

Policy Acceptance and Support for a 2050 Hypothetical Energy Scenario

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Master Thesis - Environmental Psychology

Student number: S3812405 Date: 09 / 2023 Department of Psychology University of Groningen Examiner/Daily supervisor: R. Görsch / G. Perlaviciute 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

Investigating the levels of acceptance and support for environmental policies among the general public is important, because it can aid in the implementation of environmental policies. However, there has been a lot of diversity in how policy acceptance and support have been defined, and measured. A lack of clear definitions and measurements can hinder theoretical development and can make it difficult to compare empirical results. To help clarify the concepts of policy acceptance and support this study investigated if the two terms are empirically different constructs with distinctive predictors. Policy acceptance was measured as an attitude toward an energy scenario, while policy support was measured as a behavioral intention to help implement the scenario itself. The data from an online survey administered to 89 participants was used to assess if policy acceptance and support were distinct constructs. This was done with the use of EFA and regression. The results partly support the idea that policy acceptance and support could be two different constructs that are both multidimensional in nature. We found that perceived costs play a role in policy acceptance and support, and that personal norms predict policy support but not acceptance. The findings in this study shine more light on the constructs of policy acceptance and support, and show that improving our definitions and measurements of the constructs are important areas of interest.

Keywords: Policy acceptance, policy support, attitude, behavior, environmental policies.

Introduction

Human-induced climate change is causing negative effects worldwide through extreme weather events, sea level rise, and adverse impacts on ecosystems (Allen et al., 2018). In response to these adverse effects of climate change, governments are increasingly implementing emission reduction goals (United Nations, 2022). These goals require the implementation of climate mitigation pathways (IPCC, 2018), mitigation pathways include a range of climate policies that make it possible for nations to achieve the emission reduction goals (IPCC, 2018; Scheepers, 2022). However, climate change mitigation policies are often met with resistance from the general public (Sollaci et al., 2023; Perlaviciute & Squintani, 2020), even though people generally believe in human-induced climate change, and view the sustainable transition as positive (Sollaci et al., 2023; European Commission, 2023). Public resistance toward climate mitigation policies can, in turn, hinder the actual implementation of these policies, as politicians are influenced by public opinion (Burstein, 2003; Sevenans, 2021; Hager & Hilbig, 2020, Willis, 2018). This development caused researchers to engage with the topic and investigate relevant barriers and drivers of public acceptance and support for environmental policies (Drews & van den Bergh, 2015; Ejelöv & Nilsson, 2020). By identifying barriers and motivating factors, researchers can help to achieve successful environmental policy implementation. However, there are three major problems within the literature surrounding policy acceptance and support. First, the terms acceptance and support are used interchangeably in the literature. Secondly, acceptance and support have variant definitions attributed to them. Finally, acceptance and support have no validated scales that are used by the majority of researchers (Kysela et al., 2019). The lack of clear definitions and differentiation can hinder theoretical development in the field (Eronen & Bringmann, 2021), as the interchangeable use of the terms can lead us to draw wrong conclusions from the data, because researchers might be measuring different things while both terming the outcome as

"policy acceptance/support" (Kysela et al., 2019; Jansson & Rezvani, 2019; Dreyer et al., 2015). To aid in bridging the gap in defining, measuring, and interpreting policy acceptance and support, the current study will focus on investigating the empirical difference between policy acceptance and policy support and assess if the two terms are different constructs. In line with the previous definitions of acceptance and support by Dreyer et al. (2015) and Kysela et al. (2019) acceptance will be conceptualized as an attitude (the favorable or unfavorable evaluation of a policy), while support will be conceptualized as a behavioral intention to support the implementation of an energy scenario through a range of possible behaviors. In addition, the study will investigate a number of antecedents of policy acceptance and support. The factors include past behavior, personal norms, costs, and perceived behavioral control (PBC). The current study will furthermore examine the strength of the relationship between all the aforementioned factors, and policy acceptance and support respectively. The aforementioned aims of the study will be investigated with the help of a hypothetical energy scenario for 2050.

Literature review

Public acceptance and support

Public acceptance and support have a range of different definitions in the current literature. Some researchers prefer to use the term support when speaking about the favorable or unfavorable evaluation of a policy (Bies et al., 2013; Nisbet & Myers, 2007), while others use the term acceptance to describe behavior toward the attitude object (Huijts et al., 2012), and some use the terms interchangeably (Steg et al., 2006; PytlikZillig et al., 2018; Ejelöv & Nilsson, 2020). This is problematic as it can hinder theoretical development, and can lead to wrong conclusions being drawn from the results (Kysela et al., 2019). For example, Valkengoed et al. (2022) measured policy support as an attitude, while supporting the implementation of a policy was an example of adaptation behavior. Attitudes and behavioral intentions are thereby classified as different constructs but the same term is used to describe them. In addition, Kaiser et al. (2023) include different behavioral components in their attitude measure, and used attitudinal statements to assess support. Their two different measures did correlate significantly with each other at r = .61 (Kaiser et al., 2023), which shows similarity between acceptance and support, but not total convergence. Dreyer et al. (2015), who proposes to separate acceptance and support into an attitudinal and behavioral construct, also included an attitude question in their support scale. If acceptance and support are different empirical constructs, this item is measuring acceptance instead of support.

To facilitate theoretical development, multiple authors have already called for a distinction between policy acceptance and support, with acceptance reflecting an attitude, while support reflects behaviors or behavioral intentions (Batel et al., 2013; Dreyer et al., 2015; Kysela et al., 2019; Jansson & Rezvani, 2019) The differentiation between attitude and behavior is widely present in the psychological literature. Attitudes are often used as predictors for behavior in frequently used theoretical models like the Theory of Planned Behavior (TPB) (Ajzen, 1991). An empirical distinction between attitudes and behaviors can also be found in the literature surrounding the Green-Gap, which refers to the inability of people's attitudes toward green products and behaviors to fully explain their behaviors in this area (ElHaffar et al., 2020). The empirical distinction between attitudes and behavior has also been found for policy acceptance and support, when measured as attitude and behavior respectively (Dreyer et al., 2015; Jansson & Rezvani, 2019; Bernauer & McGrath, 2016). Dreyer et al. (2015) found that levels of acceptance were higher compared to levels of support. The favorable evaluation of, and agreement with, a fuel economy policy was higher than people's intention to support the implementation of this policy (e.g. contacting a political representative, or voicing a positive opinion about the policy toward others). Even if support

and acceptance are different empirical constructs, they are assumed to be related to each other because attitudes and their corresponding behavior are typically related (Klöckner, 2013; Glasman & Albarracin, 2006; Wallace et al., 2005). A meta-analysis by Glasman and Albarracin (2006) found that attitude-behavior correlations ranged from .01 to correlations over .80, with a mean correlation of .56. When looking at environmental attitudes and behaviors specifically, Klöckner (2013) found an average correlation of .36. When considering policy acceptance and its corresponding policy support behaviors, this relationship has also been discovered (r = .76) (Dreyer et al., 2015). Taken together, conceptual, theoretical and empirical arguments lead to the first hypothesis.

Hypothesis 1 = Environmental policy acceptance and support are different empirical constructs.

Predictors of policy acceptance and support

This study will also investigate antecedents of policy acceptance and support to see if they are differently related to acceptance and support. Past behavior, personal norms, costs, and PBC will be evaluated in terms of their relationship with policy acceptance and support. These antecedents have been selected based on their relationship with acceptance and support in the literature. The individual factors will be further discussed below.

Past behavior

Within the current study, past behavior relates to past policy support behaviors. Past behavior is assumed to be related to policy acceptance because past behaviors are found to affect attitudes regarding the behavioral object (Olson & Stone, 2005; Kroesen et al., 2017; Loughnan et al., 2010; Fujii & Kitamura 2003). Kroesen et al. (2017) found that travel mode behaviors influenced the attitude toward the specific mode of travel. When individuals increased their car use, the attitude regarding car use positively increased, the same was found for bicycle and public transport use. The effect of travel mode behavior on attitude was greater than the effect of travel mode attitudes on behavior (Kroesen et al., 2017). Previous green consumer behavior has also been linked to increased acceptance of wind energy (Thøgersen & Noblet, 2012). Performing past policy support behaviors for environmental policies is therefore assumed to be related with environmental policy acceptance.

Past behaviors are also assumed to be related to support, because past behavior has been shown to be a good predictor of future behavior (Fujii & Kitamura, 2003; Kroesen et al., 2017). The results of the study by Kroesen et al. (2017) show a stronger effect of past transportation mode use on future transportation mode use, compared to the effect of attitude. The effect of past behavior could be due to habits, as repeated past behaviors performed in stable contexts can lead to habit formation, habits make behaviors more automatic instead of conscious (Mazar & Wood, 2018). Habits have been identified as one of the factors that contribute to the Green-Gap as well (ElHaffar et al., 2020), meaning that habits can influence behaviors, bypassing attitudes. Multiple authors have stated that, next to less complex stimulus-response situations, habits can also form when it concerns complex behaviors consisting of multiple sub behaviors, or behaviors that are performed in various contexts (Hagger et al., 2023; Robbins & Costa, 2017; Marien et al., 2019). The sub behaviors form sequences that can become habitual routines over time (Robbins & Costa, 2017; Marien et al., 2019). A meta analysis by Hagger et al. (2023) indeed found that habits and past behaviors affect future behaviors, and intentions. This effect was found for both low and high complexity behaviors, although the effect was stronger for behaviors lower in complexity that had a higher chance of turning into habits (Hagger et al., 2023). Some support behaviors are more complex and performed less frequently (voting; contacting representatives, etc), and

would have a lower chance to turn into habits. Other support behaviors can be lower in complexity and performed more frequently (e.g. talking to friends about policies, and information seeking) subsequently having a higher chance of turning into habitual sequences. Complex policy support behaviors can still be associated with future support behaviors through the direct effect of past behaviors on future behavior (Hagger et al., 2023). Some authors mentioned that this direct relationship between past behavior and future behavior can be caused by underlying mechanisms that are captured by past behavior questionnaires (Ajzen, 2022) For example, personality traits have been shown to be related to activist behaviors in the past, and future (Ribeiro & Borba, 2016). Identifying the underlying mechanism captured by past behavior questionnaires is outside the scope of the current study, but it should be mentioned that past behavior might not be a psychological construct on its own (Hagger et al., 2023).

Within the current study, past behavior is expected to have stronger relationships with policy support, compared to acceptance, because individuals who accept the energy scenario can have a habit of not engaging in support behaviors, or have other barriers that cause a lack of engagement with support behaviors.

Hypothesis 2.1 = Past behaviors related to environmental policy support behaviors will be positively associated with environmental policy acceptance, and support. Past behavior will have a stronger relationship with support compared to acceptance.

Personal norms

Personal norms refer to an individual's 'feelings of moral obligation to perform or refrain from specific actions' (Schwartz, 1977). Personal norms are often used to explain an individual's pro-environmental behaviors (PEBs) and intentions with the use of the norm activation model (NAM) developed by Schwartz (1977) and the value-belief-norm theory developed by (Stern, 1999). Personal norms have been shown to predict acceptance for a range of environmental policies (Ejelövand & Nilsson, 2020), including transportation policies (Erikson et al., 2008; Keizer et al., 2019), and energy policies (steg et al., 2005).

A relationship between personal norms and support is also expected, as personal norms predict PEBs and behavioral intentions (Helferich et al., 2023; Park & Ha, 2014; Ruepert et al., 2016). Individuals with stronger personal norms to save electricity at the workplace engaged more often in electricity-saving behaviors (zhang et al., 2013). The effect of personal norms on specific support behaviors has also been demonstrated. A study by Steg & de Groot (2010) found that individuals with stronger personal norms regarding policy support behaviors (e.g. attending a demonstration) had a greater intention to participate in behaviors that would aid the implementation of a solution to decrease emissions in the city (e.g. signing petitions, and attending demonstrations).

Hypothesis 2.2 = Stronger personal norms related to supporting environmental policy introduction have a positive relationship with environmental policy acceptance and policy support.

Costs

In the current study, costs relate to the perceived behavioral and financial costs caused by the implementation of the energy scenario.

Financial costs of a policy are negatively related to levels of acceptance (Schuitema et al., 2010; Nisbest & Myers, 2007). For example, higher perceived financial costs were found to negatively affect policy acceptance of a congestion charge before its implementation (Schuitema et al., 2010). Perceived high behavioral costs, (behaviors that require adjustments to one's lifestyle (De Groot & Schuitema, 2012)), are also negatively related to acceptance

(Byrka et al., 2016; Kim, 2011; De Groot & Schuitema, 2012). For example, the more people had to adhere to restrictions to protect natural areas, the less accepting they were of nature conservation policies (Byrka et al., 2016). Higher perceived financial and behavioral costs of the energy scenario will therefore be negatively associated with acceptance.

In regards to the effect of perceived costs on policy support, the literature is still lacking. However, higher costs are associated with lower levels of acceptance, and people who do not accept a policy would also not be inclined to aid its implementation. Dreyer et al. (2015) indeed found that people who do not accept a policy also did not support it. Therefore, a negative association between costs and support is to be expected.

Hypothesis 2.3 = Perceived higher financial and behavioral costs will negatively affect policy acceptance and policy support.

Perceived behavioral control

PBC refers to the perceived ease or difficulty of performing a specific behavior (Ajzen, 1991). Within the current study, PBC relates to participating in policy support behaviors. The effect of PBC on acceptance and support is often investigated through the use of the TPB (Azjen, 1991).

Studies performed through the lens of the TPB rarely assess the effect of PBC on attitudes. However, La Barbera and Ajzen (2020) found that PBC moderated the effect of attitude on voting and energy saving behaviors. This indicates that PBC and attitudes are associated with each other, and not just separate antecedents of intention. This relationship is supported by the findings of multiple other studies. Jew et al. (2020) found a strong relationship between activist PBC beliefs and activist attitudes, as did Fielding et al. (2009). In addition, a study by Yuen et al. (2020) found that PBC and attitude shared the same antecedents. Based on this existing literature, an association between PBC and acceptance is expected.

According to the TPB, PBC should be associated with policy support behaviors and intentions. A range of different studies have identified PBC as an antecedent of proenvironmental behaviors (Ateş, 2020), including the intention to switch to electric vehicles (Afroz et al., 2015), and purchasing green products (Maichum et al., 2016; Wu & Chen, 2014). . Findings regarding the relationship between PBC and specific policy support behaviors also show a relationship between PBC and support. For example, PBC is found to be associated with intentions to engage in a range of general and environmental activist behaviors (Jew et al., 2020; Fielding et al., 2008).

PBC is assumed to be associated with both acceptance and support. However, the relationship with support is expected to be stronger because of PBC's direct effect on intention and behavior (Wu & Chen, 2014), in addition to its effect on behavior through the moderation of attitude (La Barbera & Ajzen, 2020). A meta-analysis by Hagger and Chatzisarantis (2009) indeed discovered a stronger relationship between PBC and intention, compared with PBC and attitude. Individuals can still accept a policy while feeling that they do not have the means to help its implementation.

Hypothesis 2.4 = Higher PBC will be positively related to policy acceptance and policy support behaviors. PBC will have a stronger relationship with support compared to acceptance.

Outlook on the current study

The current study will examine if policy acceptance and support are different constructs. Here, policy acceptance will be operationalized as an attitude toward an energy scenario, while support will entail a range of different behavioral intentions to support the implementation of the scenario. In addition, the previously discussed antecedents will be investigated in terms of their relationship with policy acceptance and support (figure 1).

Figure 1

Overview of the Hypotheses



Note. "+" indicates a positive relationship, and "-" indicates a negative relationship. When lines are bold, the relationship between the IV and DV is stronger, compared to the relationship between the IV and the other DV.

Method

Ethics statement

The current study conforms to the guidelines of the Ethics Committee of the Faculty of Behavioral and Social Sciences at the University of Groningen (EC-BSS). The study was exempt from review, as it was submitted to the fast track procedure. Relevant research documents were registered prior to the start of the study, but not reviewed.

Participants

A sample of 85 participants was required for the regression analysis. This sample size was calculated with the use of G*Power (faul et al., 2007), with settings corresponding to a power of .80, an alpha level of .05, and a medium effect size of f2 = .015 (Appendix A). A target sample size of 200 was chosen for the exploratory factor analysis (EFA). This sample size was set by determining the minimum number of participants required for EFA which is mostly set at a minimum of 100 to 200 (Jung et al., 2020). However, Sürücü et al. (2022) propose that 200 participants is the absolute minimum sample size required for EFA.

Throughout May and June of 2023, 89 participants were recruited. Respondents were mostly sampled through a convenience sampling method via the University of Groningen's SONA system. The SONA system is the university's first-year participants pool, which rewards first-year bachelor students with research credits when participating in studies. In addition, snowball sampling was used to increase the number of participants as well as increase diversity within the sample. The questionnaire was sent out among the personal networks of the researcher with the question for participants to distribute it within their own networks, and posted on Facebook. Participants recruited via snowball sampling all received the questionnaire with a standardized message asking them to participate. After data cleaning procedures the final sample was 68 (48 from SONA and 20 from snowball sampling), 21 (23.6%) were removed from the data-set because of missing values. Participant demographics can be found in Appendix B. The required sample size could not be met due to time constraints. Sampling was mostly dependent on the University of Groningen's SONA system, which shut down before the desired sample size was reached.

Design

The study had a cross-sectional design, performed through an online survey administered via Qualtrics (Qualtrics, Provo, UT). The questionnaire was presented in English. The independent variables (IVs) that were measured included personal norms; PBC; past behavior; and costs. The dependent variables in the study were people's level of policy acceptance and support toward a 2050 hypothetical energy scenario.

Measures

The complete questionnaire can be found under Appendix C.

Personal norms

Personal norms were measured with three items (e.g. "I would feel guilty if I did not help facilitate environmental policies in any way") on a seven-point Likert scale (1 = strongly disagree – 7 = strongly agree). The items were adapted from van der Werff and Steg (2015) who measured personal norms regarding energy-saving behaviors. For this study, the items were adapted to relate to personal norms regarding the support of an energy policy. Reliability of the scale was high (Cronbach's α = .84).

Perceived behavioral control

PBC was measured with four items (e.g. "If I want to, I can help facilitate the introduction of environmental policies") on a seven-point Likert scale (1 = strongly disagree – 7 = strongly agree). The items were adapted from Ajzen (1991; 2006). The internal consistency for the PBC scale was low (Cronbach's α = .51). An alpha of .7 is generally viewed as acceptable, while an alpha of .6 might be acceptable for exploratory research (Hair et al., 2010). However, an alpha of .5 is generally considered to represent poor internal consistency (George & Mallery, 2003). Therefore, PBC was excluded from the analysis due to its low Cronbach's Alpha value, and hypothesis 2.4 could not be tested. The exclusion of a variable due to a low Cronbach's alpha was not pre-registered.

Past behavior

Past behavior was assessed with a self-created scale that consisted of five-items (e.g. "I discuss current environmental policies with people I know"), measured on a five-point scale (1 = never - 7 = always). The internal consistency for the past behavior scale was acceptable (Cronbach's $\alpha = 0.7$).

Perceived Costs

Costs were measured with four items (e.g "these policies are financially too costly for society to introduce"), on a 7-point scale (1 = totally disagree - 7 = totally agree). As with past behavior, no previously validated items for costs, as operationalized in this study, could be identified in previous literature. Therefore, the items have been created for this study. The internal consistency for the cost scale was acceptable (Cronach's $\alpha = .72$).

Policy acceptance

Policy acceptance was measured as an attitude. Participants rated on a 7-point Likert scale (1 = totally disagree - 7 = totally agree) how much they agreed with 4 terms describing the proposed scenario (e.g. "good; useful; etc.). The scale was derived from Perlaviciute et al. (2021), and internal consistency was high (Cronbach's $\alpha = .88$).

Policy support

Policy support was measured with a self-created scale consisting of six items about behavioral intentions to support the proposed policy scenario (e.g. "I would talk about this environmental policy with the people I know"). Participants could rate on a 7-point scale to what extent they would participate in a range of policy support behaviors (1 = very unlikely - 7 = very likely), internal consistency was high (Cronbach's $\alpha = .83$).

Procedure

Before data collection, the study was pre-registered through the Open Science Framework: https://doi.org/10.17605/OSF.IO/WBT7H.

Before they could start answering the items in the questionnaire, participants were presented with information about the purpose of the study and their rights as participants, and subsequently asked to give informed consent.

Participants first answered the demographic questions, followed by the items relating to personal norms, past behaviors, and PBC. After these initial questions, participants were presented with a hypothetical energy scenario for 2050 (Appendix D). Afterward, participants answered questions about their attitude toward the hypothetical scenario, and their behavioral intention to support the introduction of the proposed scenario. Finally, participants answered

the items relating to financial and behavioral costs in relation to the proposed hypothetical scenario.

Analysis section

Factor analysis

EFA was used to investigate if policy acceptance and support are different constructs (hypothesis 1). The items in the policy acceptance and support scales were used as variables in the EFA. The number of retained factors before rotation was based on Eigenvalues (Eigenvalues > 1 would be retained), and inspection of the scree plot (appendix E1) (Watkins, 2021). After extracting the factors, Oblique rotation was used (Direct Oblimin), as this allowed for the factors to be correlated. This decision was based on the assumption that acceptance and support would be correlated. Factor loadings of .32 and above were considered practically significant (Watkins 2021).

Multiple procedures were employed to verify if the correlation matrix (Appendix E2) contained enough covariance to conduct an EFA (Watkins, 2021). First, the value associated with the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) was inspected, The KMO value judges if the items are adequate to include in the factor analysis. The KMO value was .799 and should be above a .6. In addition, Bartlett's Test of Sphericity was performed. The Barlett test of Sphericity compares the correlation matrix of the items to a correlation matrix where there would be no association. Barley test was significant (p < .001) Finally, the correlation matrix was also inspected to see if it contained enough correlations above .3 (Pallant, 2016) (appendix E2). The model-fit test used was RMSR. An RMSR value of p = .05 or smaller will indicate a close model fit, while a value between .051 and .08 will indicate an acceptable fit. The RMSR score was calculated with the statistical program Residuals (appendix E3) (Watkins, 2015), available from https://edpsychassociates.com/Watkins3.html.

Hypothesis 1 would be fully supported if the EFA came back with two factors, 1 with the acceptance items and one with the support items. The hypothesis would be partly supported if the EFA came back with 3 factors; one with the acceptance items, one with the low effort support behaviors (items 1-3), and one with the high effort support behaviors (items 4-6)

Multiple Regression analysis

A multiple regression was performed to investigate the relationship between the IVs (personal norms, past behavior, PCB, and costs) and the DV policy acceptability. Another multiple regression analysis examined the relationship between the IVs (personal norms, past behavior, PCB, and costs) and the DV policy support. Correlations between the IVs and DVs were examined to see if the IVs had different relationships with acceptance and support respectively.

Before performing the analyses, the assumptions of the linear regression model were checked; independence, linearity, no multicollinearity, multivariate normality, and homoscedasticity. The independence assumption was met through the cross-sectional design of the study. The linearity assumption was checked by investigating the scatterplot of the independent variable scores plotted against the scores of the dependent variables (Appendix F1). There was no evidence of nonlinearity in the dataset. Multicollinearity was tested using the variance inflation factor (VIF), with a VIF value above 5 indicating multicollinearity that could negatively affect the analysis (Vatcheva et al., 2016). No multicollinearity was discovered among the different IVs, as all VIF values were below 2. The homoscedasticity assumption was checked by examining a scatterplot of the residuals (Osbourne & Waters, 2002). The scatterplot showed a violation of the homoscedasticity assumption for the DV acceptance (appendix F2). For the DV support, no evidence was found for a violation of the

homoscedasticity assumption (appendix F3). The normality assumption was assessed through inspection of the Normal Probability Plot (Tabachnick & Fidell, 2013). The Normal Probability Plot for the DV acceptance did indicate non-normality (appendix F4). There was no indication of a violation of the normality assumption for the DV support (appendix F5). To address the violated assumptions of homoscedasticity and normality for policy acceptance the variable was log-transformed. After applying a log transformation, the residuals followed a near-normal distribution (appendix F6). To increase robustness the multiple regression analysis for acceptance was performed twice. Once with the untransformed values, and a second time with the log-transformed values. The output of the multiple regression analyses for the original and log transformed values are similar. Contrary to the pre-registration, the output corresponding to the original values was used, as this maintained a more straightforward interpretation.

All outliers were checked using Mahalanobis distance, with $\alpha = 001$ or lower will indicating an outlier in the data set (Tabachnick & Fidell, 2013). No significant outliers were discovered. Statistical analyses were performed with IBM SPSS Statistics version 26.

Missing data

Missing data was handled in two different ways; case-wise and pairwise deletion. For the EFA, casewise deletion was employed. participants were excluded from the EFA analysis if they had missing data on the items in the acceptance or support scales. Pairwise deletion was used for the regression analyses, participants were only removed from the variables(s) where missing data was present, but they were still included in the analyses of variables where they had no missing data. Pairwise deletion was not pre-registered but was employed because of the small sample size.

Results

Exploratory factor analysis

EFA was conducted using the maximum likelihood extraction method with an oblique rotation method (Direct Oblimin). Communalities ranged from .19 to .82 (table 1). Factor loadings (table 1) were derived from the pattern matrix. In contrast to the pre-registration, the p-values of the factor loadings were not calculated with the formula by Norman and Streiner (2014), as the sample size for the exploratory factor analysis was too small, in this way a distorted image of significance might be given. The RMSR value was .047, indicating a close model fit (Appendix E3). However, one residual correlation exceeded .10, with a value of .182. indicating potential model misfit (Watkins, 2021).

Loading patterns

The EFA results show that there were two factors on which the items were loading (table 1). The factors are positively correlated with each other (r = .33), and together the factors explain 61.54% of the variance. The results of the EFA do not support hypothesis 1. All the policy acceptance items load on the same factor (table 1). However, not all policy support behaviors load on the same factor, with some high-effort support behaviors loading on the same factor as the acceptance items. Based on the current EFA results, policy acceptance and support cannot be clearly separated. Hypothesis 1 is therefore fully rejected.

Factor 1

Factor 1 contained 6 items; items 1, 2, 3, 4, 8, and 10. These items measured acceptance (1-4) and two higher effort support behaviors (8 and 10) (table 1). Cross Loadings were observed for item 8. Factor 1 seems to mostly contain the items related to acceptance,

with no observed cross-loadings on factor 2. However, attending a demonstration or voting for a political party were also items that loaded on factor 1.

Factor 2

Factor 2 contained 5 items; items 5, 6, 7, 8, and 9 (table 1). These items all measured support behaviors. However, item 5 had a negative association with factor 2, meaning that looking up information is negatively associated with factor 2, while the other support items that load on the factor are positively associated with the factor. The only support items not loading on factor 2 were items 8 and 10 (voting for a party that wants to introduce the policy, and attending a demonstration in favor of the policy).

Table 1

Communalities and Factor Loadings for Exploratory Factor Analysis of the Acceptance and Support scales.

Item No.	Items	Factor 1	Factor 2	Communalities
1	Indicate to what extent you agree or disagree with the following terms describing the proposed scenario Acceptable.	.799	.089	.69
2	Indicate to what extent you agree or disagree with the following terms describing the proposed scenario Useful.	.828	196	.62
3	Indicate to what extent you agree or disagree with the following terms describing the proposed scenario Good.	.836	047	.68

4	Indicate to what extent you agree or disagree with the following terms describing the proposed scenario Necessary.	.851	010	.72
5	How likely is it that you would perform the following behaviors to support the introduction of the proposed scenario? - I would look up more information about these policies.	.101	680	.52
6	How likely is it that you would perform the following behaviors to support the introduction of the proposed scenario? - I would talk about this environmental policy with the people I know.	137	.931	.80
7	How likely is it that you would perform the following behaviors to support the introduction of the proposed scenario? - I would talk about this environmental policy with people who oppose these policies.	069	.884	.75
8	How likely is it that you would perform the following behaviors to support the introduction of the proposed scenario? - I would vote for a political party that wants to introduce these policies.	.705	.375	.82

9	How likely is it that you would perform the following behaviors to support the introduction of the proposed scenario? - I would contact a political representative to show my support for these policies.	.095	.396	.19
10	How likely is it that you would perform the following behaviors to support the introduction of the proposed scenario? - I would attend a demonstration in favor of these policies.	.468	.275	.38
	Eigenvalue	4.70	2.16	
	% of variance	43.31	18.23	

Predictors of policy acceptance and support

Two multiple regression analyses were performed to investigate if past behavior, costs, and personal norms predict policy acceptance and support respectively. The correlation matrix of the dependent and independent variables can be found in table 2. The results of the regression analyses are discussed below.

Table 2

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Means, Standard	Deviations,	and Correl	lations
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Variable	Mean	SD	1	2	3	4	5	6
1. Support	4.42	1.18	1					
2. Acceptance	5.66	1.19	.466**	1				
3. Past behavior	2.54	.92	.434**	.136	1			

4. Personal norms	4.67	1.32	.683**	.325**	.394**	1		
5. Costs	3.87	1.16	452**	568**	137	393**	1	
6. PBC	3.62	.99	.345**	.325*	.367**	.383**	194	1

Note. ** = significant at α = .001 / * = significant at α = .05. PBC was not included in further analyses due to a low Cronbach's alpha value.

Predictors of policy acceptance

A multiple regression analysis was performed to investigate the relationship between the independent variables (past behavior, personal norms, and costs) and the dependent variable (policy acceptance). Overall, the multiple regression model explained a significant amount of variance (R2 = .335, F(3,55) = 9.23, p < .001). The model showed no significant relationship between past behavior and acceptance (B = .025, p > .05), past policy support behaviors were not associated with higher policy acceptance if the other predictors were taken into account (hypothesis 2.1). The model showed no significant relationship between personal norms and acceptance (B = .101, p > .05) (table 3), personal norms did not predict higher levels of acceptance if the other predictors were taken into account (hypothesis 2.2). Furthermore, the model showed a significant negative relationship between costs and acceptance (B = ..533, p < .001) (table 3), higher perceived costs predicted lower levels of acceptance (Hypothesis 2.3).

For comparison, the Results of multiple regression with the log-transformed policy acceptance values can be found in Appendix G1.

Table 3

Multiple regression results for policy acceptance

Predictor	В	B (95% CI)	p-value	sr2	Fit
		LL - UL			
Constant	7.181**	[5.582, 8.851]	.000		
Past behavior	.026	[310, .301]	.866	.000	
Personal norm	.101	[116, .349]	.386	.009	
Costs	533**	[779,295]	.000	.229	
					R2 = .335**

Note. ** = significant at α = .001 / * = significant at α = .05.

LL and LU correspond to the lower and upper levels of the confidence interval. sr2 is the semi-part correlation coefficient squared. sr2 refers to the semi-partial correlation coefficient squared, which is the unique variance explained by the IV in the DV controlled for the variance explained by the other IVs.

Predictors of policy support

Another multiple regression model investigated the relationship between the independent variables (past behavior, personal norms, and costs) and the dependent variable (policy support). Overall, the model explained a significant amount of variance (R2 = .541, F(3,54) = 21.19, p < .001). The regression model did not show a significant relationship between past behavior and support (table 3), past policy support behaviors were not associated with higher levels of support (hypothesis 2.1) The regression model showed a significant positive relationship between personal norms and support (B = .466, p < .001) (table 4), higher personal norms were associated with higher levels of support (hypothesis 2.2). Furthermore, a negative relationship between costs and support was discovered (B = .227, p < .05) (table 4), higher costs predicted lower levels of support (hypothesis 2.3).

Table 4

Predictor	В	B (95% CI)	p-value	Sr2	Fit
		LL - UL			
Constant	2.469**	[1.051, 3.888]	.001		
Past behavior	.257	[002, .517]	.052	.034	
Personal norm	.466**	[.271, .661]	.000	.194	
Costs	227*	[439,021]	.032	.042	
					R2 = .541**

Multiple regression results for policy support

Note. ** = significant at α = .001 / * = significant at α = .05.

LL and LU correspond to the lower and upper levels of the confidence interval. sr2 is the semi-part correlation coefficient squared. sr2 refers to the semi-partial correlation coefficient squared, which is the unique variance explained by the IV in the DV controlled for the variance explained by the other IVs.

Difference in relationship between IVs and policy acceptance and support

Hypotheses 2.1 stated that past behavior would have a stronger relationship with policy support compared to acceptance The results from the correlation analysis (table 2) supported this hypothesis. Past behavior had a stronger correlation with support (r = .43, p < .001) than with acceptance (r = .14, p > .05). It is important to note however that these are descriptive differences, but that a formal (significance) test of differences between the associations was outside of the scope of the current thesis.

Discussion

The current study investigated the difference between policy acceptance and support. In addition, the study aimed to examine multiple factors related to policy acceptance and support respectively. The findings related to each hypothesis will be further discussed below.

EFA results

Hypothesis 1 stated that policy acceptance and support would be separate empirical constructs. Contrary to our hypothesis, the results of the exploratory factor analysis did not support a clear distinction between acceptance and support. The results showed that all the items related to acceptance loaded on the same factor, indicating that the attitude items all belonged to the same construct. However, the items related to policy support were not all loading on the same factor. With some of the support items being grouped with the attitude items. Based on the results from the EFA, three interesting findings are worth discussing here: the unclear empirical distinction of policy support and acceptance; the negative relationship between information seeking and factor 2 (support), and the grouping of voting behavior with the acceptance items on factor 1 (acceptance).

First, these results indicate that policy support measured as behavior might not be a singular construct. A study by McKeever et al. (2023) discovered 6 different factors in relation to (activist) support behaviors. Discussing the topic with friends or opponents, and looking up information were all part of the same factor named dialogic activism (McKeever et al., 2023). The current study also found that these support behaviors were grouped together on the same factor. However, in the study by McKeever et al. (2023) attending demonstrations, and contacting politicians fell into the categories of oppositional and collective activism respectively. In the current study, contacting a politician was part of the items related to

information seeking and discussion. While attending a demonstration was grouped with the attitude items. This is not in line with the results of McKeever et al. (2023), as the items should be loading on separate factors of their own. This could however be due to a small sample size used in the study, and the low number of items corresponding to the different categories (Mundfrom et al., 2005; White, 2022). A larger sample size and more items related to each category make it possible for the EFA to return with more extracted factors (Mundfrom et al., 2005; White, 2022). The current study had a small sample, which made it more difficult to extract a higher number of factors, therefore the items that would possibly be related to oppositional and collectivist activism did not load on separate factors. In addition, only a single item measured possible oppositional and collectivist activist behaviors, because of the low number of items related to these possible categories an even higher sample size was required to investigate if these behaviors would load onto their own factor (Mundfrom et al., 2005; White, 2022). Maybe attending a demonstration and contacting a representative could have potentially constituted separate factors if our sample size and number of items would have been higher. Future research could investigate the multidimensional nature of policy support by including a higher number of items per category, these categories could be based on different types of activism as investigated by McKeever et al. (2023), as policy support behaviors overlap with activist behaviors in the literature (Jew et al., 2020; Fielding et al., 2008; McKeever et al., 2023). In addition, future research could perform a CFA to assess if the items have a good fit when separated based on the attitude/behavior distinction. EFA extracts the items and optimizes them based on a single dataset, but it could be that CFA can still find a reasonable fit when the acceptance and support items are separated based on attitude and behavior. The results of the EFA do not completely exclude a possible two factor model according to this distinction.

Secondly, contrary to the other support items loading on factor 2, information seeking was negatively associated with the factor. Meaning that looking up information about the energy scenario was negatively associated with supporting it. This indicates that information seeking might not be a support behavior but can be a behavior that is engaged in by opponents of a policy. In addition, individuals who support the policy could believe they already have enough knowledge about the policy and therefore do not need to look up additional information. Beaudoin (2023) indeed found that information seeking was a precursor of behavioral intention. Therefore, people who support the policy do not have a reason to look up more information, while people who do not support the policy might still have other reasons to look up information about the policy. Previous research could investigate if information seeking behavior is oppositional in nature, and the reasons why opponents of a policy might engage in information seeking behavior.

Finally, voting behavior was the only support item that was completely grouped with the acceptance items on factor 1. This could be due to a number of reasons. First, previously mentioned methodological issues (small sample size, and low number of factors) could be why voting behavior was grouped with existing factors instead of falling into a separate support category that could not be extracted in this study. Secondly, voting behavior could be measuring policy acceptance instead of support. It could be that voting behavior is more directly in line with policy attitudes compared to the other policy support behaviors included in the study. Voting rates in western democracies are generally high (IDEA, 2023), and higher levels of education have also been shown to positively relate to voting behavior (Sondheimer & Green, 2010). The sample in the current study consisted of higher educated people in western democracies. Within this demographic, voting could be perceived as a behavior you generally perform, and might be mostly predicted by the favorable or unfavorable evaluation of a political party's policy ideas. While other support behaviors are seen as behaviors that are not generally performed and are based on more than just favorable or unfavorable attitudes. Future research could investigate if voting behavior mostly reflects attitude, and is not seen as a separate support behavior.

Antecedents of acceptance and support

Past behavior

Hypothesis 2.1 was not supported by the results, as we did not find any relationship between past behavior and acceptance. This is not in line with previous research, which showed that past behavior can affect attitudes regarding the behavioral object (Olson & Stone, 2005; Kroesen et al., 2017; Loughnan et al., 2010; Fujii & Kitamura 2003). An explanation for this could be that previously performed policy support behaviors do not predict acceptance of a general energy policy. Research has found that specific attitudes are better at predicting behavior than general attitudes (Davidson & Jaccard, 1979). We can assume that specific behaviors are also better at predicting specific attitudes. Past support behaviors may therefore be associated with the attitude toward performing these specific behaviors, but not with a more general attitude toward an energy scenario.

Despite a positive correlation between past behavior and support, past behavior was not a significant predictor of support when taking into account the contribution of other predictors. This finding is not completely in line with previous research, which shows that past behavior is often a good predictor of future behaviors in the same area (Fujii & Kitamura, 2003; Kroesen et al., 2017; Hagger et al., 2023). However, the effect of past behavior could be due to habits, or other underlying mechanisms that are captured by a past behavior questionnaire (Hagger et al., 2023; Ajzen, 2022). As mentioned before, policy support behaviors are mostly behaviors that would have a low chance of turning into habits, due to their complexity and infrequent performance (Hagger et al., 2023). It could be that the association between past behavior and policy support was due to an underlying mechanism that was subsequently captured by another variable in the model (e.g. personal norms). Investigating the underlying mechanism of past and future behavior could be an interesting objective for future research.

Personal norms

Hypothesis 2.2 was also not fully supported by the results. Personal norms did not predict participants' level of policy acceptance, it did however predict their levels of policy support.

Despite a positive correlation, personal norms did not predict policy acceptance when taking into account the contribution of the other predictors. This finding is not in line with previous research, as Keizer et al. (2019) did find a predictive effect of personal norms on the acceptance of push and pull measures to reduce car use. There could be multiple explanations for this. First, previous studies that showed an effect of personal norms measured them directly in relation to their outcome variable (De Groot et al., 2021; Keizer et al., 2019; Steg., 2005), e.g. personal norms to reduce car use and the acceptance of a policy to reduce car use. In the current study, the personal norms were assessed in relation to specific policy support behaviors, while the energy scenario was more general. Specific personal norms, related to environmental policy support behaviors, may not be a good predictor of the acceptance of general policies. However, general pro-environmental personal norms do seem to predict the acceptance of specific environmental policies (Poortvliet et al., 2018). Future research could look more into the effect of pro-environmental personal norms on policy acceptance. It could also be that individuals can accept a policy but nonetheless not have a strong sense of responsibility to support it. Therefore, people with low or high personal norms can both accept a policy, but only individuals with high personal norms will support it.

Personal norms related to support behaviors did significantly predict policy support. This is in line with previous research, showing that higher personal norms regarding policy support behaviors had a positive relationship with the intention to engage in subsequent policy support behaviors (Steg & de Groot, 2010).

Costs

The results from the multiple regression analyses supported hypothesis 2.4. Higher perceived costs were shown to be negatively related to policy acceptance and support. The results indicate that individuals who perceive an environmental policy as financial and behaviorally costly will be less inclined to accept the policy, and subsequently support it. These results are in accordance with existing research on policy acceptance. Financial costs have been shown to negatively affect the acceptance of environmental policies (Schuitema et al., 2010). In addition, higher behavioral costs have also been shown to negatively affect the acceptance of environmental policies (Byrka et al., 2016).

The results of this study also indicate that policies with high perceived costs are less likely to be supported through policy support behaviors. It would make sense that individuals who perceive the policy as too costly will not support its implementation. This could be due to the effect of attitude on behavioral intentions, as seen in the TPB. In the current study, costs were measured in relation to the environmental policy and did not consider the costliness of performing policy support behaviors. Therefore, the effect of costs was probably mediated by attitude. Individuals who had lower levels of policy acceptance because they perceived the policy as too costly, were subsequently less inclined to support the policy because they did not accept the policy in the first place. This hypothesis is in line with previous research on the attitude-behavior relationship when it comes to environmental behaviors (Klöckner, 2013).

Theoretical and practical implications

Theoretical implications

The results of this study have multiple theoretical implications.

First, multiple authors have stressed the importance of distinguishing between policy acceptance and support, in line with their underlying theoretical constructs of attitude and behavior (Batel et al., 2013; Dreyer et al., 2015; Kysela et al., 2019; Jansson & Rezvani, 2019). However, none of them have addressed that policy support might not be a singular construct on its own. The results from this study indicate that policy support might not belong to a single behavioral construct, and is multidimensional in nature. The same might be true for acceptance, as the results indicate that voting intention could measure acceptance as well. The results from this study show that to increase theoretical development, researchers should do more than simply investigate the difference between acceptance and support as attitudes and behaviors. But they can also investigate the possible multidimensional nature of policy support and acceptance, and what the differences between these dimensions are.

Secondly, specific Personal norms related to policy support were predictive of support behaviors. This supports previous research investigating the effect of personal norms on policy acceptance and support, which in turn provides evidence for the NAM (Schwartz, 1977) and the VBN (Stern, 1999).

Practical implications

First, when measuring policy support as behavior, researchers should not solely base their policy support items on the criterion that it should include a behavior or intention. Previous authors proposed that acceptance should be measured as an attitude why policy support entails just any kind of intention or behavior to help support the policy (Batel et al., 2013; Dreyer et al., 2015; Kysela et al., 2019; Jansson & Rezvani, 2019). For example, Dreyer et al. (2015) used a range of different behavioral intentions to measure support, which might not all be part of the same dimension of support behaviors. Researchers should pay close attention to the specific support behaviors they include in their scales, as not all policy support behaviors may fall into the same category. The same might be true for acceptance.

Secondly, the results show that policy acceptance and support are not the same thing, and people accepting a policy does not indicate that they will also support its implementation. Policy acceptance and support do also not have the exact same predictors, and relationships with antecedents vary in strength. Public opinion affects policy makers' decisions (Burstein, 2003; Sevenans, 2021; Hager & Hilbig, 2020), and this can hinder or aid policy implementation. The effect of public opinion on politicians' policy decisions is dependent on the politician's awareness of the public opinion itself (Sevenans, 2021; Burstein, 2003). Policy support behaviors could help make opinions and issues salient. Attending demonstrations, signing petitions, and contacting political representatives are all policy support behaviors that can make the public opinion more salient. To increase the salience of issues it might therefore be important to also increase policy support behaviors, next to just policy acceptance.

Finally, policies that elicit perceptions of high financial and or behavioral cost can negatively affect the acceptance and support of these policies. Policy makers could create policies that are low in financial or behavioral costs. However, lifestyle changes (often incurring behavioral costs) are a part of most mitigation pathways aimed at zero overshoot (IPCC, 2018; Scheepers, 2022). Lifestyle changes for the general population are almost unavoidable in climate mitigation. To address this, researchers could look more into the effect of framing, when creating and communicating mitigation policies (Svenningsen & Thorsen, 2021; Willis, 2018).

Limitations

First, the small convenience sample used in the study could have impacted the results. The smaller sample size in the study could have negatively affected the reliability of the EFA results (VanVoorhis & Morgan, 2007), and impaired the power of the regression analysis as well (VanVoorhis & Morgan, 2007). The study sample consisted mostly of first-year bachelor students, and this makes the result not generalizable to other demographic groups.

Secondly, the correlational nature of the study makes it impossible to draw any conclusions in terms of cause and effect. Future research could explore the predictive nature of these variables through experimental designs.

Finally, pre-testing the items before starting the data collection process would have given us an opportunity to correct the PBC scale, which had to be excluded from the analyses because of its low Cronbach's alpha value.

Conclusion

A clear empirical distinction between policy support and acceptance could not be found in this study. Researchers calling for a distinction between policy support and policy acceptance should clearly define what these concepts mean, and realize that policy support is not a unidimensional construct. In addition, high costs play a negative role in policy acceptance and support, while strong personal norms are important for performing policy support behaviors. Future research could expand the findings in this study by investigating the dimensions of support behaviors further. The relationship between costs and acceptance/support could be further investigated to find a solution for the negative effect of essential costs on climate policy acceptance and support.

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Appendix A

G*power Settings



Appendix B

Participant Demographics

	Demographics	Ν	%	
Gender	Male	38	55.9	
	Female	23	33.8	
	Non-binary	1	1.5	
	Missing	6	8.8	
Age	18-30	55	80.9	
	31-45	2	2.9	
	45-65	4	5.9	
	65+	1	1.5	
	Missing	6	8.8	
Education	High school	38	55.9	
	College	6	8.8	
	Bachelor	15	22.1	
	Master	3	4.4	
	Missing	6	8.8	

Appendix C

Full Questionnaire

Demographic questions.

- 1. What is your age? (open-ended)
- 2. What gender do you identify as? (Male, female, prefer not to say, other (fill in).
- 3. What is your home country? (open-ended)
- 4. What is the highest level of education you have completed? (primary school, high school, college degree, bachelor's degree, master's degree, PhD.

Policy support (behavioral intention).

	Extremely unlikely	unlikely	Somewhat unlikely	Neutral	Somewhat likely	Likely	Extremely likely
I would look up more information about these policies.	0	0	0	0	0	0	0
I would talk about this environmental policy with the people I know.	0	0	0	0	0	0	0
I would talk about this environmental policy with people who oppose these policies.	0	0	0	0	0	0	0
I would vote for a political party that wants to introduce these policies.	0	0	0	0	0	0	0
I would contact a political representative to show my support for these policies.	0	0	0	0	0	0	0
I would attend a demonstration in favor of these policies.	0	0	0	0	0	0	0

Policy acceptance (attitude).

Policy acceptance

Indicate to what extent you agree or disagree with the following terms describing the proposed scenario.

	Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree
Acceptable.	0	\circ	0	0	0	\circ	0
Useful.	0	0	0	0	0	0	0
Good.	0	0	0	0	0	\circ	0
Necessary.	0	0	0	0	0	0	0

PBC

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PBC

To what extent do you agree with the following statements?

	Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree
If I want to, I can influence the introduction of environmental policies.	0	0	0	0	0	0	0
It is up to me whether I am affected by the introduction of environmental policies.	0	0	0	0	0	0	0
I have control over the kind of environmental policies that will be introduced in my country.	0	0	0	0	0	0	0
I have enough knowledge to support effective environmental policy introduction.	0	0	0	0	0	0	0

Past behavior

Past behaviors

In the past 6 months, how often have you performed the following behaviors?

	Never	Sometimes	About half the time	Most of the time	Always
I voted in elections for parties or candidates that support the introduction of environmental policies.	0	0	0	0	0
I discussed current environmental policies with people I know.	0	0	0	0	0
I engaged in discussion with the opponents of environmental policies that I favor.	0	0	0	0	0
I supported an environmental organization or party by signing a petition.	0	0	0	0	0

Personal

norms.

Personal	norms

To what extent do you agree with the following statements?

	Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree
I feel morally obligated to help facilitate environmental policy introduction.	0	0	0	0	0	0	0
I would feel guilty if I did not help facilitate environmental policies in any way.	0	0	0	0	0	0	0
I would feel good if I help to facilitate the introduction of environmental policies.	0	0	0	0	0	0	0

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osts o what extent do you agree v	with the follo	wing statem	ients about tl	he propose	d scenario?		·8· ×
, ,	Strongly disagree	Disagree	Somewhat disagree	Neutral	Somewhat agree	Agree	Strongly agree
These policies are financially too costly for society to introduce.	0	0	0	0	0	0	0
These policies would make things too expensive for me personally.	0	0	0	0	0	0	0
The consequences caused by the introduction of these policies will take up too much of my time.	0	0	0	0	0	0	0
It will be too hard for society to adapt to the changes caused by these policies.	0	0	0	0	0	0	0

Costs (personal, collective, behavioral, and financial)

Appendix D

Hypothetical Scenario

"By 2050 the Netherlands should be completely climate neutral, in line with the European green deal. The Netherlands can be a frontrunner in the climate transition with its existing knowledge economy. The industry will reduce its energy use and shift processes to rely on sustainable energy sources. The agricultural sector will employ more organic farming techniques. Sea and international air travel will see CO2 reductions of 95 percent, and trains and other sustainable transportation methods will be adopted by the general population. in addition, the general population will change their consumption patterns, reduce consumption and buy sustainable products, adopt more plant-based diets, and also reduce their energy use. Fossil fuel use will reduce sharply and will be replaced by renewable energy sources; mostly wind, solar, green hydrogen, geothermal, and biomass in case of no alternatives".

- A carbon tax will be introduced that will make products that require a lot of CO2 to be manufactured more expensive. The more CO2 is required to make the product, the more expensive it will be. This tax will be applicable to all kinds of products (foods, clothing, toys, etc).
- Environmentally friendly food will be subsidized (e.g. vegetables, fruit, nuts) while more environmentally unfriendly foods will be taxed (e.g. beef, cheese, palm oil).
- Sustainable transportation like trains and buses will be subsidized.
- A flight tax will be introduced which will make flying more expensive, this tax will increase for every flight.
- Products shipped via unsustainable ways (ships or planes using fossil fuels) will not be allowed to be sold in the country.



Appendix E

Assumptions for the EFA



Scree Plot EFA



Table E2

Correlation Matrix of the Items used to Measure Acceptance and Support

Variable	1	2	3	4	5	6	7	8	9	10
1. Acceptable	1									
2. Useful	.620	1								
3. Good	.703	.696	1							
4. Necessary	.648	.669	.689	1						
5. I would look up more information about these policies.	.356	.084	.267	.237	1					
6. I would talk about this environmental policy with the people I know.	.206	.010	.108	.164	.656	1				
7. I would talk about this environmental policy with people who oppose these policies.	.249	.038	.161	.155	.528	.793	1			
8. I would vote for a political party that wants to introduce these policies.	.751	.539	.619	.722	.497	.430	.501	1		
9. I would contact a political representative to show my support for these policies.	.227	079	.213	.157	.406	.308	.330	.349	1	

10. I would	.407	.311	.437	.543	.420	.270	.339	.579	.466	1
attend a										
demonstration										
in favor of										
these policies.										
Note Question	wordi	ng for tl	00.000 0 0	tongo ita	ma(1)		fallow	. "India	ata ta wi	hat

Note. Question wording for the acceptance items (1-4) was as follows: "Indicate to what extent you agree or disagree with the following terms describing the proposed scenario". Question wording for the support items (4-10) was as follows: "How likely is it that you would perform the following behaviors to support the introduction of the proposed scenario?". All items were measured on 7 point Likert scales, with higher values indicating higher agreement.

Figure E3

Model Fit and Residual Correlations EFA.

Residuals												_		×
Edit Wind	dow						_			-				
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Begin						Clea	ar						?]

Appendix F

Assumptions Multiple Regression Analysis

Figure F1

Linearity Assumption, Multiple Regression Acceptance and Support



Matrix of scores on the IV and DV

Note. Matrix scatterplot showing the relationship between all independent and dependent variables. For the linearity assumption, independent variables should have a linear relationship with the dependent variable.

Figure F2



Homoscedasticity Assumption Multiple Regression Acceptance

Note. Standardized residuals are plotted against the standardized predicted values. The scatterplot indicates a violated homoscedasticity assumption for the DV acceptance

Figure F3

Homoscedasticity Assumption Multiple Regression Support



Note. Standardized residuals are plotted against the standardized predicted values.

Figure F4

Normality Assumption Multiple Regression Acceptance



Note. Normality assumption is violated for the DV acceptance.

Figure F5

Normality Assumption Multiple Regression DV Support



Note. Normality of the residuals for the DV Support.

Figure F6



Normality Assumption Multiple Regression Acceptance Log-transformed

Note. Plot depicting the normality assumption for policy acceptance when the scores were log-transformed. The data followed a near normal distribution after the log-transformation. Log transformed scores were not used in the regression analysis. See method section for further information.

Appendix G

Multiple Regression with Log Transformed Acceptance Scores

Table G1

Multiple regression result for DV policy acceptance with log transformation

Predictor	В	B (95% CI)	p-value	Sr2	Fit
		LL - UL			
Constant	.070	[212, .352]	.623		
Past behavior	014	[065, .038]	.594	.003	
Personal norm	020	[058, .019]	.316	.011	
Costs	.098**	[.058, .140]	.000	.254	
					R2 = .389**

Note. ** = significant at α = .001 / * = significant at α = .05.

LL and LU correspond to the lower and upper level of the confidence interval. sr2 is the semi-part correlation coefficient squared.