respective parliaments have to continually highlight its importance to the planet.

England’s environmental policies are constructed in Westminster, they have been heavily criticised for not being taken seriously as their goals are continuously not met and there is little emphasis from the parliament to tackle the climate crisis (Burns et al, 2018). This is likely to have a trickle-down effect as discussed by Lipmann (1922) governments should prioritise climate change and set a policy agenda in order to encourage people to mitigate climate change (Lipmann, 1922 and Zain, 2014). However, it can also illicit increased scepticism around climate change and it’s relevancy, something that is also associated with political conservatism (Tranter and Booth, 2015). Perhaps with a lack of action in comparison to other UK countries protects England from this, so the results may be generally neutral although the conservative voters within the England may be sceptical of climate change therefore there may be lower levels of environmental prioritisation in these communities.

In 2009 the Scottish Parliament passed at the time the most ambitious climate change legislation in the world, with high reaching targets on greenhouse gas emissions and was a landmark bill for the Scottish National Party (SNP) (Nash, 2020). The SNP have never slowed their pursuit of meeting their sustainability goals and tackling of climate change, in 2019 First Minister Nicola Sturgeon delivered a keynote speech at World Forum on Climate Justice in Glasgow (McGregor and Christie, 2019). This is an example of Lippman’s (1922) agenda setting theory by the Scottish Government which should translate to increased urgency around the issue. This makes Scotland a breeding ground for climate activism encouraging the rise of many activist groups such as the Scottish Youth Climate Strike, Extinction Rebellion and established Environmental NGOs (McGregor and Christie, 2019).

Wales’ environmental policy has a unique approach as it has a legal requirement for councils to promote sustainable development, however their ties to Westminster at this time significantly restrained their effectiveness (Allman et al, 2004). Allman’s article is out of date as it was published in 2004 however this highlights how important environmental policy is to the Welsh Parliament and it has deep roots of this importance. The Welsh Government are committed to improving environmental standards within the country and it has long been a focus of the parliament (Burns et al, 2018). Following Brexit, Wales committed to maintaining high levels of environmental standards and continue to improve upon the standards set by the EU (Burns et al, 2018).

**Theory and Hypotheses**

Given the approach from each of the devolved parliaments with each government placing differing importance on environmental politics. Based on the agenda setting theory by Walter Lippman (1922) the government’s that set a policy agenda focussed on climate change will encourage a similar response from their public more than states whose government does not place as much urgency on the issue.

Within the UK of the three parliaments focussed on, Scotland has placed the greatest emphasis on environmental policy with Wales also placing a lot of importance on the area. England on the other hand has less urgency around environmental policy and don’t seem as dedicated to follow goals and fail to set and track their milestones. The political alignment of each country according to the research conducted by Tranter and Booth (2015) should have an effect on the prioritisation of environmental policy amongst the public. As political conservatism at an individual level is associated with climate scepticism in theory a country with a conservative government (England) should have more climate sceptics than those with a left leaning government (Scotland and Wales). Due to this theory the results should show English citizens as having lower prioritisation of environmental policy than their Scottish and Welsh counterparts.

Hypothesis: Scottish citizens will place the most importance on environmental policy and English citizens will place the least out of the countries being analysed.

**Methods**

The data being used to complete the analysis and test the hypothesis will be the British Election Study (BES) from 2019. The sample size was 3,946 for the 2019 study and the responses were taken between December 2019 and July 2020. The surveys are conducted face-to-face with random samples of the public in each of the United Kingdom nations (Excluding Northern Ireland). The dependent variable of this research is the prioritisation of environmental policy, the BES survey asks respondents the following question which this data will be drawn from:

*“Thinking now about the environment, some believe that protecting the environment should have priority even if that reduces economic growth. Others believe that economic growth should have priority even if that hinders protecting the environment. What is your opinion?”*

This question allows a response on a scale of 0 to 10, with 0 being “Economic growth should have priority” and 10 being “Protecting the environment should have priority”. The responses will be split into each respective country in the United Kingdom in order to carry out the analysis. The survey allows for people to respond ‘Don’t know’ or to not state their opinion, both of these responses will be omitted as to not affect the results of the regression analyses.

The independent variable of this research is the country in the United Kingdom the respondent lives in. The dataset splits Great Britain up into 11 distinct regions, for the purposes of this research they will be recoded into 3 distinct values those being England, Wales and Scotland as Northern Irish citizens were not surveyed. Linear regression analysis will be conducted in order to test the hypotheses as they are effective at identifying relationships between variables (Bryman, 2016 p.339). I will be creating three dummy variables, each of which will code one of the countries as ‘yes’ and the other two countries as ‘no’ therefore isolating the country’s effect on the dependent variable.

The control variables being used are left-right position and trust in British politicians to ensure that the dependent variable responses are not explained more by these factors. Left-right position asks respondents where on the political spectrum of left wing and right wing they sit on a scale of 0 to 10 with 0 being ‘Left’ and 10 being ‘Right’. This question allowed for individuals to respond ‘Don’t know’, ‘prefer not to say’ or not state at all, for the regressions all three of these responses were omitted as to not skew results lower as they were coded negatively. Based on the research linking political conservatism and climate scepticism by Tranter and Booth (2015) we would expect the higher the score from this question the lower the score on the dependent variable. This is important to use as a control variable as people’s political stance may explain their place on the dependent’s scale more effectively than the independent variable. The second control variable is trust in British politicians generally, in the survey again respondents were asked to answer on a 0 to 10 scale with 0 being “No trust” and 10 being “A great deal of trust” again the values of ‘don’t know’ and not stated were omitted to not skew the results towards 0. This may influence the dependent variable as in countries where the environment has a strong policy agenda trust in politicians being high will also increase the prioritisation of environmental policy and the reverse effect will occur when the political trust is low.

The initial regressions ran will contain each of the dummy independent variables with the dependent variable, the results of which will be displayed in the first table. The second table will contain the results of the regression including the control variables. In this regression model the reference category being used will be England from the recoded country variable.

**Analysis and Results**

Table 1: Regression models 1,2 and 3

|  |  |  |  |
| --- | --- | --- | --- |
| Dependent Variable: Scale of economic and environmental importance | | | |
|  | Model 1 | Model 2 | Model 3 |
| England  (Reference = rest of UK) | -0.05 (0.1) |  |  |
| Wales  (Reference = rest of UK) |  | -0.27(0.14) |  |
| Scotland  (Reference = rest of UK) |  |  | 0.35(0.14)\*\* |
| N | 3150 | 3150 | 3150 |
| R-Squared | 0.00009 | 0.0012 | 0.0021 |
| Adjusted R-Squared | -0.0002 | 0.0008 | 0.0018 |
| Significance Level | 0.6 | 0.07 | 0.009\*\* |
| Constant | 6.72(0.09)\*\*\* | 6.7(0.043)\*\*\* | 6.64(0.043)\*\*\* |

\**p*<0.05, \*\**p*<0.01, \*\*\**p*<0.001

Table 1 displays the results from three regression models testing the dummy variables against the dependent variable.

English citizens are estimated to be 0.05 points closer to the economic growth prioritisation than the average of Scotland and Wales, however this is not statistically significant as p = 0.6 which is greater than 0.05 required for statistical significance. The R squared of the model is 0.00009 meaning it accounts of 0.009% of variation in economic vs environmental policy priority. Adjusted R squared of the model was 0.0002 meaning it accounts of 0.02% meaning that the model fit improves significantly however, still does not account for much variance.

Welsh citizens were estimated to be 0.27 points closer to economic prioritisation, however this also wasn’t a significant relationship as p = 0.07. The R squared is 0.00012 and the adjusted R squared is 0.0008 meaning the variation explanation changes from 0.12% to 0.08%. This means while better fit than model 1, the model only explains a small portion of the variation in the policy priority between the environment and economy and the model decreases only slightly when adjusted. Based on these results, one could say that living in England and Wales leads to a decrease in environmental policy prioritisation, however we can not say this conclusively as the results were not statistically significant.

Scottish citizens were estimated to be 0.35 points closer to the environmental policy should take priority than England and Wales, this difference is statistically significant as p<0.01. The R squared of the model is 0.0021 and the adjusted R squared is 0.0018, which explains 0.21% and 0.18% of the model respectively meaning when adjusted the model fit slightly declines but still higher than the first two models. So, living in Scotland is significantly positively associated with the prioritising of environmental policy. This suggests that the hypothesis is somewhat correct as it is the only of the three countries which moves closer to environmental prioritisation when tested against the other countries. However, England is closer to environmental prioritisation than Wales therefor the hypothesis is incorrect.

Table 2: Regression model 4, with the control variable of left-right position and trust in politics

|  |  |
| --- | --- |
| Dependent Variable: Scale of economic vs environmental importance | |
| Scotland  (Reference = England) | 0.33(0.12)\* |
| Wales  (Reference = England) | -0.1(0.14) |
| Left-Right position | -0.26(0.02)\*\*\* |
| Trust | -0.04(0.02)\* |
| N | 3147 |
| Multiple R-Squared | 0.062 |
| Adjusted R-Squared | 0.061 |
| Significance Level | 0. 00000000000000022\*\*\* |
| Constant | 8.1(0.12)\*\*\* |

\**p*<0.05, \*\**p*<0.01, \*\*\**p*<0.001

Table 2 displays the output from model 4, which continues using the original dependent and independent variable but includes two control variables, those being left-right position and trust in British politicians. Scotland sits 0.33 points closer to environmental priority than the reference category which is England in this model and is still statistically significant, however its significance has decreased with the inclusion of the two control variables. Wales on the other hand sits 0.1 points closer to economic priority but is not statistically significant. Reconfirming that the hypothesis is incorrect. The model fit has massively improved from the first table as at it’s highest in model 3 it accounted for 0.18% of the variance to 6.1% of the variance being accounted for in model 4. Since Scotland remains statistically significant it could highlight that it may have some explanatory factor in an individual’s prioritisation of environmental policy.

The control variable of Left-Right position is extremely statistically significant as p<0.001, it shows that for every 1 unit increase in left right position there is a 0.26 decrease in economic vs environmental scale. This means that as you place yourself more towards the right on the political spectrum your prioritisation of environmental policy decreases as was theorised previously. Trust in British politicians was also statistically significant in the model. The model displays that for every 1 unit increase in trust in politicians there is a 0.04 unit decrease in the economic vs environmental scale. Meaning the more you trust the government the less prioritisation you place on environmental policy. This could be due to environmental activists groups in particular in England will have distain for the lack of action being taken by their government. Due to the statistical significance of both control variables in particular left-right position one could conclude that this holds much more explanatory power than country of residence for environmental policy prioritisation.

The hypothesis has been proven incorrect, this hypothesis would have the countries ranked Scotland, Wales and England in terms of which places the most to least priority on environmental policy. The results showed both with and without control variables included, Welsh respondents placed the most importance on economic policy despite their parliament placing much greater urgency on the environment than Westminster.

**Implications and Conclusion**

Based on the results from these regressions the hypothesis is incorrect. Based on models 1 to 3 it seems the only country where being a resident influenced an individual’s prioritisation of environmental policy is Scotland as it was the only result that proved to be significant. Table 2 also highlighted that in fact left-right position and trust in British politicians are better explainers than resident country. This means no matter what country you live in within the UK these two control variables influence your prioritisation of environmental policy more. In terms of measurement the dependent variable may have some validity issues. Placing the environmental policy prioritisation on a scale against economic policy prioritisation does lead to some issues. It isn’t an exact measurement of environmental policy’s salience to an individual, due to their personal circumstances they may require economic assistance more immediately. This survey was taken from December 2019 to July 2020 which was a time of financial crisis for the UK as the country entered the Covid-19 lockdown which may significantly impacted an individual’s decision making.

Future study on this area would be benefitted by a more valid measurement of environmental prioritisation for an individual. Other factors since 2019 may impact people’s prioritisation of environmental policy. For example, in 2021 Scotland hosted the international climate event COP26, which hosts workshops and panels of experts and politicians from across the globe to discuss how to better safeguard the planet from its current trajectory. This may have caused big changes in public perspectives, in particular for Scottish residents. The research could also be improved with the inclusion of Northern Irish respondents as Northern Ireland could provide interesting results due to their parliament’s neglect of environment policy briefly described in the literature review. Separate research should also be conducted using left-right position and trust of politicians as the central independent variable due to the level of statistical significance they had in the model 4 regression.

Overall, this report has tested whether the United Kingdom nation a person lives in has an effect on how much they prioritise environmental policy. The literature review allowed for creation of theory and hypotheses. The analysis suggested the hypothesis was incorrect. Therefore, our findings showed that Scottish citizens tend to have a higher level of prioritisation of environmental policy than those who reside in either England or Wales, but Wales ranked last which goes against the agenda setting theory by Walter Lippman. However, with the addition of control variables it appears there are variables within the dataset that provide stronger explanatory power than country of residence. So, while country of resident in regard to Scotland does have some explanatory power, people are more influenced by their left-right political position or level of trust in politicians to determine the level of prioritisation they have of environmental policy.

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Appendix:

rm(list=ls()) # removes all objects from current workspace

setwd("/Users/kieranmcavoy/Documents/Data Science/Quant 1/Research report")

install.packages("haven")

library("haven")

BES2019 <- read\_sav("bes\_rps\_2019\_1.1.1.sav")

options(scipen = 999)

#Removing missing values from Dependent variable

table(BES2019$h01)

BES2019$ENV <- BES2019$h01

BES2019$ENV[BES2019$h01== -999] <- NA

BES2019$ENV[BES2019$h01 == -1] <- NA

#Now checking to ensure it has done this correctly

table(BES2019$ENV)

#Removing missing values from control variable

#First check for missing values in each of them

table(BES2019$n03)

table(BES2019$e01)

BES2019$trust <- BES2019$n03

BES2019$trust[BES2019$n03== -999] <- NA

BES2019$trust[BES2019$n03 == -1] <- NA

BES2019$leftright <- BES2019$e01

BES2019$leftright[BES2019$e01== -999] <- NA

BES2019$leftright[BES2019$e01 == -1] <- NA

BES2019$leftright[BES2019$e01 == -2] <- NA

#Now checking to ensure it has done this correctly

table(BES2019$trust)

table(BES2019$leftright)

#Check for missing value in independent variable

table(BES2019$region)

#Create a subset in order to run regressions while creating dummy variables

keep <- c("ENV", "region","leftright","trust")

BESsub1 <- BES2019[, keep]

table(BESsub1)

BESsub1 <- na.omit(BESsub1)

as.numeric(BESsub1$ENV)

#Recode the region variable into the three countries being tested

BESsub1$country <- NA

BESsub1$country[BESsub1$region == 1] <- "England"

BESsub1$country[BESsub1$region == 2] <- "England"

BESsub1$country[BESsub1$region == 3] <- "England"

BESsub1$country[BESsub1$region == 4] <- "England"

BESsub1$country[BESsub1$region == 5] <- "England"

BESsub1$country[BESsub1$region == 6] <- "England"

BESsub1$country[BESsub1$region == 7] <- "England"

BESsub1$country[BESsub1$region == 8] <- "England"

BESsub1$country[BESsub1$region == 9] <- "England"

BESsub1$country[BESsub1$region == 10] <- "Wales"

BESsub1$country[BESsub1$region == 11] <- "Scotland"

class(BESsub1$country)

#use the previously created country variable to create the three dummy variables

BESsub1$England <- NA

BESsub1$England[BESsub1$country == "England"] <- "yes"

BESsub1$England[BESsub1$country == "Wales"] <- "no"

BESsub1$England[BESsub1$country == "Scotland"] <- "no"

BESsub1$Wales <- NA

BESsub1$Wales[BESsub1$country == "England"] <- "no"

BESsub1$Wales[BESsub1$country == "Wales"] <- "yes"

BESsub1$Wales[BESsub1$country == "Scotland"] <- "no"

BESsub1$Scotland <- NA

BESsub1$Scotland[BESsub1$country == "England"] <- "no"

BESsub1$Scotland[BESsub1$country == "Wales"] <- "no"

BESsub1$Scotland[BESsub1$country == "Scotland"] <- "yes"

#Run the three linear regression models

model1<-lm(formula = ENV ~ England, data = BESsub1)

summary(model1)

model2 <- lm(formula = ENV ~ Wales, data = BESsub1)

summary(model2)

model3 <- lm(formula = ENV ~ Scotland, data = BESsub1)

summary(model3)

#Run the regression model with the inclusion of the control variables

model4<-lm(formula = ENV ~ country + leftright + trust, data = BESsub1)

summary(model4)

#simple regression with the full variable country to create visualisation

model0 <-lm(formula = ENV ~ country)

install.packages("margins")

library(margins)

#QQ plot to check the distribution of residuals

qqnorm(model4$residuals, main = "Figure 2: QQ Plot of The Residuals in Model 4")

qqline(model4$residuals,col="red")

#`Check the fitted values for bias `

plot(y=model4$residuals, x=model4$fitted.values,

xlab="Fitted Values", ylab="Residuals", main = "Figure 2: Model 4 Residuals Against Fitted Values")

abline(a=0, b=0, col="red")

margins.model <- margins(model0)

plot(margins.model0, xlab = "Independent Variables", main = "Figure 1 Coefficient Plot of the dependent and independent variables")

#Create Breusch Pagan Test

install.packages("lmtest")

library(lmtest)

bptest(model1, studentize=FALSE)