

**How Legitimate is Legitimacy? Perceived Legitimacy and its Predictors in the
Context of Climate Policies.**

Leon Lепенies

s4793803

Department of Psychology, University of Groningen

BSB3E-BT15

Group 29

Supervisor: Bas A. H. Ankoné

Second evaluator: Dr. Cristhian Martínez Moreno

In collaboration with: Chris Csölle, Paula Seiffert, Emma Syring, Yasmine Veuger

July 8th, 2024

A thesis is an aptitude test for students. The approval of the thesis is proof that the student has sufficient research and reporting skills to graduate, but does not guarantee the quality of the research and the results of the research as such, and the thesis is therefore not necessarily suitable to be used as an academic source to refer to. If you would like to know more about the research discussed in this thesis and any publications based on it, to which you could refer, please contact the supervisor mentioned.

Abstract

This study examines a link, originating from political science, between the perception of three constructs, namely transparency, accountability of decision makers and inclusiveness with the perception of legitimacy, in the context of decision making procedures targeting climate change. This was examined through an online between-subjects vignette study (N = 96) in which participants were randomly assigned to one of five conditions, each one presenting a different decision making procedure. Procedures were expected to differ in terms of the three perceived normative principles and perceived legitimacy. ANOVAs found no statistically significant difference for the four variables when comparing them between conditions. However, results from a multiple regression suggest that perceptions of accountability and transparency do predict perceived legitimacy, while perceived inclusiveness does not. Possible explanations for the insignificant ANOVA results are discussed. The study's findings provide policy makers with evidence that citizen advice referendums and expert advice referendums are perceived as more inclusive than top down procedures. Given the importance of citizens' support needed to combat climate change we propose further research listed in the discussion.

Keywords: Policy making procedure, perceived legitimacy, perceived transparency, perceived accountability of decision makers, perceived inclusiveness

How legitimate is legitimacy? Perceived Legitimacy and its Predictors in the Context of Climate Policies.

The challenges of climate change policies and their perception of legitimacy

Climate change jeopardises the livelihood of millions of people (Pinkerton & Rom, 2021; Biswas & Tortajada, 2022; Kalele et al., 2021), for reasons such as food scarcity for already

struggling nations (Pinkerton & Rom, 2021; Ritchie, 2019). In order to combat this challenge, policies that effectively reduce GHG emissions are needed. Such policies, however, often fail to achieve what they set out to do or already fail during the implementation stage due to a lack of public support for them (Perlaviciute & Squintani, 2020; Patterson, 2021; Wallner, 2008). To achieve these goals it is paramount for people responsible to understand and apply what contributes to successful policies.

Political theorists suggest that one way to garner this support is legitimacy (Wallner, 2008; Zelli et al., 2020; Nițoiu, 2015). Legitimacy refers to the way institutions and decision making procedures are assessed according to whether they have the right to dictate what has to be done in the form of policies and laws (Zelli et al. 2020). More recent research states, one way to increase legitimacy is to introduce public participation as opposed to reaching policies through non-participatory procedures (DeCaro & Stokes, 2013). However, it is unlikely that public participation procedures would garner said support if people themselves do not perceive these new processes as more legitimate. While political theorists define what they understand as the concept and expect that the outcome is seen as legitimate by everyone as long as it fits criteria such as transparency, accountability of decision makers and inclusiveness (Zelli et al., 2020; Nițoiu, 2015), it is important to research if people's perceptions of legitimacy actually depend on the perception of these criteria. As we can not know if these criteria are truly subdimensions predicting the perception of legitimacy we will refer to them as perceived normative principles. Citizens' perception of those normative principles is studied quite extensively (Abrams et al., 2005; Brummel & de Blok, 2024; De Fine Licht, 2011). This research will thus focus on the question if the perception of legitimacy is truly dependent on the perception of these three

normative principles or if these assumptions about legitimacy only hold true in arguments amongst theorists.

Transparency concerns the degree of access to information that the policy making procedure provides to citizens as well as other people affected by the resulting policy (Zelli et al., 2020; De Fine Licht, 2011) and an increase in transparency should lead to an increase in legitimacy, due to an increase of trust regarding the decision making procedure (Zelli et al., 2020; Curtin & Meijer, 2006). From a psychological perspective, perceived transparency is on the one hand able to enhance people's support of policies as the process is evaluated more positively, with citizens more prone to participate in policy making in high transparency conditions (Kang, 2023). The same research also claims that higher perceived transparency should lead to higher legitimacy as well, due to more public participation (Kang, 2023). However, on the other hand are contradicting findings showing negative effects of perceived transparency. In some studies trust in procedures actually seems to be weakening due to citizens having access to information about potential flaws which in turn lowered perceived legitimacy (De Fine Licht, 2011). With such mixed results in multiple fields it seems unclear what effect it would have for perceived legitimacy climate change policy procedures.

Perceived accountability of decision makers entails that the people involved in the policy making procedure are held responsible for the decisions that they make and for the ways in which these policies are implemented (Zelli et al., 2020). Accountability is seen as an elemental part of legitimacy by some political scientists as it ensure that people making decisions do so for the sake of the citizens and not for their own interests (Nițoiu, 2015; Schmidt & Wood, 2019). Psychological findings regarding perceived accountability of decision makers reveal mixed results. Some researchers report that on the one hand holding politicians accountable to citizens

seems to increase perceptions of legitimacy, while the traditional approach of politicians being held accountable by higher ranking members of the government seemingly has no influence on perceived legitimacy, due to low amounts of trust citizens have in politicians being held accountable (Brummel & de Blok, 2024). Other researchers state that accountability improves decision making only if it abides by rules that have been specified before and not loosely defined standards such as decision makers doing their best (Aleksavska, 2021). Once again the exact impact on perceived legitimacy of climate change policies seems uncertain.

Inclusiveness concerns the proportion of citizens that are able to participate on a more or less equal plane in controlling and contesting the designing of policies and laws (Böhmelt et al., 2015; Schmidt & Wood, 2019). Political scientists situate inclusiveness as elemental if one wants to call the process legitimate as it mediates interests and makes sure that the reached policy is the most acceptable for the most amount of people (Nițoiu, 2015; Schmidt & Wood, 2019). Research coming out of the psychological domain is rather scarce when it comes to the connection between perceived legitimacy and perceived inclusiveness. While it seems to be considered a generally positive thing for policies to have a focus on inclusiveness (Abrams et al., 2005), its direct link to perceived legitimacy is unclear when it comes to policy making as it is most often studied in smaller intergroup contexts. One of the few researches focusing on the link between perceived inclusiveness and perceived legitimacy focuses on the procedures leading to peace talks between groups and not on intragovernmental policy making procedures. It concluded that in that context there is no connection as people preferred expert driven procedures (Direnç, 2017). With psychological research on this link being scarce it is not conclusive what effect perceived inclusiveness would have on perceived legitimacy.

To conclude, we will look at the assumption of political scientists, that these three normative principles should measure if people perceive a policy to be legitimate in the context of decision making procedures.

How Public Participation Procedures Influence Perceptions of Legitimacy

As already mentioned, one way to increase legitimacy is the use of public participation when designing policies (DeCaro & Stokes, 2013), presumably increasing perceptions of legitimacy through differing levels of the three normative principles. We also explored the inconsistent findings when it comes to the links between these perceived normative principles and perceptions of legitimacy, indicating that it is heavily context dependent. This procedural dependence might actually be dependent on the exact form of public participation as not every procedure might increase perception of the three normative principles and legitimacy in a predictable way. As public participation can be implemented in a multitude of ways, we choose four different participatory approaches.

The most straightforward way is through referendums which enables citizens to vote directly about the policy, consequently displaying a higher level of inclusiveness than other processes, in which neither politicians nor experts hold more influence (Böhmelt et al., 2015) as well as higher transparency as everyone has the same amount of access to information about the policy making procedure. Accountability however, should be lowest in this process as there is not one singular person or group making the decision meaning everyone would have to be held accountable, which is not realistically leading to lower perception of accountability for decision makers.

An increasingly popular way to implement public participation is a citizens assembly in which 50 people are selected from the voters population with regards to quotas in the broader

population to reflect population demographics. These 50 representatives are then provided with necessary information and vote if a policy will be implemented in the future. It should rank highest in all normative principles except inclusiveness as not everyone is equally able to influence the policy (Böhmelt et al., 2015), but only the 50 selected people. However, perceived accountability should be the highest out of all procedures as the decision makers are known, deeply involved and not as detached from the population as the council. This is also in line with higher accountability for citizens than for politicians (Brummel & de Blok, 2024). Perceived transparency should be high as well as the quotas should ensure that all people of the student body are able to ask someone who is representing them.

We also propose a mix between these two public participation procedures which is the citizen initiative review. In this procedure a group of randomly selected individuals are picked from the voters ensuring equal representation of stakeholders who then summarise the pros and cons that they deemed most important and provide to fellow voters before a referendum is conducted. This process should have the same level of inclusiveness as the referendum as citizens are able to influence the policy to a great extent. However, this form of public participation should have a higher level of perceived inclusiveness as citizens are able to participate more in designing policies than in all other conditions, while regaining the ability to vote in the end as opposed to the citizens assembly. Additionally, the level of perceived accountability of decision makers should be higher than in the referendum as this condition leads to a small group instead of everyone being held accountable making accountability seem more realistic. When comparing perceived accountability to the citizens assembly we predict lower levels as the citizens assembly is responsible for the whole policy while the citizen initiative review does not make the final decision.

To also investigate the already mentioned study on perception of legitimacy in the context of peace talks in which it was discovered that the condition perceived as most legitimate was actually an expert driven participatory process (Direnç, 2017), we propose an expert review as our last way to let the public participate in decision making. In this process information compiled by experts is provided to voters before the voting in a referendum. This public participation process has the lowest level of inclusivity out of all participatory processes as experts have the ability to influence the policy outcome more heavily than other citizens due to their full control over what information is provided. However, perceived accountability should be higher than in the referendum, as there is a specific group to be held accountable, and for that reason we expect it to have the same level as the citizens initiative. Once again we predict the citizens assembly to have higher levels as the citizens assembly is responsible for the whole policy while the expert reviews final decision is still reached through a referendum.

Therefore, we expect that the levels of perceived normative principles as well as perceived legitimacy will differ between procedures. Furthermore we predict that pairwise comparisons between conditions lead to the following differences between conditions. The top down condition will rank lowest in all variables, while the citizens assembly will rank highest in all variables except perceived inclusiveness. The referendum conditions, referendum, citizens initiative review and expert review, will rank in between these two procedures with the exception of the variable perceived inclusiveness which is expected to be highest in the condition referendum with student pamphlet and referendum without pamphlet. Finally we expect the three perceived normative principles, perceived transparency, perceived accountability of decision makers and perceived inclusiveness, to predict the perception of legitimacy.

Method Section

Participants

An a priori power analysis indicated a required 302 participants to achieve a medium effect size ($f = .25$) and power 0.80% at $\alpha = .05$. To account for attrition we aimed for 350 participants, which due to unforeseen circumstances, was not reached. Out of 172 participants 76 were excluded, leading to a sample size of $N=96$, with the current number of participants the ANOVAS have a power of .44 and the multiple regression has a power of .98. Participants were excluded due to not passing the attention check, not providing consent, not completing the questionnaire or completing it in an unrealistic time, meaning anyone who finished under three minutes. The convenience sample partially consisted of psychology students at the University of Groningen who are required to participate in studies in order to gain a total of 38 credits to pass a course. Participants received 0.7 credits for participating in the present study. The other students were part of the same faculty, but were invited by researchers through snowball sampling in their personal and professional circles. Of the participants, $N = 23$ (24%) were male, $N = 69$ (71.9%) were female, and $N = 4$ (4.2%) reported another gender identity. The mean age among the participants was $M = 21.1$ ($SD = 2.69$).

Study Design

We conducted an online vignette study using Qualtrics employing a 5 condition between subject design. These 5 conditions, adapted to fit the participants' context (the top down is the faculty board, the referendum is the referendum without a voter pamphlet, the expert review is the referendum with an expert voter pamphlet, the citizen initiative review is the referendum with a student voter pamphlet, and the citizens assembly is the student assembly) differed in procedure and led to the decision to implement geothermal heating at the faculty of behavioural

and social sciences. Geothermal energy was chosen to not influence participants with preconceived notions about better known forms of alternative energy (Li & Zhao, 2019).

First, participants were asked to provide informed consent and their demographics. Afterwards, participants were randomly allocated to one of the five conditions and asked to imagine that “in order to combat climate change, the Behavioral and Social Science (BSS) faculty wants to implement a policy to reduce its carbon footprint”. The participants were then presented with the first part of the vignette, describing the procedure to which they were assigned. The description's phrasing was kept as similar as possible across conditions (see Appendix A for full vignettes), differing only in length and condition specific wording, crucial for participants' understanding. Subsequently, they were asked to answer several questions concerning their perceptions about the procedure, including, amongst others, perceived transparency, perceived accountability of decision makers, perceived inclusiveness, perceived legitimacy (see Appendix for complete overview of questions, amongst which several that are not part of the present study scope). Next, they were presented with the second part of the scenario, elaborating on the outcome of the procedure, after which they answered several questions regarding their perceptions of this decision (see Appendix for complete overview). The distribution across the five conditions was: Top-down: 21; Referendum without voter pamphlet: 19; Referendum with expert voter pamphlet: 17; Referendum with student voter pamphlet: 19; and Student assembly: 20.

Table 1

Description of the five conditions

Condition	Text
Top-down	The faculty board discusses the policy and subsequently decides whether it will be implemented. Every board member can vote on the matter.
Referendum no Pamphlet	The faculty board discusses the policy and subsequently decides whether it will be implemented. All BSS students can vote on the matter.
Referendum Expert pamphlet	This scenario follows the standard referendum format, with the addition that students are provided with a voter pamphlet summarising the pros and cons of the policy. The pamphlet is made by an expert review panel who met for several consecutive weekends to review the policy. All students of the BSS faculty can vote on the matter.
Referendum Student pamphlet	This scenario follows the standard referendum format, with the addition that students are provided with a voter pamphlet summarising the pros and cons of the policy. The pamphlet is made by a student review panel composed of 50 students who were randomly selected from the entire faculty, by lottery. Supported by various experts, the panel members met for several consecutive weekends to discuss the policy. All students of the BSS faculty can vote on the matter.
Student assembly	A student assembly gets to decide on the implementation of the policy. This group consists of 50 students who were randomly selected from the entire faculty. Supported by various experts, the assembly members met for several consecutive weekends to discuss the policy. All assembly members can vote on the matter.

Note. The full vignettes can be found in the Appendix

Measures

Perceived legitimacy

Perceived legitimacy was measured using a 7-point Likert-type scale, ranging from 1 corresponding to completely disagree to 7 corresponding to completely agree. Participants were asked to what extent they agree with the following statements: I find this way of decision-making legitimate. (M = 5.27 , SD = 1.05).

Perceived transparency

Perceived control was measured using a 7-point Likert-type scale with 1 corresponding to completely disagree to 7 corresponding to completely agree. Participants were asked to what extent they agree with the following statements: I find this way of decision-making open and transparent, (M = 4.9, SD = 1.17)

Perceived accountability of decision makers

Perceived deliberation was again measured with a 7-point Likert-type scale with 1 corresponding to completely disagree to 7 corresponding to completely agree. Participants were asked to what extent they agree with the following statements: I find this way of decision-making holds decision makers accountable for their actions (M = 4.41, SD = 1.38).

Perceived inclusiveness

Perceived deliberation was again measured with a 7-point Likert-type scale with 1 corresponding to completely disagree to 7 corresponding to completely agree. Participants were asked to what extent they agree with the following statements: I find this way of decision-making is inclusive (M = 4.89, SD = 1.27).

Attention Check

The attention check is constituted by a seven point likert scale ranging from completely agree (1) over neither disagree nor agree (4) to completely agree (7). The participant is asked to select completely agree and fails the attention check leading to exclusion if they do not.

Results

Does the Perception of Legitimacy, Transparency, Accountability of Decision Makers and Inclusiveness Differ Between Conditions

In order to find out if the hypothesis stating that the levels of perceived normative principles and perceived legitimacy indeed differ between procedures, we conducted four between subject design ANOVAS to determine if the five conditions (Top-down, Referendum without pamphlet, Referendum with expert pamphlet, Referendum with student pamphlet, and student assembly) could lead to differences in the perceived three normative principle as well as perceived legitimacy. None of the four ANOVAs lead to statistically significant results with perceived transparency having the highest p-value ($F(4,91) = 0.568, p = .687, \eta^2 = 0.024$) followed by perceived accountability ($F(4,91) = 0.858, p = 0.492, \eta^2 = 0.036$), perceived legitimacy ($F(4,91) = 1.374, p = .249, \eta^2 = 0.057$) and lastly perceived inclusiveness ($F(4,91) = 2.447, p = .052, \eta^2 = 0.097$). To conclude none of the variables differed statistically significant in any of the five conditions (for an overview see Table 2). As the ANOVAs were all non-significant, there was no need to run the contrasts for the top-down and student assembly condition.

Table 2

ANOVA Condition X Perc_Legit/Perc_Transp/Perc_Accou/Perc_Inclu

Cases	Sum of Squares	df	Mean Square	F	p	η^2
Perc_Transp						
condition	3.187	4	0.797	0.569	0.687	0.024
Residuals	127.771	91	1.4094			
Perc_Accou						
condition	6.584	4	1.646	0.858	0.492	0.036
Residuals	174.572	91	1.918			
Perc_Inclu						
condition	14.932	4	3.733	2.447	0.052	0.097
Residuals	138.807	91	1.525			
Perc_Legit						
condition	5.980	4	1.495	1.374	0.249	0.057
Residuals	98.979	91	1.088			

Most pairwise comparisons of all variables between all conditions did not display any statistically significant results. The only exceptions are two pairwise comparisons between the top-down condition which was predicted to be lower in all perceived normative principles as well as in perceived legitimacy. The top down condition did indeed display significant differences when inspecting the variable of perceived inclusiveness when comparing it to both the referendum with expert pamphlet condition ($B = -1.163$, $t(91) = -2.885$, $p = .005$) as well as

the referendum with student pamphlet condition ($B = -0.915$, $t(91) = -2.339$, $p = .022$) (For the full results of the contrast see Table 3).

Table 3

Contrast - Top-down_condition

Condition	Estimate	SE	df	t	p
Top-down x RefExp	-1.162	0.403	91	-2.885	0.005
Top-down x RefSt	-0.915	0.391	91	-2.339	0.022
Top-down x RefNp	-0.757	0.391	91	-1.936	0.056
Top-down x Assem	-0.760	0.386	91	-1.968	0.052

Note. RefExp meaning referendum expert pamphlet; RefSt meaning referendum student pamphlet; RefNp meaning referendum no pamphlet; Assem meaning student assembly

Do Perceived Transparency, Accountability of Decision Makers and Inclusiveness Predict the Perception of Legitimacy?

To test the hypothesis that perceived legitimacy is predicted by the three perceived normative principles, perceived transparency, perceived accountability of decision makers and perceived inclusiveness, a multiple regression analysis was conducted. The multiple regression indicated that the combination of the three perceived normative principles explained 24.1% of the variance in perceived legitimacy, $R^2 = .241$, $F(3,92) = 9.74$, $p < .001$. The assumptions linearity, independence and homoscedasticity are met, while the normality assumption was

violated. However, even though the normality is violated, sample size is large enough at $N=96$ to approach normality even with a failed Shapiro-Wilk normality test, as stated by the central limit theorem (Kwak & Hae Kim, 2017).

Perceived transparency and perceived accountability of decision makers both positively and statistically significantly predicted perceived legitimacy. Perceived transparency was the strongest predictor ($B = .259, t(95) = 2.46, p = .016$) The other statistically significant predictor was perceived accountability of decision makers, ($B = .176, t(95) = 2.41, p = .018$). Perceived inclusiveness did not statistically significantly predict perceived legitimacy ($B = .113, t(95) = 1.21, p = .231$). This means that legitimacy levels rise by .121 with each increasing level of perceived inclusiveness. For the full results see table 4.

Table 4

Model Coefficients - Perc_Legit

Predictor	Estimate	SE	t	p	Stand. Estimate
Intercept	2.676	*.02	5.37	<.001	
Perc_Transp	0.259	0.1053	2.46	0.016	0.290
Perc_Accou	0.176	0.0727	2.41	0.018	0.231
Perc_Inclu	0.113	0.0939	1.21	0.231	0.137

Discussion

By conducting this vignette study in the Netherlands we investigated if the political science assumptions hold true when it comes to the perception of legitimacy and its link with the

three perceived normative principles of perceived transparency, perceived accountability of decision makers and perceived inclusiveness. This was tested by providing participants with four different participatory processes and examining the differences in variables between these four participatory conditions and a top down condition. The ANOVAs did not indicate that the perceptions of these variables differed significantly between conditions and thus also does not statistically support a link between the perception of the three concepts and perceived legitimacy, indicating that the hypothesis that the four variables differed across the five conditions significantly is not supported by the obtained data. This would suggest that the five different conditions, globally speaking, have no statistically significant influence on the three perceived normative principles and perceived legitimacy and that we can not make any predictions how varying levels of the perceived normative principles lead to variation in perceived legitimacy. This finding might not necessarily be due to the fact that these concepts are not related but might be the result of low power leading to the present results as the regression indicated significant predictive ability for the three perceived normative principles on perceived legitimacy. This is further supported by the ANOVAs effect sizes reaching from small to medium for the (see table 2). However, there might be other explanations as we can not be sure of that conclusion. Alternatively, we thus propose a more theoretical approach leading to alternative explanations for the non-significant results.

A possible explanation for the three perceived transparency displaying non-significant results in the ANOVAs is the way the questionnaire provided participants' descriptions for all procedures. We have to remember that transparency is the degree of access to information that the policy making procedure provides to citizens as well as other people affected by the resulting policy (Zelli et al., 2020). When looking at the on-significant results concerning the variable of

perceived transparency, literature would thus point at a significant result when comparing the quite different conditions (Zelli et al., 2020; De Fine Licht, 2011; Curtin & Meijer, 2006). However, the participants' perception of transparency might have been artificially inflated as we gave a higher degree of access to information through the procedure descriptions stating how the decision was made. While this was done to ensure people understood the conditions, it might have had the undesired side effect that people see a procedure as more transparent than it would be in a real world context due to having more access to information. An example would be the way we described the top-down procedure when in a real scenario the public only gets to know the result after everything has already been concluded without necessarily knowing the inner workings. This discrepancy might have accidentally equaled out the perception of transparency between conditions. Consequently, future research could focus on researching the influence detailed explanations could have on perceptions of transparency. Research should see if perceptions of inclusivity change if a procedure is described in detail as opposed to no description.

Concerning the ANOVA results for perceived accountability of decision makers, the problem might have been that students were not sure by what standards as an example the board or citizens initiate review would be held accountable. Some literature suggests that people see accountability only as an important element if it abides by specific predetermined standards which have to be explicitly stated (Aleksovska, 2021). However, due to constraints in the questionnaire length, as the questionnaire was conducted with other people with individual hypotheses, it was not possible to completely specify for each condition how decision makers would have been held accountable. Additionally, some research supports that perceptions of accountability seem to be weaker for top down policy making procedures, which is theorised to

be due to low amounts of trust citizens have in regards to politicians being held accountable by higher ranking politicians (Brummel & de Blok, 2024). Possible future research could focus on the effects that specific predetermined standards of accountability can have on the perception of accountability and if low trust in policy makers being held accountable leads to a lower perception of accountability even in participatory processes.

Just as the other variable, perceived inclusiveness did not differ between conditions. However, while the global ANOVA led to non-significant results, pre-planned pairwise analyses were carried out and found significant results in two pairwise comparisons. The perceived inclusiveness differed significantly between the top-down condition and both the referendum with expert pamphlet and the referendum with student pamphlet. The hypothesis that the top-down condition would yield the lowest scores in all variables is at least partially true when looking at perceived inclusiveness. The other pairwise comparisons between the top-down and the other two conditions under perceived inclusiveness are also approaching significance and might become significant in a follow-up study with sufficient power. Against prediction, the condition referendum with an expert pamphlet seems to be perceived as more inclusive than the pure referendum. We expected that the referendum would rank higher in terms of difference to the top-down condition as inclusion is operationalised as the proportion of citizens that are able to participate on a more or less equal plane in controlling and contesting the designing of policies and laws (Schmidt & Wood, 2019). A possible explanation for the higher perceived inclusiveness of the two referendum conditions compared to the top-down as well as the higher inclusiveness compared to the regular referendum is that participants might feel that people's ability to influence the decision has indeed been equalised as the gap between uninformed and informed people most probably has been narrowed in the conditions in which experts and other people

share their knowledge. This would mean that more information should lead to higher perceptions of inclusiveness. This is supported by research focusing on perceived inclusion being improved when people share information amongst themselves in the workplace (Chen & Tang, 2018).

Future research could focus on how perceptions of inclusiveness change when varying degrees of information is provided to potential voters. Does providing more information, as theorised, indeed make people perceive everyone as more equal in a policy making procedure even though the information is given and influenced by a select few.

Possible reasons for the non-significant results concerning perceived legitimacy could be people believing that any decision against climate change is legitimate, regardless of how it was reached, as it is generally perceived as a pressing issue (Pinkerton & Rom, 2021; Biswas & Tortajada, 2022; Kalele et al., 2021). People might thus be less concerned about how a decision against something they deem bad is reached and perceive legitimacy due to their desired result being reached even if it was reached through a top-down approach in which they have no power. This would be in line with the finding that people rate outcomes they find desirable 2 points higher on a five point scale of legitimacy than outcomes they find undesirable (Arnesen, 2017). Alternatively, what participants understand under legitimacy might be very subjective, thus differing significantly between participants leading to unclear results. As an example, while one person might only perceive a procedure as legitimate in case it is purely science and evidence based, subsequently perceiving the referendum with expert pamphlet as very legitimate, another person might see it as not legitimate if procedures are not decided by everyone equally leading to low perceived legitimacy scores on the same procedure for the same variable the other person is rating high. Future research should study how the legitimacy of a decision is perceived when the outcome is seen as legitimate, but not the way it is reached. If it is in line with our theorising then

the outcome in important matters like climate change make up for the way it is reached , showing in a way that means justify the ends.

The Predictors of Perceived Legitimacy in the Regression

After the non-significant results of the ANOVAs we will now take a look if the trend follows over to this analysis or if the three perceived normative principles are able to predict perceived legitimacy. As indicated by the multiple regression this assumption does hold true for two out of the three perceived normative principles. This finding is thus in line with political theories proposing models that the perception of legitimacy is predicted by perceived transparency and perceived accountability of decision makers (Zelli et al., 2020; Curtin & Meijer, 2006; Schmidt & Wood, 2019).

That perceived transparency predicted the perception of legitimacy significantly and is thus in line with our earlier theorising as well as psychological and political research (Kang, 2023; Zelli et al., 2020). It is in contrast to findings claiming that the perception of more transparency would lead to less perceived legitimacy due to citizens gaining a negative perspective on the procedure. These studies claimed that higher perceptions of transparency could lead to lower perceptions of trust due to citizens having access to information about potential flaws which in turn lowered perceived legitimacy (De Fine Licht, 2011). Future research could focus on exploring that topic further by providing negative information and investigating if providing this information would still lead to perceived transparency being a predictor of perceived legitimacy.

Perceived accountability of decision makers is in line with psychological and political research (Brummel & de Blok, 2024; Nițoiu, 2015 ;Zelli et al., 2020) as it significantly predicts the perception of legitimacy. Important to mention is that some research suggests that perceived

accountability only affects perceptions of legitimacy if the decision makers are held accountable by fellow citizens and not higher ranking officials, due to low trust in officials holding said decision makers actually accountable (Brummel & de Blok, 2024). As our conditions were mostly participatory processes with heavy involvement of citizens, we might have investigated the link concerning perceived accountability and perceived legitimacy in situations holding decision makers accountable by fellow citizens, as they control more of the process in participatory decision making processes.

Perceived inclusiveness seems to not be a statistically significant variable in the model predicting the perception of legitimacy even though it is seen as an important part of legitimacy by some (Böhmelet et al., 2015) or at least an important part of policies for others (Abrams et al., 2005). An explanations for this might be explained by a study conducted on the link between perceived inclusiveness and perceived legitimacy of peace treaties producing the same result (Direnç, 2017), additionally indicating that solutions produced by experts had higher perceived legitimacy scores than solutions made by civil societies composed only of people living in the region. There might be the perception that the inclusion of more people could lead to experts' voices being less influential. This in turn could lead to perceptions of possibly worse outcomes, an assumption supported by peoples general belief that experts would find better solutions than laypersons (Bromme & Goldman, 2014). Perceptions of possibly worse outcomes could then lead to less perceived legitimacy, as a policy's most important reason for existing is to tackle a problem that people want to have solved or mitigated. That would mean if a part of the decision making procedure is hindering that goal, it would damage what people want from the procedure. That does not mean that inclusiveness necessarily leads to a worse outcome, but the perception that everyone might have the same amount of influence over a decision, possibly drowning out

voices of people knowledgeable about the problem, could indeed be responsible for the results that perceived inclusiveness, influencing the way people rate the possible outcome, is not a statistically significant predictor for perception of legitimacy. Future research should thus focus on the question if perceptions of inclusiveness negatively predict perceptions of effectiveness as this might be a primary reason why people's perceptions of legitimacy are not necessarily predicted by perceived inclusiveness. Additionally, research should consider exploring the nature of the relationship between perceived legitimacy and perceived effectiveness of the procedure's outcome, to further explore the link between perceptions of the three factors effectiveness, legitimacy and inclusiveness.

Additionally it is important to mention several limitations our study was subjected to. The first one is that the study was significantly underpowered as not even a third of the desired sample size was reached, which was needed for the ANOVAs, which sometimes only had 19 participants per condition. As an alternative to the factors discussed above, this could explain the non-significant results which were reported in all ANOVAs. Another general limitation was the use of a university convenience sample that only consisted of behavioural and social science students. This could damage the external validity as the results of perceived normative principles predicting perceived legitimacy as perceptions of what is legitimate most likely differ between ages, educational background, nationality and many more (McLean et al., 2019).

Regardless of these limitations there are practical implications arising from this research. First of all, governments do not necessarily need to include measures aiming at increasing inclusiveness if they have the aim to design public participation which increases people's perception of legitimacy. Additionally, there are practical implications for organisations aiming to improve the perception of inclusiveness. These organisations should try to avoid procedures

utilising a top-down approach to policy making. Instead they should employ public participation procedures such as citizens initiative reviews and expert reviews coupled with referendums, improving the people's perception of inclusiveness regarding the procedure.

References

- Abrams, D., Hogg, M. A., & Marques, J. M. (2005). Social psychology of inclusion and exclusion. *Psychology Press*. <http://site.ebrary.com/id/10094883>
- Aleksovska, M. (2021). Accountable for What? The Effect of Accountability Standard Specification on Decision-Making Behavior in the Public Sector. *Public Performance & Management Review*, 44(4), 707–734. <https://doi.org/10.1080/15309576.2021.1900880>
- Arnesen, S. (2017). Legitimacy from Decision-Making Influence and Outcome Favourability: Results from General Population Survey Experiments. *Political Studies*, 65, 146–161. <https://doi.org/10.1177/0032321716667956>
- Biswas, A. K., & Tortajada, C. (2022). *Water security under climate change*. Springer. <https://doi.org/10.1007/978-981-16-5493-0>
- Bromme, R., & Goldman, S. R. (2014). The Public’s Bounded Understanding of Science. *Educational Psychologist*, 49(2), 59–69. <https://doi.org/10.1080/00461520.2014.921572>
- Brummel, L., & de Blok, L. (2024). Do political and social accountability arrangements increase citizens’ legitimacy perceptions? A vignette experiment in the Netherlands. *Public Management Review*, 1–25. <https://doi.org/10.1080/14719037.2024.2337843>
- Böhmelt, T., Böker, M., & Ward, H. (2015). Democratic inclusiveness, climate policy outputs, and climate policy outcomes. *Democratization*, 23(7), 1272–1291. <https://doi.org/10.1080/13510347.2015.1094059>
- Chen, C., & Tang, N. (2018). Does perceived inclusion matter in the workplace? *Journal of Managerial Psychology*, 33(1), 43–57. <https://doi.org/10.1108/JMP-02-2017-0078>

- Curtin, D., & Meijer, A. J. (2006). Does transparency strengthen legitimacy? *Information Polity*, 11(2), 109–122. <https://doi.org/10.3233/IP-2006-0091>
- DeCaro, D. A., & Stokes, M. K. (2013). Public Participation and Institutional Fit A Social-Psychological Perspective. *Ecology and Society*, 18(4).
- De Fine Licht, J. (2011). Do We Really Want to Know? The Potentially Negative Effect of Transparency in Decision Making on Perceived Legitimacy. *Scandinavian Political Studies*, 34(3), 183–201. <https://doi.org/10.1111/j.1467-9477.2011.00268.x>
- Direnç K. (2017). Inclusiveness and the Perceived Legitimacy of Peace Treaties: Findings from a Survey Experiment in Northern Cyprus. *Cyprus Review* 27 (2): 89-104. <https://www.cyprusreview.org/index.php/cr/article/view/48>.
- Kang, W. (2023). Exploring the Nexus between Transparency and Citizens' Intention to Participate in Climate Change Policy-Making. *Sustainability*, 15(21), 15520. <https://doi.org/10.3390/su152115520>
- Kalele, D. N., Ogara, W. O., Oludhe, C., & Onono, J. O. (2021). *Climate change impacts and relevance of smallholder farmers' response in arid and semi-arid lands in Kenya*. 12. <https://doi.org/10.1016/j.sciaf.2021.e00814>
- Li, M., & Zhao, J. (2019). Gaining Acceptance by Informing the People? Public Knowledge, Attitudes, and Acceptance of Transportation Policies. *Journal of Planning Education and Research*, 39(2), 166–183. <https://doi.org/10.1177/0739456X17732623>
- McLean, K., Wolfe, S. E., & Pratt, T. C. (2019). Legitimacy and the Life Course: An Age-graded Examination of Changes in Legitimacy Attitudes over Time. *Journal of Research in Crime and Delinquency*, 56(1), 42–83. <https://doi.org/10.1177/0022427818793934>

- Nițoiu, C. (2015). *The EU foreign policy analysis : democratic legitimacy, media, and climate change*. Palgrave Macmillan. <https://doi.org/10.1007/978-1-137-49198-5>
- Patterson, J. J. (2021). *Remaking political institutions : climate change and beyond*. Cambridge University Press. <https://doi.org/10.1017/9781108769341>
- Perlaviciute, G., & Squintani, L. (2020). *Public Participation in Climate Policy Making: Toward Reconciling Public Preferences and Legal Frameworks*. 2(4), 341–348. <https://doi.org/10.1016/j.oneear.2020.03.009>
- Pinkerton, K. E., & Rom, W. N. (2021). *Climate change and global public health* (Second edition). Springer. <https://doi.org/10.1007/978-3-030-54746-2>
- Sang Gyu Kwak, & Jong Hae Kim. (2017). Central limit theorem: the cornerstone of modern statistics. *Korean Journal of Anesthesiology*, 70(2), 144–156. <https://doi.org/10.4097/kjae.2017.70.2.144>
- Schmidt, V., & Wood, M. (2019). Conceptualizing throughput legitimacy: Procedural mechanisms of accountability, transparency, inclusiveness and openness in EU governance. *Public Administration*, 97(4), 727–740. <https://doi.org/10.1111/padm.12615>
- Wallner, J. (2008). Legitimacy and Public Policy: Seeing Beyond Effectiveness, Efficiency, and Performance. *Policy Studies Journal*, 36(3), 421–443. <https://doi.org/10.1111/j.1541-0072.2008.00275.x>
- Zelli, F., Backstrand, K., Nasiritousi, N., Skovgaard, J., & Widerberg, O. (2020). *Governing the climate-energy nexus : institutional complexity and its challenges to effectiveness and legitimacy*. Cambridge University Press. <https://doi.org/10.1017/9781108676397>

Appendix A

BSc thesis 24.II – Environmental decision-making at the faculty – Vignettes

background measures; demographics, values, technologies familiarity, ...

Next, you will be presented with a description of certain situation. Please read the text carefully.

Afterwards, you will be asked to answer some questions about it.

Intro:

Imagine that, in order to combat climate change, the BSS faculty needs to implement a policy to reduce its carbon footprint.

Conditions:

Top Down condition

This is being decided by the **BSS faculty board**.

Specifically, the **BSS faculty board members suggest and discuss several options** to reduce the faculty's carbon footprint. One of these options concerns *deep geothermal heating*; a technology that heats buildings with warmth that is naturally present at 500 meters or more below the earth's surface.

After discussing amongst each other, the board puts the *geothermal heating* option up for a board vote. **All board members can vote on whether the policy is implemented.**

- [measures; perceived group values, trust, procedural acceptance, ...]

[topdown outro]

Now, imagine that **a majority of the board members voted in favour** of implementing deep geothermal heating at the faculty. Deep geothermal heating will therefore be implemented at the faculty.

- [remaining measures; perceptions of decision, ...]

Referendum conditions

This is being decided by means of a **faculty-wide referendum**.

Specifically, the **BSS faculty board members suggest and discuss several options** to reduce the faculty's carbon footprint. One of these options concerns *deep geothermal heating*; a technology that heats buildings with warmth that is naturally present at 500 meters or more below the earth's surface.

After discussing amongst each other, the board puts the *geothermal heating* option up for a faculty-wide referendum vote: **all students at the BSS faculty can vote on whether the policy is implemented.**

[no review]

- [measures; perceived group values, trust, procedural acceptance, ...]

[pamphlet intro]

Before the referendum takes place, **all students are provided with a voter pamphlet**; a one-page report that summarises pros and cons of implementing deep geothermal heating at the faculty.

[expert review]

This voter pamphlet was **produced by an expert review panel**.

Specifically, various experts were invited to take part in the panel. The **panel members met for several consecutive weekends to review** the geothermal policy proposal. After discussing amongst each other, the panel members summarised the pros and cons that they deemed most important into a one-page pamphlet.

- [measures; perceived group values, trust, procedural acceptance, perceptions of pamphlet, ...]

[student review]

This voter pamphlet was **produced by a student review panel**.

Specifically, students were invited to take part in the panel. **50 students were randomly selected from the entire faculty, by lottery**. This lottery used quotas to select a ‘mini-public’ that mirrors the wider population: the panel’s percentages of different groups of people (of different age, gender, nationality, etc.) were similar to these groups’ percentages in the broader

population. For example, if 30% of the faculty are first year students, about 30% of the assembly members are also first year students.

Supported by various experts, the **panel members met for several consecutive weekends to review** the geothermal policy proposal. After discussing amongst each other, the panel members summarised the pros and cons that they deemed most important into a one-page pamphlet.

- [measures; perceived group values, trust, procedural acceptance, perceptions of pamphlet, ...]

[referendum outro]

Now, imagine that a **majority of the students that took part in the referendum voted in favour** of implementing deep geothermal heating at the faculty. Deep geothermal heating will therefore be implemented at the faculty.

- [remaining measures; perceptions of decision, ...]

Citizens assembly condition

This is being decided by means of a **student assembly**.

Specifically, students were invited to take part in the assembly. **50 students were randomly selected from the entire faculty, by lottery**. This lottery used quotas to select a ‘mini-public’ that mirrors the wider population: the panel’s percentages of different groups of people (of different age, gender, nationality, etc.) were similar to these groups’ percentages in the broader

population. For example, if 30% of the faculty are first year students, about 30% of the assembly members are also first year students.

Supported by various experts, the **assembly members met for several consecutive weekends to suggest and discuss several options** to reduce the faculty's carbon footprint. One of these options concerns *deep geothermal heating*; a technology that heats buildings with warmth that is naturally present at 500 meters or more below the earth's surface.

After discussing amongst each other, the assembly puts the *geothermal heating* option up for an assembly vote. **All assembly members can vote on whether the policy is implemented.**

- [measures; perceived group values, trust, procedural acceptance, ...]

[assembly outro]

Now, imagine that a **majority of the assembly members voted in favour** of implementing deep geothermal heating at the faculty. Deep geothermal heating will therefore be implemented at the faculty.

- [remaining measures; perceptions of decision, ...]

Appendix B

BSc thesis 24.II – Environmental decision-making at the faculty – Items

[Background measures]

Before we start the study, we would like to know a little bit more about who you are. Please answer the following questions as truthfully and accurately as possible.

[age]

Please indicate your age: ...

[gender]

Please indicate your gender: ...

[nationality]

Please indicate your nationality: ...

[personal values]

Below are several statements that describe a certain hypothetical person; specifically, about their values, what they generally find important in life. On a scale from 1 to 7, please indicate the extent to which you consider this person to be **dis/similar to you yourself**.

“It is important to this person ...”

... to prevent environmental pollution

... to protect the environment

... to respect nature

... to be in unity with nature

- ... for everyone to have equal opportunities
- ... to take care of those people who are worse off
- ... to have fun
- ... to enjoy life's pleasures
- ... to be influential
- ... to work hard and be ambitious

1 – very dissimilar to me; 4 – neither dissimilar nor similar to me; 7 very similar to me

[energy technology familiarity]

Below are several energy sources and/or technologies. On a scale from 1 to 7, please indicate the extent to which you are **familiar with them**.

- Wind turbines
- Natural gas
- Deep geothermal heating
- Oil
- Solar panels
- Coal
- Hydrogen
- Nuclear energy

1- never heard of it; 4 - know it a little; 7 - know it very well

[eco-guilt; pre]

Next, we are interested in your feelings in relation to climate change. On a scale from 1 to 7, please indicate the extent to which you dis/agree with the following statements.

I feel ...

- ... guilty for not paying enough attention to the issue of climate change
- ... like I should be doing more than I have done to address the problem climate change
- ... I sufficiently fulfil my duty to alleviate climate change [R]

1 – completely disagree; 4 – neither disagree nor agree; 7 – completely agree

[conformity; behavioural, affective]

Finally, we are interested in how you generally relate to others. On a scale from 1 to 7, please indicate the extent to which you dis/agree with the following statements.

- I tend to go along with my friends when I have to quickly decide on something
- I often ignore the advice of my peers [R]
- Fitting in with my group is important to me
- I don't care what people in my inner circle think of me [R]

1 – completely disagree; 4 – neither disagree nor agree; 7 – completely agree

On the next page, you will be presented with a description of a certain situation. Please read the text carefully. Afterwards, you will be asked to answer some questions about it.

Measures after first part of vignette

The following questions are about *your thoughts about the situation described above.*

Before we ask you about the situation in general, we are interested in your perceptions of the people involved in the situation in particular.

[deliberativeness/diversity/value alignment/influence/trust[integrity&competence]/descriptive representation/substantive representation, indiv., coll.]

The following questions are about the [board members/students] that [developed the policy/pamphlet/participated in the [referendum/panel/assembly]]. On a scale from 1 to 7, please indicate the extent to which you dis/agree with them.

I feel that [*decisionmakers*] ...

- ... carefully weigh and balance different pros and cons of different policy options
- ... carefully reflect on different environmental policies from different angles
- ... are diverse
- ... find the same things important in life as me
- ... have the same values as I have

- ... have considerable influence over the decision that is being made
- ... can significantly steer the outcome of the decision-making process in a certain direction
- ... are honest and sincere
- ... take different interests into account
- ... are competent
- ... have the right knowledge and expertise
- ... are similar to me
- ... resemble BSS students at large
- ... have the same policy preferences as I have
- ... have the same policy preferences as BSS students
- ... act in my interest
- ... act in the interest of BSS students

1 – completely disagree; 4 – neither disagree nor agree; 7 – completely agree

[identification]

I identify with [*decisionmakers*]

1 – completely disagree; 4 – neither disagree nor agree; 7 – completely agree

Next, we are interested in your perceptions of the overall situation.

[perceived control/voice; individual, collective /attention/respect]

Considering the situation described above, on a scale from 1 to 7, please indicate the extent to which you dis/agree with the following statements.

I feel that, in a situation described above, ...

- ... I would be able to affect the decision that is made
- ... BSS students would be able to affect the decision that is made
- ... I would be able to express my thoughts on the matter at hand
- ... BSS students would be able to express their thoughts on the matter at hand
- ... I would feel heard and listened to
- ... I would feel taken seriously
- ... I would be treated with respect and dignity

1 – completely disagree; 4 – neither disagree nor agree; 7 – completely agree

[attention check]

Please select ‘completely agree’ to show you are paying attention to this question.

1 – completely disagree; 4 – neither disagree nor agree; 7 – completely agree

[perceived subjective representation; individual, collective]

“In decision-making contexts, people sometimes talk of ‘being represented’. In the context of the situation described above, on a scale from 1 to 7, to what extent would you dis/agree with the following statements?”

I feel that, in a situation described above, ...

- ... I would be represented
- ... faculty students and staff would be represented

1 – completely disagree; 4 – neither disagree nor agree; 7 – completely agree

[decision perceptions; complexity, impact]

The following questions are about your perceptions of the policy that is up for decision. On a scale from 1 to 7, please indicate the extent to which you dis/agree with the following statements.

I feel that **the decision on deep geothermal heating at the faculty** ...

- ... is a complex one
- ... is of a highly technical character
- ... can have considerable impact on BSS students
- ... doesn't involve any significant implications for BSS students [R]

1 – completely disagree; 4 – neither disagree nor agree; 7 – completely agree

[democratic ideals/perceived procedural fairness/substantive procedural dimension/constructive procedural dimension/creativity/procedural acceptance, pre]

“The following questions are about *your opinions about the way of decision-making described above*. On a scale from 1 to 7, please indicate the extent to which you dis/agree with the following statements.“

I find that this way of decision-making ...

- ... is open and transparent
- ... is unbiased
- ... is inclusive
- ... treats people as equals
- ... holds decision-makers accountable for their actions
- ... is democratic

- ... is fair
- ... is just
- ... is legitimate
- ... upholds ethical and moral standards

- ... can lead to decisions that are made based on the right knowledge and expertise
- ... can lead to effective solutions for difficult problems

- ... is able to identify a shared common ground in a diverse mix of perspectives
- ... can settle conflicts of interests

- ... can bring in new and original ideas for ways in which climate change might be addressed

- ... is a good way to come to decisions
- ... is acceptable

1 – completely disagree; 4 – neither disagree nor agree; 7 – completely agree

[pamphlet perceptions]

The following questions are about your thoughts about the voter pamphlet that **the [expert/student] review panel** produced. On a scale from 1 to 7, please indicate the extent to which you dis/agree with the following statements.

I think that the information on the voter pamphlet would be ...

- ... accurate; the pamphlet presents information that is factually correct
- ... understandable; the pamphlet discusses policy characteristics that referendum voters can make sense of
- ... relevant; the points addressed by the pamphlet align with what BSS students would want to know
- ... diverse; the pamphlet addresses various kinds of aspects of the proposal

1 – completely disagree; 4 – neither disagree nor agree; 7 – completely agree

[policy opinion; pre]

Now, we are interested in your own opinion about deep geothermal heating at the faculty.

On a scale from 1 to 7, how negative or positive is your opinion about deep geothermal heating

at the faculty?

1 - very negative; 4 – neutral; 7 – very positive

And, on a scale from 1 to 7, how un/certain are you of your opinion?

1 – very uncertain; 4 – neither uncertain nor certain; 7 – very certain

[willingness to participate]

Finally, the following questions are about your thoughts on participating in the referendum yourself.

On a scale from 1 to 7, how important do you find it that you yourself participate in this referendum on an environmental decision?

1 – very unimportant; 4 ... neither unimportant nor important; 7 – very important

And, on a scale from 1 to 7, how likely is it that you yourself would actually participate in this referendum on an environmental decision?

1 – very unlikely; 4 ... neither unlikely nor likely; 7 – very likely

Measures after second part of vignette

Now, we are interested in your thoughts about the decision to implement deep geothermal heating at the faculty. On a scale from 1 to 7, please indicate the extent to which you dis/agree with the following statements:

[decision perceptions; collective will, favourability, environmental impact, risk perceptions]

Implementing deep geothermal heating at the faculty ...

- ... reflects the will of the BSS students
- ... serves my interests
- ... serves the interests of the BSS students
- ... reduces the faculty's carbon footprint considerably
- ... involves significant risks for the environment
- ... involves significant risks for BSS students
- ... involves considerable annoyances for BSS students

1 – completely disagree; 4 – neither disagree nor agree; 7 – completely agree

[policy opinion; post]

Considering the decision to implement deep geothermal heating at the faculty, on a scale from 1 to 7, how negative or positive would your opinion be about deep geothermal heating at the faculty?

1 - very negative; 4 – neutral; 7 – very positive

And, on a scale from 1 to 7, how un/certain would you be of your opinion?

1 – very uncertain; 4 – neither uncertain nor certain; 7 – very certain

[policy acceptance]

Considering the scenario you have read, how un/acceptable would you find implementing deep geothermal heating at the faculty?

1 – very unacceptable; 4 – neither unacceptable nor acceptable; 7 – very acceptable

[procedural fairness/procedural acceptance, post]

Now, considering the decision to implement deep geothermal heating at the faculty, what would be your overall evaluation of the entire decision-making process you have read about? On a scale from 1 to 7, please indicate the extent to which you dis/agree with the following statements.

I find that this way of decision-making ...

- ... is fair
- ... is a good way to come to decisions
- ... is acceptable

1 – completely disagree; 4 – neither disagree nor agree; 7 – completely agree

[participation/contribution]

Considering the scenario you just read, on a scale from 1 to 7, how much would you dis/agree with the followings statements?

For the following questions, please imagine that you yourself [had voted in the referendum/were selected as a member in the student review panel, as well as had voted in the referendum/were

selected as a member in the assembly]. On a scale from 1 to 7, how much would you dis/agree with the followings statements?

On a scale from 1 to 7, to what extent do you feel you would have participated in the decision-making process leading up to the implementation of deep geothermal heating at the faculty?

1 - not at all participated; 4 - somewhat participated; 7 -participated a lot

And, on a scale from 1 to 7, how much would you dis/agree with the followings statements?

[My voting in the referendum/My student review panel membership as well as voting the referendum/My assembly membership] ...

- ... would have helped advance remedies against global warming
- ... would be a considerable contribution to the solving of climate change

1 – completely disagree; 4 – neither disagree nor agree; 7 – completely agree

[eco-guilt, post]

And, considering [the scenario/that you voted in the referendum/were selected as a member in the student review panel, as well as had voted in the referendum/were selected as a member in the assembly], what would you be feeling in relation to climate change afterwards?

On a scale from 1 to 7, please indicate the extent to which you dis/agree with the following statements.

I would feel ...

- ... guilty for not paying enough attention to the issue of climate change

- ... like I should be doing more than I have done to address the problem climate change

- ... I sufficiently fulfil my duty to alleviate climate change [R]

1 – completely disagree; 4 – neither disagree nor agree; 7 – completely agree