PUBLIC PERCEPTIONS OF INSTITUTIONAL RESPONSIBILITY IN CLIMATE CHANGE RISK IN BALTIC NORDIC COUNTRIES

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Abstract. Tackling climate change requires collective, cross-borders actions and local solutions for mitigation measures. Variety of actors are involved in climate change adaptation and mitigation, ranging from local communities to the global supranational institutions. People tend to perceive individual action as failing to cope with climate change (e.g. outlined in Lorenzoni and Pidgeon, 2006) and therefore ascribe high responsibility to the institutional level. This article will analyze how the public in Baltic – Nordic countries perceive the institutional responsibilities in climate change adaptation and mitigation. This article is based on data of Special Eurobarometer (459), conducted in 2017 and the questions analyzed in this article are related to concerns about climate change and the perception of institutional responsibilities in tackling climate change (institutions: national governments, European Union, business and industry, regional and local authorities; and environmental groups). The local, national and global institutions are perceived as having different responsibilities and impacts in tackling climate change. Also, the perceptions of institutional and individual responsibility varies across the countries. Results indicate that climate change is perceived as one of the top three most serious global issues in Baltic – Nordic countries as well as the concern about climate change in those countries is increasing. Regarding public perceptions of institutional responsibility related to climate change risks, most people in EU member states indicate national governments as having highest responsibility. However, there are significant differences comparing the perception of public in Nordic and Baltic States.

Keywords: risk perception; climate change; Baltic-Nordic countries; institutional responsibility; Eurobarometer

1. Introduction

Climate change is one of the most serious issues in the contemporary world. Increases in average global and oceans temperature, melting glaciers, growing acidity in oceans and other factors make climate change a more global issue than ever before. The need of collaborative actions between nations leads to need of countries around the globe to correspond to new challenges and implement various methods to mitigate it. Climate change can cause wide-ranging effects not only to the environment but also to socio-economic and related sectors. So, the need to tackle these effects becomes a top-priority issue in national and international strategies and affects all the other sectors.

Concerns about anthropogenic causes on climate change lead to apprehension that it becomes the most serious threat for all human kind and the need to moderate these effects is urgent (Hansen, et. al 2008). Many international agreements have been signed on global level towards the need of tackling climate change The United Nations Framework Convention on Climate Change (UNFCCC), agreed in 1992; the Kyoto protocol

was ratified by 192 of the UNFCCC Parties on 1997; the Paris Agreement adopted by all UNFCCC Parties in December 2015. All these agreements lead to international efforts to fight climate change, but the regional and national agreements based on these global goals are as well very important. The dissemination of responsibility across the governments and later to the municipality level makes the global goals targetable at local levels by implementing sets of rules for stakeholders and individuals.

Three Nordic countries, which are part of the European Union (Sweden, Denmark and Finland) could be considered as the most advanced countries by tackling climate change. Sweden aims to become one of the first fossil-free nations in the world. Denmark has cut its greenhouse gas emissions by more than 27% since 1990 and expects to achieve a 37% reduction by 2020. Finland tries to implement bio economy, which aims to make Finland into a sustainable low carbon society based on the resource efficient use of renewable biomass (Bird, 2017). All these countries applied most of the global strategies into national law systems, which let them to institutionalize the concern at administrative level.

The Baltic states – Lithuania, Latvia and Estonia issued some documents concerning climate change: The Law on Financial Instruments for Climate Change Management by Lithuania's government published on 2009 (Lietuvos Respublikos Seimas, 2009) and "Strategy for National Climate Management Policy 2013–2050" on 2014; Latvia set several strategies - "Environmental Policy Strategy 2014–2020", "Climate Change Policy Strategy 2014–2020" and Estonia published National Environmental Strategy until 2030 on 2007 (Bosnjakovic, Haber, 2015). Most of these strategies relate to the duties on economic subjects to mitigate climate change by reducing greenhouse gas emissions. However according to OECD data (2015) after implementations of these strategies no extreme changes in emissions amounts have been recorded in Baltics, while the Nordic countries have some significant changes. As Bonsjakovic and Haber mention the actions plans depend on political approval and implementation of these actions by other government and private sectors (2015). So, at this stage climate change mitigation becomes everyone's responsibility, combining institutional, business and individuals' efforts.

Different rates of changes within Baltic-Nordic countries are strongly related to the different perception of responsibilities share. The goal of this article is to analyze and compare the perceptions of institutional responsibility in institutional responsibility in climate change adaptation and mitigation in Baltic- Nordic countries. Article explores the representative survey data from Eurobarometer 2017 on climate change perceptions. Research questions addressed in this article are as follows:

How the public in Baltic – Nordic concerns the seriousness of the climate change issues? How do the perceptions of institutional vs. individual responsibility varies across the Baltic – Nordic countries? Were individual actions taken to fight climate change? What kind of actions were taken?

2. Public perceptions of institutional responsibility on climate change

In the introduction we pointed out that Baltic and Nordic countries acknowledge concerns about climate change and its risk and also they attempt to reduce their impact to the environment by adapting global strategies into national law systems. But the adaptation of global strategies is not the only way to ensure the reduction environmental risks and climate change effects. The main question of the theoretical part is to discuss how the responsibility of institutions of different levels (global, national, and local) in climate change adaptation and mitigation is seen in relation to the individual responsibility.

The term responsibility, which in the Oxford dictionary is explained as duty to deal with something, also as the state or fact of being accountable or to blame for something. In the field of sociology, this term was explained by T. Parsons (1959) as a complex of duties associated to social roles, Strydom (1999) referred to individuals who possess special knowledge, abilities, judgement, power or influence. According to Grunwald (2014) responsibility must be understood as an assignment process, which indicates someone being responsible for something, by defining rules based on knowledge. Löfmarck et.al., explains responsibility by relating an action to an actor making a decision (2017). This is the most accepted understanding of the term.

The responsibility for climate change and its mitigation could be divided into two different approaches: retrospective and prospective responsibility. The first one states, that someone must hold responsibility when damage is verified, the second says that – responsibility is supposed to be taken to prevent or impede the damage (Sena, 2014). The retrospective responsibility on climate change is clear. The anthropogenic factors, such as industrial revolution, growing industry, demand of production, energy, deforestation, etc. led humanity to face the consequences of this kind of lifestyle. So, human impact on environment and climate change are directly linked and responsibility lays on everyone's shoulders.

On the other hand, talking about tackling climate change the concept of prospective responsibility is applicable. Saving the environment for further generations by reducing the damage caused by contemporary society's daily routines requires efforts from collaborated actors. But at this point it becomes difficult to identify the responsible ones. The prospective or in other words forward – looking responsibility is mostly appreciated with the number of actors involved, like institutions, industry, individuals etc. This substantial number of these actors and difficulties to hold someone responsible, creates the so-called *problem of many hands* (van de Poel, et.al. 2012). This phenomenon considered by Dennis Thompson discusses the idea that different officials contribute in many ways and it becomes difficult to ascribe moral responsibility to any official (1980). So, in this scenario, the assessment of climate changes impacts could involve decision making procedure being under uncertainty (Gandini et.al., 2017).

Looking at historical perspective, most of the communication in the media about climate change was produced by either scientists or experts (Nisbet, 2009). Their works in science related climate change fields and information produced are being considered trusted. But it was also observed that information framing affects the public perception by engaging the public more effectively or vice versa (Moser, Dilling, 2011). Whenever climate change risk is discussed within the framework of responsibility, many of internal and external actors could be indicated. Starting from international level institutions like – the European Union and ending with individuals, we can state that a multi-level interconnected relation exists. But it is still necessary to understand how the public perceives the responsibility. Some of the social science studies indicate that individuals are more likely to blame institutions, like governments, rather than blame themselves, mainly because the implementation of policy remains their job (Banks, 2013). People think that governments and businesses should do more to help solve environmental problems (Patchen, 2006). The same could be confirmed by forward – looking responsibility which is often understood in relation to institutional roles or tasks (van de Poel, et.al. 2012). The focus of institutional roles or tasks mostly discusses the policy instruments which are supposed to be chosen to determine the behavior of other actors. In this position government institutions become the reflection of collective responsibility and social solidarity. By expressing the response for the needs of country or people and being responsive governments get "buffer" support what makes them more responsible (Linde, Peters, 2018).

The collectively produced hazard of climate change cannot be ascribed to a single individual, but their choices could. But these choices are conditioned by the sets of public policies, social norms, and public infrastructures that shape the nation's attitudes and behavior towards their impact on climate change (Rajapaksa et.al., 2018). All these factors can lead into an individual decision to continue behaving in an eco-unfriendly manner because there are no other reasonable alternatives in their countries to avoid such actions. If national governments fail to enforce acceptable anti-pollution laws, ensure reduction of pollution and develop cities in more sustainable ways, an entire society is held accountable for each citizen actions. For example, who would avoid commuting with a car if this is an acceptable social norm, supported by the national government. Who is then responsible for the accumulated greenhouse emissions? It would seem that collective responsibility is being applied where individual responsibility would be unwarranted (Vanderheiden, 2011).

It is necessary to point out the need of voluntary participation of other actors in their own government (Sena, 2014). Without their engagement any kind of policies simply will not work, especially if the area covers environmental issues. The voluntarily actions cannot be distinguished from the perception of whole phenomenon. In this case, the main axis is the climate change and its risk management. So, before the actions are taken, the public must perceive the seriousness of the issue and its effects on the further development to the society (Weber,2015). There are many different frames how the climate change can be perceived, but the most stressful one

was indicated by the public health frame. Salient health issues like asthma, allergies etc. makes climate change consequences personally relevant (Nisbet, 2009). However, risk perception of the climate change and the support for adaptation policies vary among the public, not only because of the diverse framing of the problem, but as well of different national contexts and unique experience with the consequences of climate change (Taylor, et. al. 2014). The geographic location of Baltic – Nordic countries are less challenged by extreme weather events caused by climate change, so other factors take the leading roles of climate change perception.

The impacts of climate change for further societal development makes the public consider the aspects of the responsibility for climate change who are responsible for the precautionary actions. Climate change is caused mainly by the long-term human activity and modern lifestyle that makes every individual in some way responsible for global environmental crisis. However, the individuals tend to assign the responsibility to the institutions, but not to themselves. Therefore we would expect the public in Baltic – Nordic countries are likely to believe that the institutional level is supposed to take primary responsibility and action in tackling climate change. The social policies and social norms are necessary to define the individual responsibility levels and the lack of such implementations into daily societies routine will lead to less effective risk management and lack of public engagement. This kind of public incorporation into the search for solutions mostly depends on the framing of a problem, and national political and cultural contexts.

3. Methodology for the climate change risk perception research

This analysis uses the data from Special Eurobarometer on Climate Change (459), conducted in 2017. The main data set was accessed through GESIS Data Archive[1]. For the analysis, we are using the data from Baltic – Nordic countries: Denmark, Estonia, Latvia, Finland, Sweden, and Lithuania. The sample sizes in analyzed countries are presented below (Table 1).

Table 1. Sample sizes in selected countries

Country	Sample size
Denmark	1000
Sweden	1007
Finland	1012
Lithuania	1001
Latvia	1004
Estonia	1014

Source: Special Eurobarometer on Climate Change 459, 2017

The key questions of the SP Eurobarometer 459 used for the research were: 1. Which of the following do you consider to be the single most serious problem facing the world as a whole? *(Possible answers: Climate change; International terrorism; Poverty, hunger and lack of drinking water; Spread of infectious diseases; The economic situation; Proliferation of nuclear weapons; Armed conflicts; The increasing global population; Other);* 2. And how serious a problem do you think climate change is at this moment? *(Possible answers were selected within the scale from 1 to 10, with '1' meaning it is "not at all a serious problem" and '10' meaning it is "an extremely serious problem");* 3. In your opinion, who within the EU is responsible for tackling climate change? *(Possible answers: National governments; The European Union; Regional and local authorities; Business and industry; You personally; Environmental groups; Other; All of them; None);* 4. Have you personally taken any action to fight climate change over the past six months? 5. Which of the following actions, if any, apply to you? *(Try to reduce waste and regularly separate it for recycling; try to cut down on consumption of disposable items; etc.).*

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[1] Access to data: https://dbk.gesis.org/dbksearch/sdesc2.asp?no=6861&db=e&doi=10.4232/1.12915

With these five questions we analyzed further dimensions: Questions 1 and 2 evaluate the public perception of the seriousness of climate change among the public (these questions intend to explain public evaluation of climate change concerns). Questions 3 to 5 indicate the perceived responsibility among Baltic – Nordic countries on climate change risks. Question 3 identify the institutional level, questions 4 and 5 – individual level.

Then further in the article we are using the merged data for Nordic countries (Denmark, Finland and Sweden) and Baltic countries (Estonia, Latvia and Lithuania) ir order to reveal the differences and similarities in public attitudes towards climate change.

4. Tendencies of public perception of institutional responsibility in Baltic-Nordic countries

Eurobarometer has a question allowing to investigate what types of problems are perceived as most serious in various countries. Figure 1 (below) presents the comparative results of public perception in Baltic – Nordic countries.
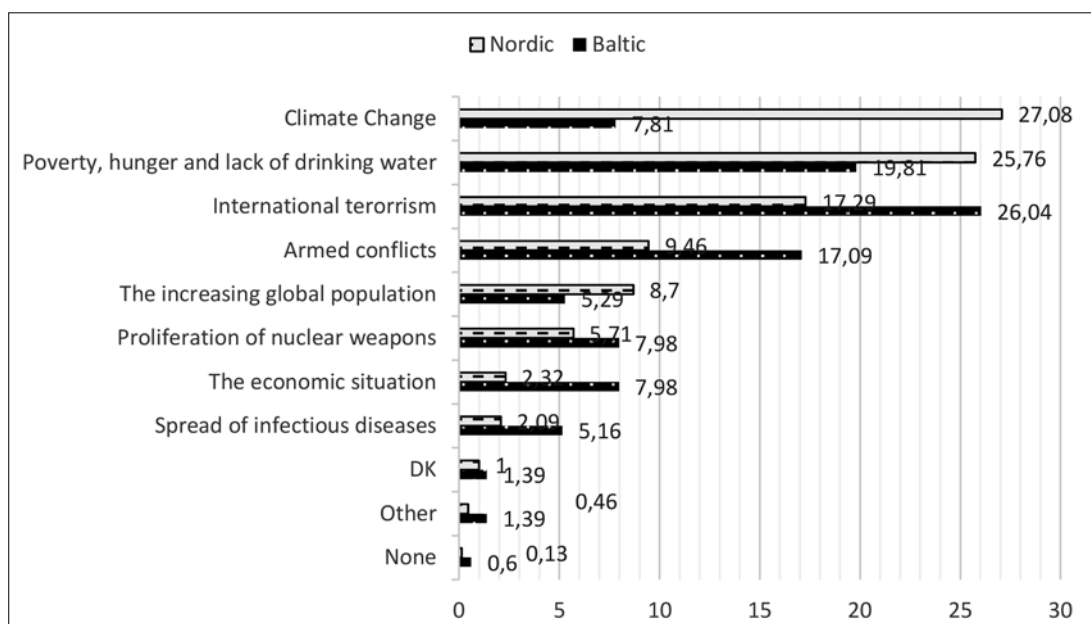.

Fig. 1. Considered the most serious problems, %, 2017

Results identify, that the perception of the most serious issues varies a lot comparing Baltic and Nordic countries. In Nordic countries, climate change is considered as the most serious problem (selected by 27% of public in Nordic countries), while in Baltic countries it is only in 6th position in the list. As only one answer was possible, it says a lot about prioritizing the most serious world problems. Such results reveal that public in Nordic countries are more likely to be concerned about more global issues, while Baltics identifies international terrorism as the most significant issue. But at this point it is possible to discuss how serious the Baltics are about the "real" terrorism the world is facing, and how this perceived seriousness is affected by the geopolitical situation. As the social amplification of risk explains, familiarity with the hazard, and the catastrophic potential shape public response (Kasperson, et.al 1988). The same could be discussed about the poverty, hunger and lack of drinkable water. Nordic countries consider this as the second most genuine issue, as well as Baltics, but there is possibility that Nordics sees this problem in more global context, while within Baltics this could be assumed as one of the problems their own countries are facing Especially it concerns poverty and people at risk, which according to Eurostat data (2017) is much higher in Baltics rather than in Nordic countries.

Perceived seriousness and concerns about climate change at the moment are also different between the regions (see Table 2.). The results show that 77% of Nordic respondents expressed their concern on climate change as a very serious problem, while in Baltic countries the percentage is significantly below EU28 average (57% vs.

74%). It is worth to mention that even 13% of all the respondents in Baltic countries stated that climate change is not a serious problem at all, which leads to the conclusion that there exists a huge gap in the perception of climate change in Baltic countries.

Table 2. How serious of a problem do you think climate change is at this moment?

Concerned seriousness	Nordic	EU 28	Baltic
A very serious problem	77%	74%	57%
Fairly a serious problem	16%	18%	28%
Not a serious problem	6%	6%	13%
DK	1%	2%	2%

Source: Special Eurobarometer on Climate Change 459, 2017

The main goal of this article was to identify how people in Baltic – Nordic countries perceive the institutional responsibilities in climate change adaptation and mitigation. Figure 2 presents the attitudes of public towards the institutional responsibilities for tackling climate change. There were multiple answers possible, so the results indicate the broader perception of responsibility share.

Fig. 2 Who within the EU is responsible for tackling climate change?, % (multiple answers possible)

Results identify significant differences in the perception of institutional responsibility across the actors of various levels. Public in Nordic countries attribute higher levels of responsibility to actors and the frequency of mentioning them was higher than the average in the EU28. As the most responsible ones' people from Sweden, Finland and Denmark indicated national governments (57%), European Union (54%) and business and industry (51%). While the average in Baltic countries was 37% for national governments (EU28 average- 43%); the EU- 26% (EU28 average 39%); business and industry 39%. (EU28 average- 38%). Policy makers and main polluters (industries) are being perceived as the most responsible institutions. Despite the higher consideration rate of each actors in Nordic countries, the tendency of institutional responsibility share is the same.

Another dimension on this responsibility map is individual responsibility and the possible answer "you personally There is a huge difference between Nordic and Baltic states in the perception of institutional responsibility. More than 40% of public in Nordic countries identified they feel personally responsible, compare to only 18% in Baltic countries (that is below EU28 average of 22%).

The avoidance of personal responsibility to fight climate change also could be noticed in the further results (Table 3.) *"Have you personally taken any action to fight climate change over the past six months?"* was one of the questions revealing the level of individual responsibility. As the results indicate, most of respondents (68%) from Nordic countries said "yes" and their activity exceeds EU average (49%). The majority (60%) in Baltic countries said that they have not taken any actions. This could be the consequence of previously reviewed results indicating that people in Baltic countries do not perceive climate change as a serious problem, but also on the other hand these results may identify the low level of understanding about how individual actions (for example, environmentally friendly behavior, such as recycling of energy saving) can contribute to tackling climate change.

Table 3. Have you personally taken any action to fight climate change over the past six months?

Actions taken	Nordic	EU 28	Baltic
Yes	68%	49%	36%
No	29%	47%	60%
DK	3%	4%	4%

Source: Special Eurobarometer on Climate Change 459, 2017

Survey also included questions about the range of actions that were taken in Baltic and Nordic countries (see table 4.). The results show that individuals mostly are reducing waste and regularly separate it for recycling. Both Baltic and Nordic countries mentioned this action as most frequent (65% in Baltic and 79% in Nordic). The second most common action taken was attempting to cut down of consumption of disposable items, for example plastic bags (70% in Nordic countries vs. 56% in Baltic countries). However, results identify that there are large differences not between the Baltic – Nordic regions, but within the Baltic countries.

Only 43% of Latvia respondents try to reduce waste and regularly separate it for recycling, while Lithuania (78%) and Estonia (61%) do much better in this field. The enormous impact for such results in Lithuania and Estonia is because of a couple of national laws on recycling, which have been implemented during the last couple of years. Most plastic or glass bottles and cans are being returned to special places, to get returned deposit paid in advance. Also, the price of unrecycled waste keeps growing, so more and more households take different garbage containers to reduce the price. While Sweden, Finland, Denmark, Lithuania and Estonia show remarkable results, Latvia still doubts the necessity for such system. Even the good practice of Nordic countries that are using the bottle deposit refund system for a while and impressive results from other neighbors have not created an opportunity for majority of Latvians to take this action in much simpler way.

Table 4. Actions taken by country, %

ACTION TAKEN % MULTIPLE ANSWERS POSSIBLE	LITHUANIA	LATVIA	ESTONIA	SWEDEN	FINLAND	DENMARK	EU28
You try to reduce your waste and you regularly separate it for recycling	78	43	61	88	75	70	71
You try to cut down on your consumption of disposable items whenever possible	62	46	57	69	67	72	56
You buy locally produced and seasonal food whenever possible	33	49	45	63	42	46	41
When buying a new household appliance e.g. washing machine, fridge or TV, lower energy consumption is an important factor in your choice	29	49	44	47	38	55	37
You regularly use environmentally-friendly alternatives to your private car such as walking, cycling, taking public transport or car-sharing	18	49	30	56	43	47	26
You have insulated your home better to reduce your energy consumption	18	36	34	13	16	29	18
You avoid taking short-haul flights whenever possible	6	19	6	38	22	13	10

You have bought a new car and its low fuel consumption was an important factor in your choice	6	7	14	22	14	26	9
You have installed equipment in your home to control and reduce your energy consumption (e. g. smart meter)	5	9	7	8	15	18	8
You have switched to an energy supplier which offers a greater share of energy from renewable sources than your previous one	0	3	4	24	12	11	7
You have installed solar panels in your home	1	2	1	1	2	5	4
You have bought a low-energy home	1	1	5	2	1	5	3
You have bought an electric car	1	0	0	1	1	1	1

Source: Special Eurobarometer on Climate Change 459, 2017

Another aspect to be discussed is the level of using environmentally-friendly transportation alternatives. Only 18% Lithuanians mentioned that they regularly walk, cycle or take public transport, while the results of other Baltic – Nordic countries are higher than the average of EU28 – 26%. Compared with Eurostat data (2017) Lithuania was the second country regarding the kilometers travelled by passenger cars in the whole of Europe. This possibly means that the public in Lithuania has limited access to well-developed public transport and cycling infrastructures and are unable to use more environmental – friendly alternatives

The comparative analysis of Baltic – Nordic countries revealed that most of the public in this region assigns higher responsibility to the institutional rather than individual level. The European Union, national governments and business with industry were perceived and indicated as mostly responsible for tackling climate change both in Baltic and Nordic countries. However, the general level of concern differs between the regions. People in Nordic countries express their deeper concern with climate change as the most serious problem in the world, as well they assign more responsibilities to different institutions and individuals rather than public in Baltic countries. Results indicate that the higher is perceived individual responsibility, the more active are individuals in the mitigation of climate change. The differences in the level of actions taken among Baltic countries identify the effects of environmental policies towards the individual behaviors.

Conclusions

Climate change as collectively produced hazard creates two interconnected dimensions of responsibility. The first dimension refers to institutional level. Such institutions as governments and businesses possess the necessary tools to foster more environmentally friendly alternatives for individuals. This includes the sustainable urban development, upgrades of local infrastructures making public or eco-friendly transport to be used in daily routines, increase the production of eco-friendly items etc. Thus institutions overall have the power to provide individuals with alternatives leading towards climate friendly individual actions. The other level of responsibility requires individual effort to create a demand from businesses and require for targeted policies from governments. This kind of voluntary participation reflects the perception of everyone being responsible and combines the collaborated actions to achieve the same goals. The analysis of the perception of responsibility of climate change in Baltic – Nordic countries revealed significant differences between the regions. People in Nordic countries assign higher level of responsibility for the main institutions like national governments, the EU, business and industry than public in Baltic countries. . Notable differences were revealed in the attitudes towards individual action and role in the fight with climate change. Very low individual responsibility in climate change risk mitigation in Baltic countries may be explained by geopolitical and cultural contexts. Political tension of neighbor actions possibly make Baltic countries to be less concerned about the seriousness of climate change than Nordic countries, and the lack of targeted climate policies and communication about climate change from national governments makes less individual actions being taken individuals. Still, as data indicates, behavioral patterns at individual level are shaped by environmental policies, therefore effective targeted climate policies at national and local levels could significantly increase the levels of individual concern and participation.

Acknowledgements

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