

**Exploring the Relationship between Government Decision Transparency and UU Students'  
Endorsement of Covid-19 Measures**

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**Abstract**

This study aimed to investigate the impact of two types of transparency, namely decision process and decision rationale transparency, on the endorsement of Covid-19 measures. A survey was conducted among Dutch students from Utrecht University, providing them with information about a hypothetical new Covid-19 variant and ten measures that had been implemented by the government to combat it. The survey then assessed their endorsement of these measures. The respondents were assigned to four groups, receiving decision process, decision rationale, both, or no transparency manipulations. A repeated measures ANOVA compared the groups on Covid measure endorsement, and looked into their response patterns across the ten measures. The results indicated that the transparency manipulations did not have a significant effect, either individually or in interaction with each other, on the Covid measure endorsement. However, an interesting finding emerged regarding one specific measure: the communication about (booster) vaccination for students and staff. Contrary to expectations, lower endorsement was observed in conditions where decision process transparency was provided, compared to conditions where it was not. This study underscores the need for further investigation to determine the existence of the transparency effect and its specific contextual factors. Lastly, suggestions for improvements in future research are made.

*Keywords: Covid-19; public health; decision transparency; policy endorsement; governance*

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### **Introduction**

Dutch citizens' trust in politicians and the Dutch Parliament has experienced a significant decline, reaching record-low levels in the last quarter of 2022 (CBS, 2023). This erosion of trust coincides with a gradual decrease in support for Covid-19 rules over time, except during the period of uncertainty surrounding the Omicron variant, according to research from RIVM Corona Behavioral Unit and GGD GHOR (Rijksinstituut voor Volksgezondheid en Milieu [RIVM], 2022). Compliance varied among rules, with some consistently followed (e.g., handshakes, masks on public transportation), while others fluctuated. It was influenced by rule support and perceived difficulty (RIVM, 2022).

The decline in political trust poses challenges for government measures and compliance with laws. Low political trust could negatively impact citizens' support for government measures and compliance with laws (Marien & Hooghe, 2011). Distrust among citizens can undermine the perceived legitimacy of government actions and decrease willingness to comply with legislation (Lindström, 2008). This is especially problematic for laws that are crucial for public health, as in the case of the Covid-19 pandemic. To address this trust gap, suggestions have been made to involve citizens in decision-making processes and provide transparent information about how these decisions are reached (Porumbescu & Grimmelikhuijsen, 2018; Van Dijk & Lefevere, 2022). By including citizens in decision-making and ensuring transparency, governments might bridge the gap between politicians and the public, fostering trust and increasing support for government measures.

Given this context, this study explores the impact of government transparency on students' endorsement of Covid-19 measures by testing the effect of two types of transparency: explaining why and how decisions were made in the decision-making process. Specifically, it investigates the impact of conveying different perspectives considered in the decision-making process (the 'why' of decisions) and the effect of conveying the involvement of minipublics (the 'how' of the process) on students' endorsement of Covid-19 measures. With the objective of providing insights that could inform policymakers in developing effective policies and improving communication strategies, particularly in the face of evolving Covid-19 situations in the Netherlands, this research aims to shed light on the relevance of government transparency in this context. Conducting this study with a student sample allows for a better understanding of the perceptions and attitudes within this specific demographic. Additionally, focusing on students from the same university helps minimize potential confounding factors associated with diverse educational backgrounds.

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The research question addressed in this study is: To what extent do the opinions of Dutch students at Utrecht University regarding Covid-19 measures get influenced by the level of transparency about the government's decision-making process? To explore this research question, the study is structured around three specific sub-questions:

1. To what extent does the transparency of different considerations in the government's decision-making process (decision rationale) affect the Covid measure endorsement of Dutch students at Utrecht University?
2. To what extent does the transparency of the involvement of minipublics in the government's decision-making process (decision process) affect the Covid measure endorsement of Dutch students at Utrecht University?
3. To what extent is there an interaction effect between types of transparency (decision rationale and decision process) on the Covid measure endorsement of Dutch students at Utrecht University?

### **Theoretical Framework**

#### ***Theory of Procedural Fairness***

In understanding the relationship between transparency and the endorsement of Covid-19 measures, the concept of procedural fairness offers valuable insights. The theory of procedural fairness, also referred to as procedural justice, suggests that when perceived fair procedures are employed, people are more likely to be satisfied with authorities and more inclined to accept their decisions, even if they are dissatisfied with the actual outcomes of those decisions (Napier & Tyler, 2008). According to this theory, people not only consider the outcome but also the fairness of the procedure when evaluating a decision. This perception of fairness can influence people's willingness to comply with the decisions (De Fine Licht, 2011).

Tyler (2006b) suggests that transparency is associated with values like rightfulness, trustworthiness, and the absence of corruption, supporting the notion that transparency in decision-making promotes the perception of procedural fairness. Many studies support the idea that this perception of fairness enhances public beliefs in legitimacy. The assertion that increasing transparency is necessary to ensure or improve public trust, legitimacy, and decision acceptance is a commonly expressed view by both policymakers and academics in various global contexts (Meijer et al., 2012; OECD, 2000).

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People's acceptance of political decisions may be positively influenced by their perception of procedural fairness (Tyler, 2006a). This effect can occur even if individuals do not actively utilize information provided through transparency measures; the mere belief that the information is available can improve people's positive perceptions of procedures and decisions (Grimes, 2005). Drawing from procedural fairness theory, one can argue that increased transparency promotes the perception of fair decision-making, leading to greater acceptance of decisions when the process is seen as transparent.

Procedural fairness theory has traditionally focused more on face-to-face interactions than on broader political decisions, and transparency has not been a central element in this framework (Grimes, 2005). However, by incorporating transparency into the procedural fairness framework, there is a potential to gain insights into how transparency influences the perceived legitimacy of outcomes. De Fine Licht (2014b) conducted a study to examine the relationship between perceived transparency of political decision-making, perceived procedural fairness, and decision acceptance, in line with procedural fairness theory. The findings supported the theory by demonstrating that people's perceptions of the fairness of the decision-making process strongly influence their willingness to accept even controversial decisions. The study suggests that enhancing public perceptions of transparency in political decision-making can be an effective strategy for decision-makers seeking to increase public acceptance. In light of the current study, offering students insight into the government's considerations taken during policy-making may enhance their understanding of the trade-offs and complexities associated with managing the pandemic. This increased understanding could increase their trust in the decision-making process and lead to more positive evaluations of the Covid-19 measures.

### *Definitions*

**Decision Transparency.** Most definitions of transparency focus on the availability of information related to decision-making processes, budgets, operations, or performance of governmental bodies (Cucciniello et al., 2017). The present study specifically focuses on the transparency of regulatory agencies regarding their own decisions, referred to as 'decision transparency' henceforth. Decision transparency can be further categorized into the disclosure of information about the reasons (why) and methods (how) behind an agency's decision-making, referred to as 'decision rationale' and 'decision process', respectively. This categorization, introduced by De Fine Licht (2014a), is based on Mansbridge's (2009) previous work.

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**Decision Rationale.** Decision rationale refers to the provision of information regarding the substance of a decision, including underlying facts and reasons. This type of information is usually targeted at individuals who were not directly involved in the decision-making process (De Fine Licht, 2014a). In this study, the focus lies on the transparency of the decision-making process that was used to formulate the Covid-19 measures. This involves providing clear reasons to the public for why the government made a particular decision, and the factual basis on which these reasons were grounded. Specifically, this study investigates how the disclosure or withholding of information regarding whether the decision-making process considered factors such as mental well-being, in addition to virus prevention, affects students' endorsement of Covid-19 measures.

**Decision Process.** Process transparency refers to the clear and logical flow of activities that take place during the decision-making process. These activities include discussions, negotiations, and procedures (De Fine Licht, 2014a). In this study, decision process transparency is applied to the assessment of minipublics in order to form the decision regarding the package of measures. Deliberative minipublics involve gathering a small group of randomly selected citizens to engage in discussions on political matters and provide advisory input (Pow et al., 2020). Participants in minipublics can be seen as 'citizen representatives' for the larger population (Warren, 2008), and are often selected randomly from a stratified sample to ensure that they reflect the population well (Farrell et al., 2019). Research indicates that the use of minipublics can benefit the public's opinions about the decision-making process and its outcomes (Van Dijk & Lefevere, 2022). Citizens often perceive the representatives as more relatable than politicians, leading to increased support for deliberative minipublics (ECPR, 2021). Instead of directly forming a minipublic and collecting data, this study examines the effect of conveying information about the use of a minipublic in the decision-making process.

**Covid Measure Endorsement.** Endorsement, as defined by the Cambridge Dictionary, refers to expressing approval or support for something or someone (Cambridge University Press, n.d.). It is an expression of favourable opinion or support towards a particular entity, idea, or action. In the context of Covid-19 measures, endorsement signifies the public expression of approval and support for these measures. This report investigates the potential impact of various factors on the public's endorsement of Covid-19 measures, including feasibility, effectiveness, justification, and support. If these measures are perceived as feasible, effective, justified, and gain a high level of support, they are more likely to receive endorsement from individuals or groups. Feasibility assesses the practicality of

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implementing the measures, effectiveness assesses their ability to achieve intended goals, justification considers fairness and potential rights infringements, and support measures the level of public acceptance and cooperation.

### *Related Relationships*

No research has specifically examined the relationship between transparency and Covid measure endorsement, but studies in related contexts offer valuable insights. For example, Porumbescu and Grimmelikhuijsen (2018) discovered that providing information about the decision-making process increased trust in local government. Juhl and Hilpert (2019) conducted research that revealed the impact of transparency on citizens' approval of agreements, regardless of the outcome. Their findings indicated that a lack of transparency in decision-making resulted in an almost 16% decrease in public approval compared to transparent negotiations with identical outcomes. Van Dijk and Lefevere (2022) demonstrated that citizen awareness of the involvement of a municipality in decision-making led to higher trust in the government and increased compliance with resulting policies. However, in a vignette experiment conducted by De Fine Licht (2014a) in a school setting, it was found that rationale transparency increased decision acceptance, while process transparency did not.

Research exploring the effects of transparency on public perceptions has primarily focused on procedural fairness, acceptance of outcomes, institutional trust, or legitimacy (Bauhr & Grimes, 2014; Bernauer & Gampfer, 2013; De Fine Licht, 2014b; Grimmelikhuijsen & Meijer, 2015; Horvath & Katuscakova, 2016). However, few studies have explored the broader impacts of transparency on policy outcomes beyond acceptance. Grimmelikhuijsen et al. (2019) examined the effect of decision rationale and process on citizen trust in various domains (finance, education, and healthcare). Mixed results were found, with varying effects across the different domains. In the healthcare domain specifically, decision rationale did not have an effect on trust, while decision process did have an effect on trust. These mixed findings highlight the need for further investigation into the underlying mechanisms and contextual factors influencing the impact of transparency on perceptions of public decision-making.

Bogliacino and colleagues (2021) examined the effects of different communication strategies in pandemic conditions, similar to how transparency is used in this study, to determine their impact on perceived legitimacy of government decision-making. The study explored three strategies: expert endorsement, citizen deliberation, and citizen negotiation. Although they are not strictly categorized or measured in the same way, citizen deliberation aligns more closely with decision process transparency, while citizen negotiation aligns more

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closely with decision rationale transparency. Citizen deliberation involves transparency in the decision-making process, emphasizing citizen participation and engagement. On the other hand, citizen negotiation focuses on the transparency of the underlying reasoning and considerations in decision-making. The researchers found that citizen deliberation is not favored in high uncertainty situations, while negotiation is either neutral or not preferred when there is value conflict and conflicting interests.

Quinn et al. (2013) conducted research during the 2009 H1N1 pandemic, examining the relationship between communication, trust in government, and vaccination intention. Their survey study found that communication quality and role models influenced trust in government actions, but the directionality of the relationship needed further research. The study emphasizes the ongoing importance of prioritizing effective communication during a pandemic, highlighting the need for the government to effectively communicate and promote adherence. Transparency is crucial in the context of Covid-19, given the unprecedented challenges and societal impact of the pandemic. Government interventions require public compliance to protect public health (Rijksoverheid, 2021), and increased endorsement of these measures plays a significant role in achieving this objective.

### **Hypotheses**

Three hypotheses have been proposed, with the first two derived from the existing literature discussed above, while the third hypothesis takes a more exploratory approach.

H1: Decision rationale transparency leads to higher levels of Covid measure endorsement among Dutch students at Utrecht University.

H2: Decision process transparency leads to higher levels of Covid measure endorsement among Dutch students at Utrecht University.

H3: There is an interaction effect between decision rationale and decision process transparency that positively impacts Covid measure endorsement among Dutch students at Utrecht University.



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**Methods****Participants**

A total of 273 respondents participated in the survey. After excluding non-Dutch students ( $n = 5$ ) and incomplete responses ( $n = 82$ ), the final group consisted of 186 Dutch students at Utrecht University. Among the respondents, 32.3% (60) were male, 66.7% (124) were female, and 1.1% (2) identified as another gender. The participants' age and the year they started their current study are summarized in Table 1. Graph 1 shows the distribution of respondents across different faculties. The larger proportion of Social Sciences students is likely due to psychology students using Sona, a website that offers research study opportunities and credits towards their degree requirements. Additionally, advertising on the faculties of Social Sciences and Science may have contributed to this disparity, along with potential differences in faculty sizes.

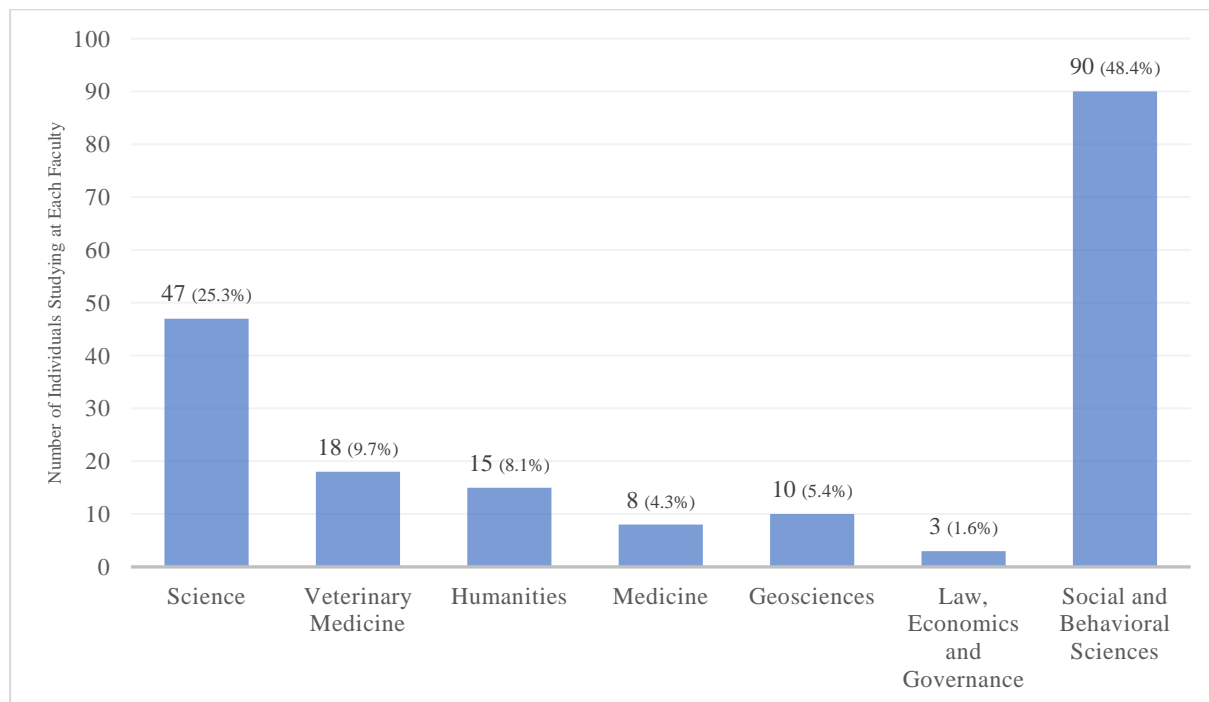
**Table 1**

*Summary Statistics of Participants' Age and First Year of Study*

	<b>Mean (SD)</b>	<b>Range</b>	<b>Median</b>
<b>Age</b>	21.57 (2.43)	17-40	21
<b>First year</b>	2020.65 (1.37)	2016-2023	2021

*Note.* Seven missing values for 'first year' due to incomplete responses.

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**Graph 1***Distribution of Faculties*

*Note.* Percentages may not total 100% as some respondents study at multiple faculties simultaneously.

**Design**

This study employed a primary research approach using an online survey on Qualtrics to investigate how different levels of transparency impact the Covid measure endorsement of Dutch Utrecht University students. The study focused on two independent variables: exposure to decision rationale and decision process transparency. The dependent variable was the participants' endorsement of ten Covid-19 measures. This experimental design employed four different conditions, each presenting varying levels of information about the decision-making process. Participants were randomly assigned to one of the four conditions, representing different levels of information about the decision-making process. The hypotheses were tested using a between-subjects design, where the outcome variable (Covid measure endorsement) was compared across the different transparency conditions. Additionally, a within-subjects design was utilized to examine participants' responses to the ten measures, enabling a comprehensive investigation of differences in endorsement patterns across the measures.

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### **Materials**

The survey questionnaire was adapted from a previous questionnaire designed by Gootjes (2022, unpublished), and customized to better suit the target group and research questions.

### ***Independent Variables***

The study examined two independent variables, 'decision process' and 'decision rationale', each with two levels (presence or absence). All participants were presented with a scenario: "Imagine the following scenario: a new variant of the Covid-19 virus has emerged, called 'XAR'. There are indications that the virus is more resistant to vaccination, making it more contagious and causing a more severe course of illness than Omicron earlier this year, but this has not yet been confirmed." Further information provided to participants differed based on the condition to which they were assigned.

**Decision Rationale.** In this condition, participants were informed that the government considered both the risks of being on campus for vulnerable staff members and students, as well as the importance of social contact for education quality and mental health. The information was presented as follows: "On campuses, many people come together, increasing the risk of virus transmission. The Dutch government has chosen a package of measures that will apply to all Dutch campuses to combat the spread of the virus. It has been considered that on the one hand, the risk of being on campus should not be too great for employees and students with vulnerable health, and on the other hand, the importance of social contact for students and employees is very high for both the quality of education and (mental) health."

**Decision Process.** In this condition, participants were informed that a diverse group of randomly selected students from various faculties had been assembled to contribute to the decision-making process. The information was presented as follows: "On campuses, many people come together, increasing the risk of virus transmission. A new working group has been formed, consisting of random students from all faculties and diverse backgrounds, to come to a decision on measures. After consulting with these students, the Dutch government has chosen a package of measures that will apply to all Dutch campuses to combat the spread of the virus."

**Decision Rationale and Decision Process.** In this condition, participants received both pieces of information. The information was presented as follows: "On campuses, many people come together, increasing the risk of virus transmission. A new working group has been formed, consisting of random students from all faculties and diverse backgrounds, to come to a decision on measures. After consulting with these students, the Dutch government

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has chosen a package of measures that will apply to all Dutch campuses to combat the spread of the virus. It has been considered that on the one hand, the risk of being on campus should not be too great for employees and students with vulnerable health, and on the other hand, the importance of social contact for students and employees is very high for both the quality of education and (mental) health.”

**No Extra Information.** In this condition, participants were not provided with any additional information regarding the decision process and decision rationale. The text was presented as follows: “On campuses, many people come together, increasing the risk of virus transmission. The Dutch government has chosen a package of measures that will apply to all Dutch campuses to combat the spread of the virus.”

### *Dependent Variable*

Participants were asked to express their opinions on both the overall package of Covid-19 measures and individual measures.

**Package Endorsement.** The participants were presented with a set of ten Covid-19 measures (see Table 2) and were asked to rate their opinions about the package using a 7-point Likert scale, ranging from 1 (not at all) to 7 (very much). The following questions were asked: “How acceptable do you find this package of measures?”; “How effective do you find this package of measures?”; “How feasible do you think it is for you and others to comply with this package of measures?”, and “To what extent would you support this package of measures?”

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**Table 2***The Package of Covid-19 Measures*

<b>Measure</b>	
<b>1</b>	Communication about (booster) vaccination for students and staff
<b>2</b>	Staying at home when experiencing symptoms
<b>3</b>	Self-testing when experiencing symptoms
<b>4</b>	Performing preventive self-testing twice a week
<b>5</b>	Adhering to the safe distancing norm as much as possible
<b>6</b>	Using face masks when moving around
<b>7</b>	Attending large lectures online instead of in physical lecture halls
<b>8</b>	Scaling down activities that are not directly related to education and research
<b>9</b>	Spreading out educational activities throughout the day to facilitate social distancing and limit contact
<b>10</b>	Limiting the opening hours of educational facilities (such as the university library)

**Individual Measure Endorsement.** Participants were presented with each measure individually (see Table 2) and asked to rate four questions on a 7-point Likert scale (1 = not at all; 7 = very much): “How feasible do you consider this measure?”; “How effective do you find this measure?”; “To what degree do you deem this measure justified?”, and “To what extent would you support this measure?” Cronbach’s alpha values for the separate Covid-19 measures ranged from .86 to .92.

**Extra / Control Variables.**

**Government Opinions.** Participants were asked to give their opinions about the government's decision-making process using a 7-point Likert scale (1 = completely disagree; 7 = completely agree). Examples include: “When determining the package, I think that the government”: “uses all necessary information”; “takes into account different opinions of people”; “does its best to do the right thing”, and “is willing to correct wrong decisions.”

**Scenario Evaluation and Goal.** Participants were asked to rate their perception of scenario severity and the difficulty they faced in envisioning themselves in the scenario using a 7-point Likert scale. Additionally, they were asked to share their understanding of the study’s objective in an optional open-ended question, with a gentle reminder to provide a response.

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**Demographics.** Demographic information was collected as covariates to account for potential confounding variables that could have influenced the relationship between the independent and dependent variables. Participants were requested to provide their age, indicate their gender, report the year they began their current program of study, and specify the faculty they were enrolled in. These covariates were selected based on their potential influence on attitudes towards Covid-19 measures and their association with the independent variable of interest. By accounting for these variables, the study aimed to enhance the accuracy of assessing the relationship between the dependent and independent variables.

### **Procedure**

#### ***Experimental Procedure***

The experimental procedure began with obtaining informed consent from the participants, following ethical standards and incentives (see 'Ethical Standards and Incentives'). Next, participants were presented with a scenario that involved the manipulation of independent variables, namely 'decision rationale' and 'decision process'. This manipulation created four different conditions, each varying in the level of transparent information about the decision-making process. Participants were randomly assigned to the conditions by Qualtrics, and respondents were unaware of the different groups. Following the manipulation, participants were asked to answer a series of questions. See the 'Materials' section for a more detailed description of the survey content.

#### ***Recruitment Strategy***

The survey was distributed using a link and QR-code provided by Qualtrics. Initially, the researcher used a direct contact approach to share the survey with Dutch students at Utrecht University, including friends and acquaintances, through personal interactions and WhatsApp groups. However, this method resulted in a negligible response rate. Consequently, a more extensive recruitment strategy was implemented. Strangers on the UU campus were approached and provided with a concise flyer containing the study information and the hyperlink / QR-code to the survey (Appendix B). This approach resulted in a substantial increase in participant responses, with some participants offering to share the survey link with other students. To further increase participation, posters containing similar information were displayed in various campus buildings (Appendix C). The study was also made available on Sona, a website where psychology students can find research studies to participate in and earn credits. Psychology students were invited to participate in exchange for 0.5 PPU. Additionally, the survey and a request for participation were shared on Facebook in the

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groups 'Studenten Utrecht' and 'Respondenten gezocht!' as well as on Reddit in the 'Utrecht University' group.

### *Power Calculation*

An a priori power analysis was conducted (using G\*Power version 3.1.9.7) to determine the minimum sample size that was required to test the study hypothesis. Results of the analysis showed that the total sample size that is required to achieve 80% power for detecting a medium effect (effect size of .25), at a significance criterion of  $\alpha = .05$ , was  $N = 133$  for the MANOVA repeated measures: within-between interaction, for 4 groups (2 between subjects factors with two levels each) and ten measurements. Thus the total sample size should be at least 133 (Faul et al., 2007).

### *Ethical Standards and Incentives*

The survey was conducted in accordance with ethical standards, as indicated by the FERB approval form in Appendix A. Participants were given information about the research topic and assured that their responses would remain anonymous, ensuring their comfort in participating. Participation was voluntary. Upon accessing the survey through the link or QR code, participants encountered an informed consent page, which they had to agree to before proceeding. They were also asked to confirm their status as Dutch students at UU. If these conditions were not met, the survey ended with an explanation. Participants who met the conditions were able to continue with the survey. Following completion, participants were debriefed with an explanation of the study's aim. The collected data is completely anonymous, and participants cannot be identified. Participants had the opportunity to contact the researcher for any questions, comments, or further information, as the researcher's email address was provided. The only incentive provided was 0.5 PPU for psychology students through the Sona portal.

### **Analysis**

The dataset was uploaded to SPSS, and student numbers were removed to ensure anonymity. None of the respondents (who answered the question) were aware of the manipulation of transparency, as revealed by an open-ended question about the survey's purpose. Incomplete cases were excluded, and invalid answers were recoded as missing. The analysis was conducted using only fully completed surveys from participants in the target group (186) (see 'Participants'). The distribution of the four different conditions was as follows: decision rationale (49), decision process (48), both (42), or none (47). Two dichotomous variables were created to measure exposure to decision rationale and decision

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process. Two dichotomous variables were created to measure exposure to decision rationale and decision process.

The dependent variable in this study is the endorsement of the different Covid-19 measures, assessed through participants' ratings on feasibility, effectiveness, justification, and support. The means and standard deviations of these questions are presented in Table 3. To explore the possibility of combining these aspects into a single variable for further analysis, a factor analysis was conducted. The suitability of the data for factor analysis was confirmed by the Kaiser-Meyer-Olkin Measure of Sampling Adequacy ( $KMO = .69$ ) and Bartlett's Test of Sphericity ( $p < .001$ ). The factor analysis yielded one factor with an eigenvalue of 2.42, explaining 60.5% of the total variance. The factor's component matrix displayed relatively high correlations (0.56 to 0.91). Internal consistency was assessed using Cronbach's alpha, which confirmed the items' reliability, see Table 4. Consequently, new variables were created by computing the mean scores for each measure based on the responses to the four corresponding questions.

Assumptions for the main analysis were checked (see 'Data Preparation'). Additionally, a randomization check and comprehension check were performed to assess the independence of demographic information from the distribution of conditions, and participants' accurate perception and understanding of the scenario, respectively (see 'Randomisation and Comprehension Check'). The main analysis utilized the newly calculated mean variables. A repeated measures ANOVA was conducted to test the specified hypotheses (between effects) and explore answer patterns for the different measures (within effects). Detailed outcomes of this analysis are presented in the results section under 'Main Analysis' and 'Exploratory Analyses'. To examine whether the manipulation of decision rationale and decision process had significant effects on individuals' opinions about the government, two t-tests were conducted. The first t-test compared the government opinions of participants who received the decision rationale manipulation with those who did not, while the second t-test compared the government opinions of participants who received the decision process manipulation with those who did not. These analyses allowed for the assessment of significant differences in government opinions based on the presence or absence of each manipulation (see 'Secondary Outcome Variable').



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**Table 3***Means (SD) of the Four Covid Measure Endorsement Questions*

Measure	1 Vaccination communication	2 Symptom stay-at- home	3 Symptom self-testing	4 Preventive self-testing	5 Safe distancing	6 Mask usage	7 Large lectures online	8 Scaling down activities	9 Spaced education activities	10 Limited facility hours
<b>Feasible</b>	5.82 (1.41)	5.16 (1.47)	5.52 (1.44)	3.15 (1.63)	3.47 (1.67)	4.66 (1.83)	5.77 (1.43)	5.07 (1.63)	4.35 (1.54)	4.97 (1.75)
<b>Effective</b>	4.80 (1.51)	5.88 (1.18)	5.79 (1.23)	4.30 (1.71)	4.35 (1.64)	4.05 (1.79)	5.60 (1.39)	4.39 (1.64)	4.66 (1.53)	3.27 (1.70)
<b>Justified</b>	5.37 (1.56)	5.76 (1.33)	5.99 (1.27)	4.16 (1.74)	4.50 (1.63)	4.41 (1.75)	4.97 (1.64)	3.81 (1.63)	4.83 (1.55)	3.37 (1.71)
<b>Support</b>	5.44 (1.65)	5.59 (1.45)	5.90 (1.46)	3.75 (1.79)	4.22 (1.79)	4.19 (1.95)	4.69 (1.98)	3.52 (1.77)	4.54 (1.73)	3.29 (1.86)

**Table 4***Cronbach's Alpha for Package and Individual Covid Measure Endorsement*

Measure	Total	1 Vaccination communication	2 Symptom stay-at- home	3 Symptom self-testing	4 Preventive self-testing	5 Safe distancing	6 Mask usage	7 Large lectures online	8 Scaling down activities	9 Spaced education activities	10 Limited facility hours
<b><math>\alpha</math></b>	.78	.86	.87	.89	.89	.90	.92	.88	.86	.90	.86

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### Results

#### Data Preparation

To ensure validity, assumptions were checked for the analysis on the package variable. Linear regression was used to evaluate outliers, with a maximum critical Mahalanobis distance of 13.83. The calculated maximum distance was 2.20, indicating the absence of outliers. The histogram of the package displayed a somewhat normal appearance but was right-skewed, indicating an abundance of observations on the right side. The Shapiro-Wilk test revealed a significant deviation from normality ( $p = .003$ ). Homogeneity of variances was assessed using Levene's test, which was not significant ( $p = .847$  based on mean), suggesting no significant variance differences among groups. A t-test revealed no statistically significant difference in the mean scores of the 'decision process' variable between the groups categorized by the variable 'decision rationale' ( $t(184) = 0.59, p = 0.553$ ). To evaluate the sphericity of the dependent variables, Mauchly's Test of Sphericity was conducted, revealing a violation of sphericity ( $\chi^2(44) = 142.65, p < .001$ ). Therefore, corrections for degrees of freedom were applied using the Greenhouse-Geisser method ( $\epsilon = .84$ ).

#### Randomisation and Comprehension Check

The randomisation check indicated no significant differences between conditions for demographic variables or study faculty, with all p-values  $> .456$ . The results of the comprehension check showed that, on average, respondents found it relatively easy to imagine the scenario ( $M = 5.45$  on a 1-7 scale). There was a notable level of concern expressed ( $M = 5.01$ ) regarding the potential risk to public health posed by the scenario, and respondents perceived a substantial necessity ( $M = 5.17$ ) for government measures to be implemented in response.

#### Main Analysis

The study aimed to investigate the effects of decision process and decision rationale on the dependent variable. The results of the between-subjects effects provide insights into the significance of these main effects and their interactions. However, neither decision process nor decision rationale showed a statistically significant effect on Covid measure endorsement, based on the results of the between-subjects effects. This suggests that there were no significant differences between the groups based on these independent variables. Additionally, the interaction effect between decision process and decision rationale was not significant, suggesting that the effects of decision process on the dependent variable were not influenced significantly by the value of decision rationale, and vice versa. Furthermore, the included covariates in the analysis did not show any significant effects. This suggests that the factors

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within the study's scope did not substantially impact the dependent variable. Overall, it can be concluded that there were no significant differences observed between conditions in relation to the dependent variable. Therefore, the data provided no support for the three proposed hypotheses.

### **Exploratory Analyses**

In the exploratory analyses, the within-effects and interactions among the variables on students' endorsement of Covid-19 measures were examined. Table 5 presents the means for each measure per condition, providing an overview of the observed differences. To further explore the within-subjects effects, Table 6 is presented, incorporating corrections based on the Greenhouse-Geisser method. It is important to note that these analyses were exploratory in nature, aimed at understanding the patterns and relationships within the data, without specific hypotheses being tested. The summarized results in Table 6 reveal some significant findings. Firstly, the measures as a whole have a significant overall effect on students' endorsement of Covid-19 measures ( $p = .012$ ), indicating their substantial impact on the observed results. This suggests that the combined set of measures significantly influences students' responses or attitudes towards the endorsed measures.

Furthermore, specific interaction effects were identified, including a significant interaction effect between the measures and decision process ( $p = .009$ ). This indicates that the group exposed to the decision process intervention exhibited a different response pattern across the ten measures compared to the other groups. Graph 2 illustrated that the patterns for decision process and no decision process are nearly identical. However, a significant difference was found for the first measure in pairwise comparisons between the 'no decision process' group ( $M = 5.58$ ) and the 'decision process' group ( $M = 5.10$ ),  $p = .013$ . This suggests that respondents who were aware of the consultation of a minipublic had lower endorsement for the measure 'Communication about (booster) vaccination for students and staff' compared to respondents who did not receive this manipulation. No significant differences were found between the 'no decision process' and 'decision process' groups for the remaining measures (2 to 10).

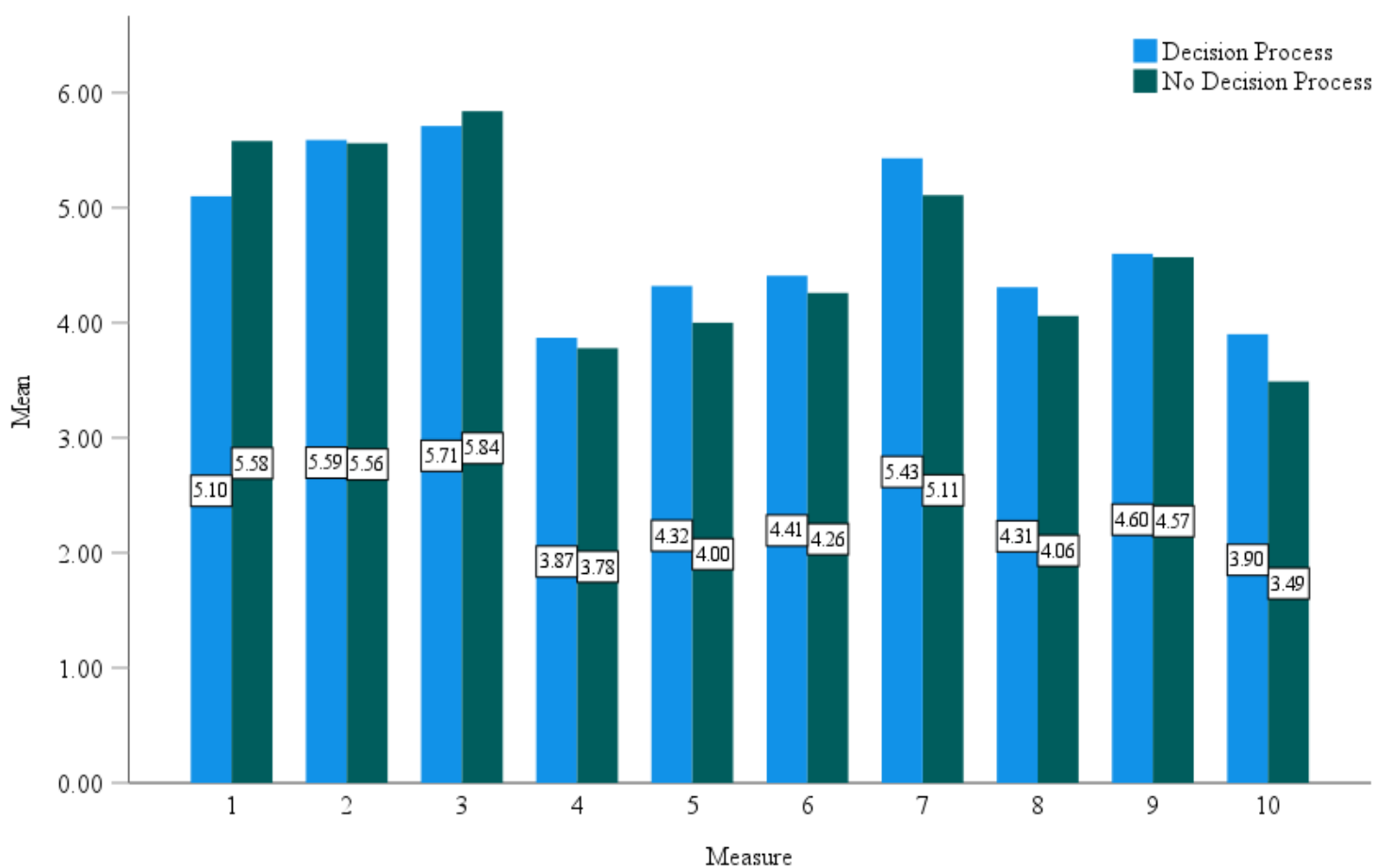
There was another significant interaction effect observed between the measures and age ( $p = .049$ ), indicating that the combined effect of these variables significantly influences the outcome. This implies that the interaction between the measured variables and age plays a role in shaping the students' response to the endorsed measures. However, when the other covariates and independent variables are not included in the model, the interaction effect between different measures and age is not statistically significant ( $p = .088$ ). These results

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suggest that the significance of the interaction effect may be influenced by the presence of other covariates and independent variables. No significant differences were observed in the remaining interactions, indicating that the levels of those factors did not significantly affect the response to the measures. See Table 6 for more details.

### Graph 2

*Means of the Ten Measures for No Decision Process vs. Decision Process*



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**Table 5***Means (SD) for Every Condition on the Ten Measures*

Condition		Measure									
Decision Process	Decision Rationale	1 Vaccination communication	2 Symptom stay-at-home	3 Symptom self-testing	4 Preventive self-testing	5 Safe distancing	6 Mask usage	7 Large lectures online	8 Scaling down activities	9 Spaced education activities	10 Limited facility hours
No	No	5.60 (1.21)	5.60 (1.25)	5.85 (1.14)	3.72 (1.66)	4.03 (1.69)	4.09 (1.72)	5.04 (1.37)	3.92 (1.38)	4.71 (1.38)	3.30 (1.45)
No	Yes	5.50 (1.24)	5.49 (1.08)	5.83 (1.28)	3.82 (1.51)	3.97 (1.37)	4.37 (1.62)	5.22 (1.38)	4.16 (1.21)	4.44 (1.52)	3.66 (1.43)
Yes	No	5.03 (1.47)	5.65 (1.07)	5.65 (1.23)	3.86 (1.45)	4.37 (1.51)	4.25 (1.73)	5.22 (1.55)	4.38 (1.49)	4.59 (1.34)	3.76 (1.44)
Yes	Yes	5.23 (1.17)	5.55 (1.29)	5.78 (1.09)	3.89 (1.32)	4.27 (1.34)	4.64 (1.58)	5.58 (1.25)	4.29 (1.52)	4.61 (1.38)	4.05 (1.44)

**Table 6***Tests of Within-Subjects Effects*

Variable	Sum of Squares	Mean square	F (df=7.55)	P-value
Measures	25.79	3.42	2.51	.012
Measures*Faculty	19.21	2.55	1.87	.065
Measures*Age	20.34	2.70	1.98	.049
Measures*Gender	18.51	2.45	1.80	.077
Measures*First year	5.56	.74	.54	.816
Measures*Decision Process	26.78	3.55	2.61	.009
Measures*Decision Rationale	12.06	1.60	1.17	.313
Measures*Decision Process*Decision Rationale	4.57	.61	.45	.886

*Note.* Corrected based on the Greenhouse-Geisser method.

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### **Secondary Outcome Variable**

Additionally, an investigation was conducted to assess whether increased transparency correlates with more positive government opinions. Respondents were asked to express their opinions regarding the government's effective utilization of relevant information, consideration of various interests, employment of evidence-based decision-making processes, and effective management when formulating policy packages. Table 7 provides a detailed overview of the specific questions posed to evaluate these factors. It was anticipated that by manipulating the decision rationale and decision process transparency, more positive opinions would be observed. Average scores were calculated for each topic and compared to examine differences between decision rationale and decision process manipulations. Table 8 presents the average scores of responses to the different questions and the performance of the government, grouped by the applied manipulations. No significant differences were found between the groups with and without decision process for all measurements of trust in the government ( $p > .161$ ) or decision rationale ( $p > .401$ ). These findings suggest that the expected results were not obtained or that the measurement instrument may not be fitted to detect these differences.

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**Table 7***Government Opinions by Topic and its Components*

<b>“When determining the package, I believe that the government...”</b>			
<b>Information</b>	<b>Interests</b>	<b>Process</b>	<b>Management</b>
is well-informed	involves important individuals and organizations	does its best to do what is right	explains well why the measures are necessary
has all the relevant information at its disposal	makes a careful balance between different societal interests	makes decisions based on facts	steers a clear course
utilizes all the necessary information	considers various opinions of people	provides sufficient explanations for the decisions	is willing to correct wrong decisions
	fairly distributes the burdens of the Covid-19 crisis among students, staff, and other groups within the university		

**Table 8***Mean (Std Error) of Government Opinions Across Manipulations*

<b>Topic</b>	<b>No Decision Process</b>	<b>Decision Process</b>	<b>No Decision Rationale</b>	<b>Decision Rationale</b>
<b>Information</b>	4.78 (.12)	4.65 (.13)	4.68 (.13)	4.76 (.12)
<b>Interests</b>	4.26 (.11)	4.02 (.13)	4.07 (.13)	4.22 (.12)
<b>Process</b>	4.83 (.11)	4.77 (.12)	4.83 (.12)	4.77 (.11)
<b>Management</b>	4.10 (.13)	3.92 (.12)	3.95 (.13)	4.07 (.12)

## Discussion

### Summary of Aims and Findings

This study aimed to investigate the impact of decision process and decision rationale transparency on Covid measure endorsement. The research question examined the extent to which the level of transparency about the government's decision-making process influenced the opinions of Dutch students regarding these measures. This investigation was motivated by the understanding that low levels of political trust can significantly hinder the acceptance and effectiveness of implemented laws or measures, which is particularly crucial in critical areas such as public health during the Covid-19 pandemic (Marien & Hooghe, 2011; Van Dijk & Lefevere, 2022).

This study examined the impact of decision rationale, decision process, and their interaction on the outcome. Three hypotheses were formulated to investigate these effects. H1 posited that the manipulation of decision rationale transparency would have a positive impact on students' endorsement of Covid-19 measures. H2 proposed that decision process transparency would also positively influence the endorsement of Covid-19 measures. And H3 proposed that there would be an interaction effect between decision rationale and decision process transparency that would positively influence Covid measure endorsement among the target group.

To test these hypotheses, the study conducted a survey among Dutch UU students. Participants were randomly assigned to one of four conditions and presented with a scenario related to a new Covid-19 variant. They were then asked to rate the acceptability, effectiveness, feasibility, and support of ten government-implemented measures targeting the variant. These ratings were combined into a variable called 'Covid measure endorsement' and analyzed across the different conditions.

Contrary to the hypotheses, the findings of this study suggested that the level of transparency about the government's decision-making process does not significantly influence students' endorsement of the Covid-19 measures. The provision of information about the decision process or decision rationale did not significantly impact the participants' endorsement of the measures. Additionally, no evidence of an interaction effect was found. Although these findings deviate from the expectations based on existing literature, they contribute to the overall understanding of the influence of transparency on endorsement. Further insights can be found in the subsequent section, 'Interpretation of Results'.



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### **Interpretation of Results**

The interpretation of the results suggests several potential explanations for the findings. The topic is complex, and limited research focuses on outcomes similar to the definition of endorsement used in this study. Other studies more commonly measure different outcomes, such as 'decision acceptance' (e.g. Porumbescu & Grimmelikhuijsen, 2018). However, the concept of endorsement used in this study is more comprehensive, capturing feasibility, effectiveness, justification, and support in evaluating people's acceptance of Covid measures. As a result, the relationship between transparency and Covid measure endorsement is still not well understood, particularly in the context of the Covid-19 pandemic or other health crises. While this study aimed to contribute to bridging this knowledge gap, it is important to acknowledge that it represents only one study and does not definitively dismiss the possibility of such an effect. Further research is necessary for a more comprehensive understanding.

The existing body of literature is not entirely consistent on the exact effect of transparency, which may explain the absence of a significant effect in this study. For instance, as mentioned in the Introduction, Grimmelikhuijsen et al. (2019) found varying effects of decision rationale and decision process transparency across different domains. Similarly, De Fine Licht (2014a) observed that rationale transparency increased decision acceptance, while process transparency did not consistently produce the same effect. Additionally, the influence of contextual factors might play a role in the relationship between transparency and endorsement. As discussed before, Bogliacino et al. (2021) found that individuals' perception of the Covid-19 situation influenced their preference for different forms of transparency. The specific context in which transparency was manipulated and measured in this study—Covid-19 measures in Dutch universities during the emergence of a new virus variant—may thus also have contributed to the absence of an effect.

It is important to consider that the nonsignificant effect might be specific to the group under investigation and may not necessarily generalize to other contexts or populations (see also the 'Limitations' section on limited generalizability). It is crucial to take into account the specific context of this study, which focused on Dutch students at Utrecht University. It is possible that this particular group already held a perception of high government transparency, which could have rendered the manipulations of decision process transparency and decision rationale transparency ineffective in influencing their endorsement of Covid-19 measures. Further discussion on the limitations of the manipulation, as well as other factors contributing to the lack of evidence for the researched effect, can be found in the 'Limitations' section.

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Lastly, the nonsignificant findings can also imply that factors beyond transparency may also contribute to the endorsement of Covid-19 measures, suggesting that the relevance of transparency may vary among individuals or in different situations. It is important to note that the study's focus was limited to specific variables, which hinders the ability to conclude whether unmeasured factors beyond the scope of this research had a significant impact on the dependent variable. Although certain covariates were considered, there are likely additional variables and mechanisms that influence endorsement beyond the scope of this study. For example, one potential influential factor is political preference. Krouwel et al. (2021) found that adherence to Covid-19 measures varies among political party supporters, with lower compliance observed among right-wing voters. Additionally, personal experiences with Covid-19, such as illness or loss due to the illness, might impact endorsement regardless of transparency. Directions for future studies to address this issue are also discussed in 'Suggestions for Future Research'.

### **Strengths**

This study benefited from the collaboration with postdoctoral researcher Gootjes, who is conducting a similar study (2022, unpublished). Their involvement in the development of the survey questions strengthened the validity of the measurement tool by ensuring its appropriateness and relevance to the research question. The study also enhanced internal validity by employing a consistent set of questions to measure participants' opinions, minimizing confounding variables and measurement biases. Furthermore, focusing on the student population from the same university reduced potential confounding factors and further improved internal validity. The aggregation of individual opinions into a composite variable increased internal consistency and coherence in the findings. Data reliability was promoted through a consistent administration process, clear instructions, and efforts to ensure participant understanding, minimizing response biases and enhancing overall data reliability.

### **Limitations**

The absence of significant results in this study may be attributed to limitations in the study design. One limitation is the extensive textual content of the questionnaire used. While this approach aimed to provide clear explanations and necessary information, it is possible that the length and complexity of the content hindered participants from fully reading and comprehending all sections. As a result, this could have compromised the manipulation of experimental conditions and potentially affected the outcomes. Also, respondents may have struggled to effectively apply the scenarios in formulating their responses, despite their satisfactory ability to imagine the hypothetical scenario and its severity; reporting to

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understand the scenario does not guarantee the effective application of it in formulating responses.

Also, the data indicates that the manipulation of transparency in this study may not have been effective. When comparing government opinions across different conditions, no significant effect was observed. While this measure does not directly assess the success of transparency manipulation, previous literature suggests that transparency is associated with increased government trust and increased compliance with policies (which is similar to Covid measure endorsement) (e.g. Van Dijk and Lefevre, 2022). Therefore, the lack of significant findings regarding the impact of transparency on government opinions raises concerns about the effectiveness of the transparency manipulation. So it is possible that the study found no effect because the transparency manipulation failed to enhance government opinions, which might be necessary to enhance Covid measure endorsement. Furthermore, the manipulation possibly had little impact, because the hypothetical nature of the scenario affected participants' perceptions and responses, potentially leading to differences from real-world outcomes. Individuals may have been more inclined to answer based on their own experiences during the Covid-19 pandemic, considering their past perceptions of government communication and performance.

Another limitation of this study pertains to the generalizability of the findings. While the results obtained from Dutch students at Utrecht University may be applicable to other Dutch students in similar university settings within the Netherlands due to the similarity of government measures, caution should be exercised when extrapolating these findings to other populations and contexts. To enhance generalizability, efforts were made to control for the variables 'age', 'gender', 'first-year of study', and 'faculty'. Nevertheless, it is important to acknowledge the potential impact of the non-random sampling method employed, as participants voluntarily chose to take part in the study. This introduces the possibility of self-selection bias, limiting the generalizability to individuals who were willing to participate. It is plausible that those who volunteered might possess a higher interest or awareness regarding the topic, which could have influenced their perspectives compared to those who did not participate.

### **Suggestions for Future Research**

Future research should build upon the limitations of this study to avoid them, and learn from the interpretation of the results to address context related problems. The first limitation relates to the extensive text in the questionnaire. To improve this, it is recommended to reduce the amount of text while retaining the necessary information. Also, the study did a

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comprehension check to see whether respondents understood the scenario and its severity, it has limitations as individuals may provide affirmative responses without acknowledging potential gaps in their comprehension or missing specific details. This check also does not directly verify whether participants understood the transparency manipulation. To address this, more targeted questions are necessary to specifically assess participants' understanding of their assigned scenario. For instance, including a question such as "Please describe the factors considered by the government in formulating the implemented measures" later in the questionnaire could provide a more effective assessment of participants' understanding of the decision-making process.

Another limitation pertains to the potential difficulties in applying the hypothetical scenario in participants' responses. To address this, it is suggested to provide explicit instructions to participants, emphasizing the need to separate their responses from personal experiences. This will help ensure that participants base their answers on the manipulation presented in the study rather than their own past experiences. However, it is worth noting that there may always be a discrepancy between what individuals say they would do in a hypothetical situation and how they would actually behave in a real-life scenario. Finding a perfect solution to bridge this gap is challenging, especially during the COVID-19 pandemic when conducting real-life tests is impractical. One possible approach is to make the experiment as realistic as possible to enhance participants' engagement and simulate a genuine decision-making context.

To address the limitation of generalizability, as well as the problem of the target group's pre-existing high perception of government transparency (discussed in the 'Interpretation of Results'), a suggestion for future research is to replicate the study with a broader and more diverse sample. This replication should investigate whether the findings remain consistent across different populations, including those with low perceptions of government transparency. To enhance the generalizability and reliability of the results, it is recommended to utilize a random sampling method to ensure a representative sample.

Building upon the 'Interpretation of Results' section, future studies should consider including other factors, such as political preference or personal experiences. Personal experiences can be assessed using specific questions or scales related to direct exposure or loss experienced by participants. Moreover, qualitative methods, such as interviews, can provide deeper insights into individuals' unique experiences during the pandemic and shed light on the factors that influence their endorsement of measures. By utilizing a combination of quantitative and qualitative approaches, researchers can gain a more comprehensive

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understanding of the complex dynamics underlying individuals' endorsement of Covid-19 measures.

Lastly, it is essential to emphasize the significance of conducting additional (high-quality) research on the impact of transparency on Covid measure endorsement. Furthermore, more research on the role of government opinions / trust in this context would be valuable for gaining a comprehensive understanding of the entire phenomenon. For instance, exploring whether there is a mediating effect between transparency, government opinions, and Covid measure endorsement would provide valuable insights.

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### **Conclusion**

This study aimed to investigate the influence of decision process transparency and decision rationale transparency on the endorsement of Covid-19 measures among Dutch Utrecht University students. Surprisingly, no significant effects of these factors on the endorsement of Covid-19 measures were found, and there was no interaction effect between these factors. Moreover, it was even observed that communication specifically related to (booster) vaccination for students and staff resulted in lower endorsement of this Covid measure among those who received this information compared to those who did not. These findings challenge the initial expectations and highlight the complex nature of the relationship between transparency and endorsement in the context of the Covid-19 pandemic. It is evident that additional research is necessary to explore the broader contextual factors that shape attitudes towards Covid-19 measures. Building on this research can provide a deeper understanding of the role of transparency in shaping attitudes towards Covid-19 measures and inform policy-making processes during times of crisis.

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## Appendix

## A: FERB Approval Form

<p><b>P.O. Box 80140, 3508 TC Utrecht</b></p> <p>The Board of the Faculty of Social and Behavioural Sciences Utrecht University P.O. Box 80.140 3508 TC Utrecht</p>	<p><b>Faculty of Social and Behavioural Sciences</b></p> <p>Faculty Support Office Ethics Committee</p> <p><b>Visiting Address</b></p> <p>Padualaan 14 3584 CH Utrecht</p>
<p><b>Our Description</b> 22-2165</p> <p><b>Telephone</b> 030 253 46 33</p> <p><b>E-mail</b> FETC-fsw@uu.nl</p> <p><b>Date</b> 10 March 2023</p> <p><b>Subject</b> Ethical approval</p>	

## ETHICAL APPROVAL

Study: Effects between information about the decision process by the government that led to different Covid- measures, and the reception of these measures by UU students.

Principal investigator: J.A.C.

Penders Supervisor: Floor

Kroese

The study is approved by the Ethical Review Board of the Faculty of Social and Behavioural Sciences of Utrecht University. The approval is based on the documents sent by the researchers as requested in the form of the Ethics committee and filed under number 22-2165. The approval is valid through 30 June 2023. The approval of the Ethical Review Board concerns ethical aspects, as well as data management and privacy issues (including the GDPR). It should be noticed that any changes in the research design oblige a renewed review by the Ethical Review Board.

Yours sincerely,

Peter van der  
Heijden, Ph.D.  
Chair

This is an automatically generated document, therefore it is not signed

**B: Flyer**

# CORONABELEID OP DE CAMPUS

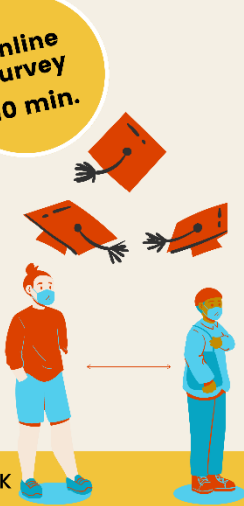

In dit onderzoek word je naar je mening gevraagd over het beleid van de overheid wat betreft verschillende corona-maatregelen die gelden op de campus.

De vragenlijst is anoniem en data wordt als uiterst vertrouwelijk behandeld.

**Doelgroep:**  
**Nederlandse studenten aan de  
Universiteit Utrecht van alle faculteiten**

**online survey  
10 min.**

**0,5 PPU**  
BSc psychologie  
studenten via  
Sona



[https://survey.uu.nl/jfe/form/sv\\_b3HgYdZQRonlp2K](https://survey.uu.nl/jfe/form/sv_b3HgYdZQRonlp2K)

[j.a.c.penders@students.uu.nl](mailto:j.a.c.penders@students.uu.nl)

## C: Poster

## Doe mee met mijn scriptieonderzoek over het CORONABELEID OP DE CAMPUS

online  
survey  
**10 min.**

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**Vragen of opmerkingen?**  
Julie Penders, studente psychologie (SHOP Master)  
j.a.c.penders@students.uu.nl



[https://survey.uu.nl/jfe/form/SV\\_b3HgYdZQRonLp2K](https://survey.uu.nl/jfe/form/SV_b3HgYdZQRonLp2K)

