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Is Climate Change More Serious than International Terrorism? Evidence from European Countries

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Abstract
Climate change is one of the greatest threats to the environment and life on Earth. Extreme weather and climate events, such as wildlife fires, heatwaves or flooding are becoming increasingly common both in Europe and the rest of the world. Therefore, the main goal of this study is to investigate citizens' perceptions and awareness of climate change across Europe in the wake of this global climate crisis. The main items analysed are awareness of climate change, perceived seriousness of climate change and pro-environmental behaviour. The main results highlighted that almost 8 in 10 Europeans consider climate change to be a very serious problem and the majority of them ranked it as the 2nd most serious global issue below poverty and hunger and above international terrorism. Data analysis also revealed that people are taking more individual actions to fight climate change compared to previous years. The data analysed is part of the Eurobarometer 91.3 survey from 2019. Main similarities and differences are explored between countries revealing the heterogeneous nature of public attitudes towards climate change. Comparisons are drawn based on various factors, including socio-economic context and level of exposure to extreme weather events. These findings have important implications for policy makers and can be used as support for developing specific European and local initiatives aimed at raising awareness and education on climate change topics.

Keywords: Climate change, awareness, Europe, global warming, environmental crisis.

JEL classification: M31.

1. Introduction

Considering the on-going environmental degradation, many social activists (Klein, 2019; Thunberg, 2019), natural researchers (Attenborough, 2020) or experts in social marketing and consumer behaviour (Martinez et al., 2021) believe that the Earth can no longer sustain humanity. The past decade was the hottest ever recorded globally while 2020 represented the warmest year on record until present (Brown, 2021). The impact of climate change is already observed across the world and extreme weather and climate events, such as wildlife fires, heatwaves, floods or droughts are expected to become even more frequent and intense in the near future. Many of the problems associated with climate change are considered to be the negative consequences of human activity. Therefore, considering that our daily habits are causing the extinction of life on Earth, it is both vital and useful to understand people's attitudes and perceptions towards climate change. As highlighted by Baiardi and Morana (2021), "understanding climate change attitudes is an important and urgent task, since in democratic systems the legitimacy of political decisions on climate change mitigation actions relies on the support of public opinion" (p. 2).

There are two main limitations when it comes to the current consumer studies on climate change awareness. First of all, most of these papers focus on individual country analyses, while cross-national differences in climate change awareness are not studied sufficiently. Second of

all, environmental studies tend to cover general green issues, without discussing specific problems such as climate change or global warming. Therefore, the main goal of this paper is to cover these overlooked areas in the literature by offering a fresh and cross-cultural comparative outlook on the topic of climate change awareness in Europe. The paper is arranged in the following way. It starts with a discussion on climate change implications in Europe and a literature review on current research regarding climate change awareness. Following that, the research methodology is presented and key findings are discussed. Finally, the study ends with a conclusion highlighting study limitations and recommendations for future studies.

2. Literature review

2.1. Climate change implications in Europe

Climate change is a global phenomenon that can be explained as a significant change in the measures of climate, such as temperature, rainfall or wind, lasting for an extended period, decades or longer (Environment Protection Agency, 2020). Scientists attribute the global warming trend associated with climate change and observed since the mid-20th century to the human expansion of the greenhouse effect, defined as warming that results when the atmosphere traps heat radiating from Earth toward space (NASA, 2020). According to the latest data from the European Environment Agency (2020), greenhouse gas emissions in the European Union decreased by 24% between 1990 and 2019, exceeding the target of a 20% reduction from 1990 levels by 2020. To add more, as highlighted by the European Green Deal, European Union (next EU) aims to be climate-neutral by 2050 (European Commission, 2020). Therefore, Europe is considered to be the leader in the global fight against climate change.

At the same time, Europe is one of the most affected regions by climate change. Unfortunately, the European State of the Climate for 2019 revealed that Europe is warming up at a higher rate than the global average (Euronews, 2020). Countries in the Mediterranean area are particularly affected by global warming, with rising temperatures above average and droughts which threaten agricultural and water resources. The rest of Europe has also suffered from heatwaves, considering for example the 2019 extreme high temperatures in Germany or Poland, the 2018 wildfires in Sweden and other Nordic countries or the recent toxic algae invasion in the Baltic Sea. There are many factors that influence these extreme weather events and although human activity is not the only cause, it can definitely make climate change worse. Although vulnerability varies across regions, most citizens are not fully prepared to adapt to these extreme meteorological changes. For instance, the 2019 heatwave in France killed almost 1500 people (Agence France-Presse, 2019).

2.2. Climate change awareness and main factors affecting it

Environmental problems such as global warming, climate change, biodiversity loss or pollution have taken a global perspective and are mainly seen as the negative consequences of human activities. As a response, many researchers have made valuable scientific contributions, addressing topics such as green marketing, sustainable development and environmental protection in their studies (Peattie, 1990; Prothero, 1990). Moreover, according to Lorenzoni and Pidgeon (2006), "public views on climate change have been of interest to many researchers and policy makers for several years now and have been elicited through a range of different methods, primarily quantitative social surveys and more recently in-depth qualitative studies" (p. 74).

All in all, most recent studies have found that people across the world are becoming more aware and concerned about current environmental issues. However, most of these studies have focused on America (Bord et al., 1998; Brulle et al., 2012) or individual countries in Europe, such as United Kingdom (Whitmarsh, 2011) or Germany (Metag et al., 2015; Ratter et al.,

2012). Unfortunately, research regarding cross-national comparisons in climate change awareness across Europe or outside the Western world is lacking. To add more, most papers have studied climate change awareness from the point of view of managers or producers, without taking into consideration individual consumers. For instance, Halady and Rao's (2010) analysis of Indian managers demonstrated that "awareness does in fact impact behavioural change towards strengthening the environment and alleviating the potential and existing threats of the climate change phenomenon" (p. 15). However, the authors also added that "the importance of climate change is often superseded by other pressing issues in people's lives such as family, safety and finances" (Halady and Rao, 2010, p. 9). Similarly, other specialists have argued that although climate change is a key consumer issue, this is not reflected in consumer behaviour (Rettie et al., 2014). This view is supported by Ratter et al. (2012), who concluded that "there is a decline in the public attention and concern about climate change" (p. 7).

When addressing the main social and economic factors that influence climate change awareness, most studies have examined the role of extreme meteorological events such as storms and droughts (Borick and Rabe, 2010), citizens' level of knowledge on the causes of global warming (Bord et al., 2000), patterns of media use and communicative behaviour (Metag et al., 2015), social movement organizations including both believers and deniers groups (Andrews and Caren, 2010), elite opinion leadership (Yin, 1999) and political forces such an unemployment rate (Kahn and Kotchen, 2010). According to Lorenzoni and Pidgeon (2006), cultural and geographical factors can also influence perceptions of climate change. Interestingly, Lee et al. (2015) found that "worldwide, educational attainment is the single strongest predictor of climate change awareness" based on an unprecedented sample of 119 countries (p. 1014). The authors also highlighted that "levels of climate change awareness, knowledge, perceived risk and support for mitigation or adaptation vary greatly across the world" (Lee et al., 2015, p. 1014). Other researchers have attempted to segment individuals based on their climate change or environmental awareness (Kuthe et al., 2019). For instance, teenagers from Germany and Austria were clustered "into four different groups that differ as to cognitive, affective and conative aspects of climate change: the Paralyzed, the Charitables, the Concerned Activists and the Disengaged" (Kuthe et al., 2019, p. 178).

3. Methodology

The data analysed is part of the Eurobarometer 91.3 survey undertaken in April 2019. A total of 27.655 respondents (15.021 women and 12.634 men) aged 15 years old or over were interviewed face-to-face in their homes and native languages. Respondents were recruited through multi-staged random sampling from the 28 EU Member States (United Kingdom was still part of EU at the time of the survey). Study participants were questioned about their awareness of climate change, perceived seriousness of climate change and pro-environmental behaviour. With the help of SPSS, descriptive statistics were used to explore these variables in-depth. Eurobarometer studies are commissioned by the EU and provide useful data regarding public opinion on different relevant socio-economic themes, including the environment. However, although Eurobarometer surveys can provide an accurate view of climate change attitudes, "they have been neglected in the literature so far" (Baiardi and Morana, 2021, p. 3).

Climate change is a serious global challenge that requires a global response. The current study focuses on Europe because of the on-going commitment of EU to raise global ambition and set an example for the rest of the world. EU leaders have set the aspiring goal of making Europe climate-neutral by 2050, in line with the Paris Agreement (European Commission, 2020). At the same time, European countries are "the biggest contributor to climate change through unstainable high-carbon lifestyles" (Ortega-Egea et al., 2014, p. 1). Therefore, because

Europeans play a key role in addressing the risks of climate change, understanding their concerns and opinions is crucial. Key results of the data analysis are discussed next.

4. Results and discussion

4.1. Level of climate change awareness in Europe

First of all, respondents were asked to pick what they consider to be the single most serious global problem from a list of issues currently in the world today. Climate change was ranked as the 2nd highest most serious problem (23%), considered less serious than poverty, hunger and lack of drinking water (27%), but more serious that international terrorism (15%) or the economic situation (12%). However, when comparing results with previous Eurobarometer studies, it is evident that the number of people who consider climate change to be the most significant problem has the highest increase since 2017 from all answers, rising from 12% in 2017 to almost doubling in 2019 (23%). It would be useful to replicate this study in the current pandemic context in order to see if these opinions have changed for European citizens.

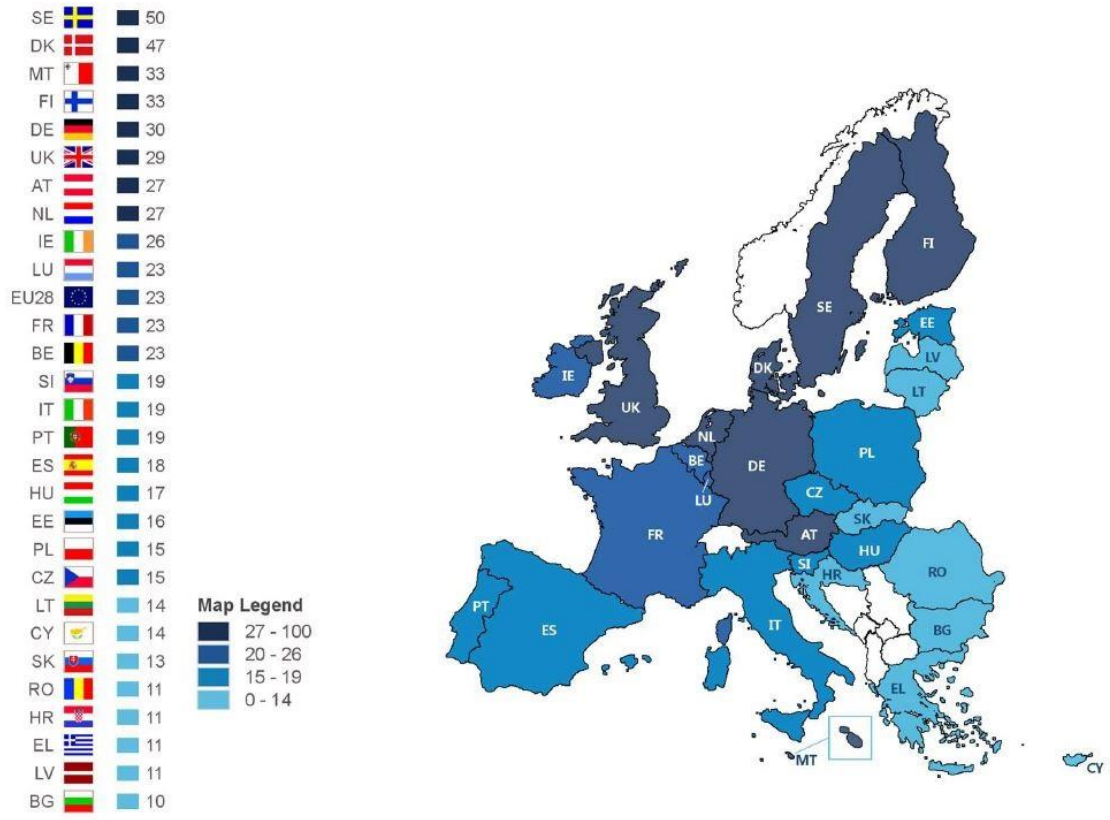

Figure 1. Percentage of citizens by country who declared climate change is the most serious global problem
Source: Eurobarometer 91.3, 2019, p. 7

As seen in Figure 1 below, results vary considerably across countries. Sweden and Denmark citizens are almost 5 times more likely to consider climate change as the most important global issue compared to those living in Bulgaria, Latvia, Greece, Croatia and Romania where only 1 in 10 people ranked climate change as the most significant problem facing the world today. When comparing these results based on the countries' level of exposure to climate-related extreme events, no significant changes can be observed. For instance, according to Green Match's study on 32 European countries, Lithuania and Latvia were the most affected European countries by climate change in 2019 (the same year when the Eurobarometer study was taken) based on their surface temperatures, sea temperatures, sea

levels and precipitation (Schlechtriem, 2019). But according to the present data analysis, Lithuanians and Latvians seem to be less aware of climate change compared to the European average. In a similar way, somewhat counterintuitively, Kvaloy et al.'s (2012) found that "people from countries relatively more exposed to climate-related natural disasters are less concerned about global warming" (p. 11). The authors' explanation is that "disaster-prone countries are typically countries with other and perhaps more acute problems worrying the public" (Kvaloy et al., 2012, p. 18).

4.2. Perceived seriousness of climate change

Following that, respondents were asked to rate the seriousness of climate change on a scale from 1 to 10, where 1 means 'not at all a serious problem' and 10 means 'an extremely serious problem'. The 10-point scale was grouped so that scale points 1-4 represent 'not a serious problem', 5-6 are 'a fairly serious problem' and 7-10 are 'a very serious problem'. As seen in Figure 2 below, almost 80% of all respondents consider that climate change is a very serious issue, ranking it between 7 and 10 on the 10-point scale.

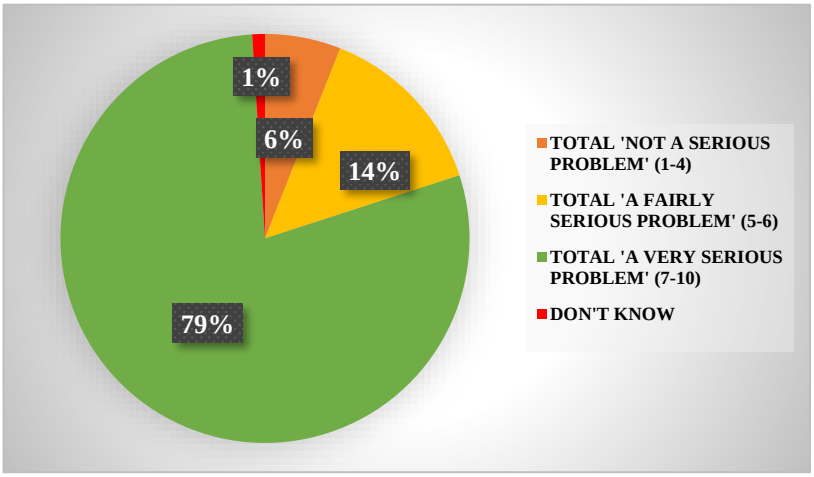

Figure 2. Perceived seriousness of climate change by percentage

Across EU countries, the majority of respondents in each country say that climate change is a very serious problem, ranging from around 9 in 10 respondents in Malta, Greece and Spain and around 6 in 10 respondents in Estonia, Latvia and Romania. When comparing the average between countries, no major differences were identified. Results are also similar when looking at the socio-demographic characteristics of respondents, however women (81%) are slightly more likely than men (78%) to perceive climate change as a very serious problem. This finding supports previous research into perceived seriousness of environmental problems which reported that women tend to be more concerned about environmental issues compared to men (Diamantopoulos et al., 2003).

4.3. Individual actions taken to combat climate change

Next, in order to measure pro-environmental behaviour, respondents were asked if they have taken any personal action to fight climate change in the last 6 months. Overall, results are promising with 1 in 6 Europeans declaring they have taken actions to fight climate change in the last 6 months, an increase of 11% since 2017 survey, also reaching the highest value since the first Eurobarometer study on climate change in 2011. To add more, the percentage of those who said they have not taken any action decreased from 47% in 2017 to 37% in 2019.

At national level, Malta (88%), Sweden (84%) and Finland (82%) are the countries where most people have taken actions to fight climate change, at least at declarative level. To contrast,

Romania (29%) and Bulgaria (30%) are the countries in Europe where people are least likely to have taken actions against climate change. Moreover, almost 1 in 7 (67%) Romanians mentioned that they have not taken any climate change action in the last 6 months, compared to the EU average of 37%. These discrepancies may be related to the fact that Romania is currently lacking an efficient national action plan for reducing greenhouse gases and combating climate change. Furthermore, by living in one of the mildest climate types with 4 seasons throughout the year, Romanians may lack the direct personal experience of severe weather events.

Finally, Europeans were interviewed about the types of individual actions taken to fight climate change. From a list of 13 actions, respondents were asked to choose which ones they have taken. The top 3 most common actions taken by European citizens are reducing waste and separate it for recycling (75%), cutting down consumption of disposable items or plastics (62%) and lowering energy consumption (48%). To compare, people in Europe are less likely to make more significant changes due to environmental concerns, such as install solar panels in their home (6%), invest in a low-energy home (5%) or buy an electric car (1%). However, it is worth highlighting that the number of people who regularly use environmentally friendly alternatives of transport such as walking or cycling has almost doubled from 26% in 2017 survey to 37% in 2019.

When comparing results at country-level, it can be argued that recycling rates vary considerably across Europe. For instance, 91% of people living in Luxembourg and Sweden declared they reduce waste and regularly separate it for recycling. At the other end of the scale, the number drops by almost 60% in Romania and Bulgaria, where only 33% and 30% of respondents declared they have taken this action (versus 75% EU average). Unfortunately, garbage is a major problem for these two neighbouring countries and solving this issue should be a top priority for country leaders.

The data analysis also revealed that respondents who perceive climate change as a very serious problem are also more likely to engage in pro-environmental behaviour. Moreover, when comparing study variables, it is evident that countries where citizens are more aware of climate change are also more likely to take individual actions. Therefore, it can be concluded that perceived seriousness and climate change awareness can push people to action. Interestingly, this finding tends to contradict Lee's study (2008). The author found that "the more serious the environmental problems the subjects perceived, the less likely they were to buy green products, concluding that perceived seriousness of environmental problems is the least important factor in affecting green purchasing behaviour" (Lee, 2008, p. 582). This discrepancy might happen due to the desensitization of citizens towards environmental problems.

5. Conclusion

The risks of climate change will continue to amplify and endanger the environment and humanity. Therefore, understanding people's opinions and attitudes towards this global challenge is important in guiding the right actions forward. On a positive note, it can be concluded that more Europeans are taking actions to tackle climate change compared to previous years. Furthermore, the number of citizens who consider climate change the most serious global problem also increased significantly compared to past Eurobarometer studies, maybe as a consequence of higher media coverage of the latest news on the topic such as America leaving the Paris Climate Agreement and Greta Thunberg's interventions as well as recent citizens' climate strikes and protests around the world. At the same time, the study also highlighted that perceptions around climate change can be country and culture-specific, which means that each nation deals differently with climate change.

Taking into consideration that the perceived seriousness of climate change is increasing in Europe, local and EU initiatives should continue to highlight the seriousness and urgency of climate change in order to be efficient. However, even if policies and efforts to reduce greenhouse gas emissions are effective, some forms of climate change are inevitable. Therefore, policy makers should also develop climate change adaptation strategies for Europe, especially in the more vulnerable countries with less financial and technological capabilities. At the same time, given the heterogeneous nature of public attitudes towards climate change, "national and regional programmes aiming to increase citizen engagement with climate change must be tailored to the unique context of each country" (Lee at al., 2015, p. 1019).

Finally, a number of important limitations need to be considered, mainly the use of secondary data analysis which can limit statistical measurement; the research method that may influence participants to offer socially accepted responses, and the variables and self-declared scales utilized. Therefore, more research on public opinion on climate change is needed. Given the multiple factors that can affect climate change awareness, it would be useful to further understand the role of religion and culture on pro-environmental attitudes. To add more, given the fact that climate change can be a very ambiguous term, future studies should also look at what people understand by climate change or the main barriers to climate change action. Finally, it would also be useful to use other qualitative methods to further advance this topic, for instance, focus groups with citizens from different countries.

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