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Does Who's in the Room Matter?

Race, Group Composition and the Experience of Satisfaction in Small Group Deliberations

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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

Climate change is a super-wicked problem that demands public support, yet perceptions of exclusion from policy processes continue to undermine it. Small group deliberation as a form of public participation has been proposed as a mechanism to enhance the legitimacy and public acceptance of climate policies. While diversity and representation are regarded as key criteria for successful public participation, minority groups remain significantly underrepresented in such processes.

The internal dynamics of deliberation, particularly how group composition shapes experiences, are not well understood in the context of public participation. This study examined whether homogeneous versus diverse racial group composition affected satisfaction with deliberation, and whether this relationship is mediated by feeling heard and moderated by participant race.

A mixed 2 x 2 design was applied, with group composition as the within-subjects factor and order as the between-subjects factor. Participants partook in two deliberation tasks in small groups with either homogenous or diverse racial group compositions. Results supported the prediction that homogeneous groups would report higher satisfaction ($t(38) = 4.12$, $p < .001$, $d = .66$). Feeling heard partially mediated this relationship (indirect effect $ab = 0.11$, Boot 95% CI [0.003, 0.31]) suggesting that homogeneity enhances satisfaction in part via feeling heard. The moderated mediation hypothesis was not supported at the overall index level though the interpretation should be approached cautiously given the study's significantly underpowering.

The findings present a tension: while diversity is touted as necessary for deliberative legitimacy, it may undermine subjective deliberation quality in non-facilitated settings. Alternative participation designs, such as homogeneous sub-groups feeding into larger diverse deliberations, are proposed as potential solutions.

Acknowledgements

Ehara taku toa i te toa takitahi, engari he toa takitini

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Climate change is a super-wicked problem due to its complexity, urgency, inevitability, and shared responsibility (Peters et al., 2018). Effective climate policy faces a lack of public support as a major barrier to implementation (Drews & van den Bergh, 2016; Perlaviciute, 2025). One reason policies may face public resistance could be due to perceptions of unfairness and exclusion of the public from the policy formation process (Paulis et al., 2024; Perlaviciute, 2022).

Scholars suggest that public participation facilitates inclusion of the public in policymaking and improves public acceptability (Liu et al., 2020; Paulis et al., 2024). Public participation can be defined as deliberate engagement with the public where they have decision-making influence (Ernst & Shamon, 2020; Perlaviciute, 2022).

The dynamic collaborative processes of public participation are associated with increased social and environmental justice, improved decision-making and implementation, and enhanced public acceptability (Foroughi et al., 2023; Liu et al., 2020; Perlaviciute, 2022; 2025; Suškevičs et al., 2023). Thus, participation in policy processes can build public support as it can increase perceptions of fairness, accounting for public interests (Ernst & Shamon, 2020; Drews & van den Bergh, 2016; Perlaviciute, 2022).

Diversity in Public Participation: Legitimacy and Representation

When participation procedures are viewed as not inclusive, not transparent, and not genuinely incorporating public feedback, it can invite public resistance (Paulis et al., 2024; Perlaviciute, 2022). Successful participation can lead to more inclusive decision-

making, but this is dependent on how the participation process is designed and perceived (Ernst & Shamon, 2020).

Theories from many disciplines have posited how to make public participation more democratic and legitimate, with diversity and deliberation emerging as key themes (Perlaviciute, 2022). Diversity, inclusion, and representation are crucial because vulnerable and minority groups feel the negative effects of environmental harm disproportionately, emphasising the importance of their inclusion in climate policymaking (Foroughi et al., 2023; Korpilo et al., 2022).

Equally, engaging minority groups who are normally underrepresented in environmental public participation forums is documented as difficult to achieve (Perlaviciute, 2025). Recruiters for public participation are making conscious efforts to get representative and diverse samples (Ernst & Shamon, 2020). However, even when a diverse sample is recruited, existing research shows that public participation in climate change contexts is dominated by vocal White men and minority participants contribute less (Abdel-Monem et al., 2010; Foroughi et al., 2023; Kennedy et al., 2020; Perlaviciute, 2022). Because climate impacts are racially disproportionate (Foroughi et al., 2023; Korpilo et al., 2022), the exclusion of POC from deliberation undermines procedural legitimacy and substantive justice. It is important to ensure everyone feels comfortable participating to reach the potential of the benefits of public participation. Thus, while recruiting diverse participants is a key known challenge, the interaction dynamics once they are seated remain underexplored.

In this study I focus on the dynamics within diverse deliberation groups in public participation processes or activities organised by authoritative parties (e.g. government agencies) that engage with the public deliberately, explicitly, and directly (Ernst &

Shamon, 2020; Perlaviciute, 2022; 2025). Citizen assemblies and mini-publics are examples of such processes, in which randomly selected demographically representative citizens are brought together to discuss and deliberate on policy issues (Knobloch & Gastil, 2022; Renn et al., 2025). This is different to representative democracy and direct participation through social movements for example, which are beyond scope.

Micro-level Dynamics

Group Composition and Deliberation Dynamics

Deliberation is the process of discussion where participants exchange ideas, consider alternative perspectives and work toward an informed decision on an issue (Perlaviciute, 2022; Renn et al., 2025). This study focuses specifically on small group deliberations as a mechanism of public participation (Renn et al., 2025; Sumaktoyo et al., 2016), drawing on evidence from public participation, deliberation and focus group research where relevant (Greenwood et al., 2014; Knobloch & Gastil, 2022). It does not address large-scale participatory approaches, digital engagement, or structural barriers to participation beyond that of the deliberation interaction itself.

Several scholars argue diversity is key for public participation to be perceived as legitimate and fair (Abdel-Monem et al., 2010; Korpilo et al., 2022; Paulis et al., 2024; Perlaviciute, 2022, 2025; Ping et al., 2025; Sumaktoyo et al., 2016). Diverse participants in such processes can lead to greater representation and thus more robust decision-making (O'Farrell, 2023; Karjalainen & Rapeli, 2015; Walsh & Elkink, 2021). This is important for public participation because decision-making is judged more positively by

the public if they think all stakeholders have been involved – i.e. the participants are diverse and representative (Perlaviciute, 2022).

Deliberation in public processes can reduce the discrimination caused by race, class, and gender inequalities (Mendelberg et al., 2014). However, it may instead mirror existing repressive forms of racism, power imbalances, and discrimination, and there are theories that societal inequities are transferred or even heightened in small group deliberation processes (Brown & Mistry, 2005; Sumaktoyo et al., 2016). Thus, minority and other disadvantaged groups may refrain from contributing (Abdel-Monem et al., 2010; Brown & Mistry, 2005; Mendelberg et al., 2014).

Large-scale public participation has been shown to underrepresent minorities (Ernst & Shamon, 2020; Paulis et al., 2024), however, it remains unclear the driver of this underrepresentation at the deliberation level itself. Much of the existing literature evaluates the problem at the system or recruitment level affecting who is invited and by whom, but less focus has been given to what occurs once diverse participants are in the room (Renn et al., 2025). The interpersonal dynamics of small group deliberation particularly how racial group composition[1] affects individual experiences, remain underexplored (Brown & Mistry, 2005; Sumaktoyo et al., 2016).

Subsequently, this study moves from the macro-level lens of who participates to the micro-level lens of how deliberations are experienced. The study design used non-facilitated small group deliberations to isolate the effect of group composition, specifically on a racial divide, on satisfaction and feeling heard independent of a moderator's influence (Knobloch & Gastil, 2022). Non-facilitated deliberation refers to

[1] Group composition refers to the make-up of a deliberation group, specifically to the degree to which group members share or differ on a given characteristic.

small-group discussions without a moderator to manage turn-taking, relying on groups to self-regulate dynamics and interactions.

Focus Groups as a Theoretical Foundation

There has been literature on the impact of group composition in focus groups but not as much in public participation and non-facilitated deliberation. Focus group insights offer a foundation for understanding the effect of group composition in small group deliberation because both involve discussion among a small group of participants where the composition of the group can shape a participant's willingness to contribute (Brown & Mistry, 2005; Roller & Lavrakas, 2015; Sumaktoyo et al., 2016).

Crucially, research in both contexts finds that existing power imbalances, particularly around race, are not surpassed in a group context but reproduced within it, with minority participants contributing less in mixed-composition groups (Brown & Mistry, 2005; Greenwood et al., 2014; Mendelberg et al., 2014). These dynamics are particularly relevant when discussing sensitive or politically charged topics such as climate policy (Greenwood et al., 2014; Perlaviciute, 2022).

However, the majority of this evidence stems from facilitated group settings, where a moderator actively manages turn-taking and can redistribute speaking opportunities to minority participants (Knobloch & Gastil, 2022; Greenwood et al., 2014). Because no such corrective mechanism exists in non-facilitated deliberation, the effects of group composition may be stronger than what has been found in focus group research (Knobloch & Gastil, 2022). The independent effect of racial group composition, absent facilitator influence, therefore, remains empirically underexplored and represents a direct gap this study addresses.

Homogeneity vs. Diversity in Small Groups

A recommendation for making participants feel comfortable in expressing their views is to have groups that are relatively homogenous in social backgrounds (Greenwood et al., 2014). Participants who have similar frames of reference, for example belonging to the same age group, can feel more comfortable and confident to share their thoughts and opinions (Roller & Lavrakas, 2015). Homogeneity increases participant compatibility, in turn making the group more comfortable with each other (Greenwood et al., 2014), therefore operating as a mechanism through which satisfaction can be increased. Sharing social and cultural backgrounds is particularly valuable when considering sensitive issues, such as drug use or politically charged topics (Greenwood et al., 2014; Roller & Lavrakas, 2015).

Unlike focus groups which focus on data extraction, deliberations are about decision-making, making the balance between comfort (homogeneity) and diversity more complex. Abdel-Monem et al. (2010) and Kennedy et al. (2020) argue there are significant differences across different demographic categories when examining the impacts of group composition and subsequent impact on satisfaction levels. It is theorised that sharing key characteristics, backgrounds or experiences can provide comfort and safety even in a group of strangers and some argue that homogeneity as crucial for group interactions and dynamics (Greenwood et al., 2014; Roller & Lavrakas, 2015).

Racial Dynamics and the Myth of Neutrality

The composition of groups has been found to affect experiences and perceptions of minority participants in deliberation. Specifically, studies have found

that there has been a significant difference between people of colour (POC) and White people in experiences of satisfaction in group deliberation in unbalanced racial group composition (Abdel-Monem et al., 2010; Kennedy et al., 2020; Chirco & Buchanan, 2022; Ping et al., 2025). Person of Colour is a self-identified term referring to individuals who identify as a part of non-White racial or ethnic groups (Chirco & Buchanan, 2022). It is used to distinguish those who face systemic racism and structural disadvantages, contrasting their experiences with those who do not.

POC report lower levels of feeling heard in diverse settings compared to White participants, (Abdel-Monem et al., 2010; Ping et al., 2025) suggesting that the experiences between racial groups are affected by group composition and are not racially neutral.

Outcomes of Deliberation: Satisfaction and Feeling Heard

Diversity as a Proxy for Legitimacy

To encourage diverse participants in deliberations, it is important to understand how deliberative experiences are perceived by people from less politically powerful groups and how group composition affects experiences of the discussion (Sumaktoyo et al., 2016). There are theories that societal inequities are transferred or even heightened in small group deliberation processes with ‘mixed’ membership (Brown & Mistry, 2005; Sumaktoyo et al., 2016).

Satisfaction as Evidence for Fairness

The way that deliberation is designed can facilitate a culture of safe participation for everyone, providing opportunities to contribute and encourage the consideration of different perspectives (Abdel-Monem et al., 2010; Morris et al., 2024; Ping et al., 2025; Suškevičs et al., 2023). Satisfaction refers to participants' subjective judgements of their deliberation experience, including perceptions of fairness, opportunity to contribute, and the quality of the group interactions (Abdel-Monem et al., 2010; Ping et al., 2025).

Satisfaction is often used as a proxy for procedural fairness; when participants are satisfied with their participation, they can perceive the public participation process as fairer and more equitable, helping to realise the positive impacts of diversity within the deliberation and public participation (Abdel-Monem et al., 2010; Kennedy et al., 2020; Paulis et al., 2024; Perlaviciute, 2022; Ping et al., 2025).

Feeling Heard as a Mediating Mechanism

Studies have found that satisfaction with the deliberation increased when individuals felt heard, the group was respectful, and that everyone was provided with enough opportunities to speak (Abdel-Monem et al., 2010; Ping et al., 2025). Dialogue is the foundation to deliberation and at the heart of dialogue is listening, indicating that careful listening is a key feature of a successful public participation event (Roos et al., 2023; Vogel & Gastil, 2025). Feeling heard is defined as the participant's subjective perception that their contributions were genuinely heeded and respected by others involved in the discussion (Vogel & Gastil, 2025). Vogel & Gastil's (2025) meta-analysis shows that feeling heard mediates the relationship between dialogue and satisfaction

(Vogel & Gastil, 2025). It is suggested that this is because it reflects an individual's perception and experience of being listened to rather than just speaking, inferring a level of respect felt during the interaction.

Research Gaps and Hypotheses

Theoretical Gaps in Non-Facilitated Settings

Theory argues successful public participation should be diverse and representative (Paulis et al., 2024; Perlaviciute, 2022; 2025), deliberations are supposed to encompass diverse perspectives and produce fairer policies but current formats can discourage minority groups from participating (Brown & Mistry, 2005; Sumaktoyo et al., 2016). This can lower perceived legitimacy to participation and deliberation processes, reducing the intended effects of increasing policy acceptance. Hence it is important to facilitate positive experiences and satisfaction with the group and process when participating in public participation.

Despite growing evidence that racial group composition influences satisfaction in deliberative settings (Brown & Mistry, 2005; Sumaktoyo et al., 2016), several gaps remain. The majority of the evidence on group composition is steeped in focus group contexts (Greenwood et al., 2014; Roller & Lavrakas, 2015). There has been limited work on testing whether the impacts are replicable in the context of small-group deliberations.

Further, the existing studies have primarily focused on moderated or facilitated discussions (Knobloch & Gastil, 2022; Renn et al., 2025), leaving the independent effect of group composition untested. Smaller-scale and community level climate discussions

and public participation processes can occur without professional facilitators or moderators, making the understanding of self-regulating group dynamics valuable.

Moreover, feeling heard has been identified as a mediator for interpersonal outcomes such as satisfaction (Vogel & Gastil, 2025) but whether this mediation is moderated by race has not been empirically tested.

Understanding how group composition affects the experiences of POC in non-facilitated deliberations provides direct insights for designing more equitable public participation processes. This, in turn, can improve the quality of deliberation by encouraging equitable contribution to improve climate policy decision-making.

Study Design and Hypotheses

The current study aimed to investigate the primary question: *how are group composition and race associated with feeling heard and satisfaction with the process in small group deliberations?* This study addressed these gaps by experimentally manipulating group composition in non-facilitated deliberations, testing both the mediation of feeling heard and its moderation by race.

Based on existing literature, two main hypotheses were developed (*see Figure 1*):

H1. We hypothesise that group composition has an effect on satisfaction, such that discussions in homogenous groups will show higher satisfaction.

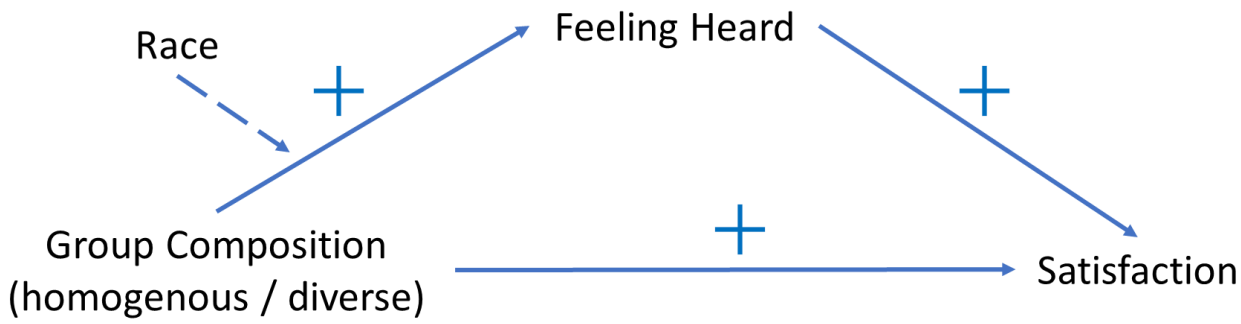
H2. (a) We hypothesise that the relationship between group composition and satisfaction is mediated by feeling heard, such that as feeling heard increases so too does satisfaction.

(b) We hypothesise that this mediation is moderated by race, such that POC in diverse groups will perceive lower feeling heard thus lower satisfaction, compared to

POC in homogenous groups. White people will not perceive a significant difference in group processes or satisfaction between diverse and homogenous groups.

Figure 1

Model of Hypotheses



Methods

Participants

A priori power analysis using G*Power was performed for a repeated measures ANOVA (within-between interaction: two groups, two measurements). Assuming a small to moderate effect size (β = .18, α = .05) and a desired power of .80, a sample size of 64 was indicated to have sufficient statistical power for conclusive insights.

Participants were recruited via SONA and posters on University of Groningen (RUG) notice boards, posters in public spaces such as bus stops, and via advertisements on WhatsApp (snowballing).

Participants recruited through SONA received SONA credits for their participation. We expected the number of POC students to sign up via SONA to be low. In total, 24 participants were recruited via SONA with none of them identifying as POC. To counter-balance group composition, we also recruited via snowballing. This channel resulted in 19 participants, 11 identifying as POC. The final sample consisted of *N* = 43 participants, thus the achieved power was not sufficient.

The age of participants ranged from 16 to 35 years old, with 38 participants indicating they were between 16-25 years old. There were 10 participants who identified as male, 27 who identified as female, three participants who identified as non-binary, and three participants who preferred not to disclose their gender. Eleven participants identified as a person of colour or white passing, while 32 participants did not. Detailed demographic characteristics are presented in Table 1.

Table 1

Demographic Characteristics of Participants

Characteristic		*N*	%
Age	16-20	18	41.9
	21-25	20	46.5
	26-30	4	9.3
	31-35	1	2.3
	35+	0	0
Gender	Male	10	23.3
	Female	27	62.8
	Non-binary	3	7
	Prefer not to say	3	7
Race	POC	11	25.6
	Not POC	32	74.4

Design and Procedure

After signing up in SONA participants were directed to a Qualtrics survey to obtain consent, provided with the information sheet, and had personal information collected, such as email address, gender, ethnicity and whether they identify as POC or not.

Because the research design required certain group compositions, participants recruited via advertisements and posters were directed to an expression of interest (EOI) Qualtrics survey. Participants recruited via the EOI entered a lottery draw to win one of two 25-euro vouchers. Individuals were redirected to the end of the survey and excluded if they were not at least 16-years-old nor identified as a student at RUG.

Regardless of the method of recruitment, potential participants directed to the Qualtrics survey were provided with an information sheet, a digital consent form, asked

for contact information to facilitate organisation, and asked for demographic information to organise groups according to the research.

Following the completion of the surveys, in-person sessions were conducted at RUG. During the briefing, participants were first reminded of the study purpose and had an opportunity to review the information sheet again.

A mixed 2 x 2 design was used with group composition (homogeneous or diverse) as the within-subjects factor and order (homogeneous first or diverse first) as the between-subjects factor. Participants experienced both levels of group composition across two deliberation rounds, but only did so in one sequence.

Then they were introduced to the deliberation topic and asked to complete the task themselves (see Appendix A and B). The context of the deliberation were budget cuts to programmes at RUG, which included a range of racially and ethnically motivating and neutral topics.

Participants were divided into in small groups (2-5 people) and were asked to reach a consensus on recommendations – which two programmes to save, which two to cut and which two they were neutral on. Each participant was involved in two rounds of discussion of approximately 15 minutes each (see Figure 2). Where possible, each participant was assigned to one homogeneous group discussion (same identification as POC or not) and one diverse group discussion (mixed identities). This allowed us to test how group composition influenced the variables of interest.

The order was varied to minimise order effects. However, the study did not achieve a balanced order, with 28 (65%) in homogenous group discussions first and

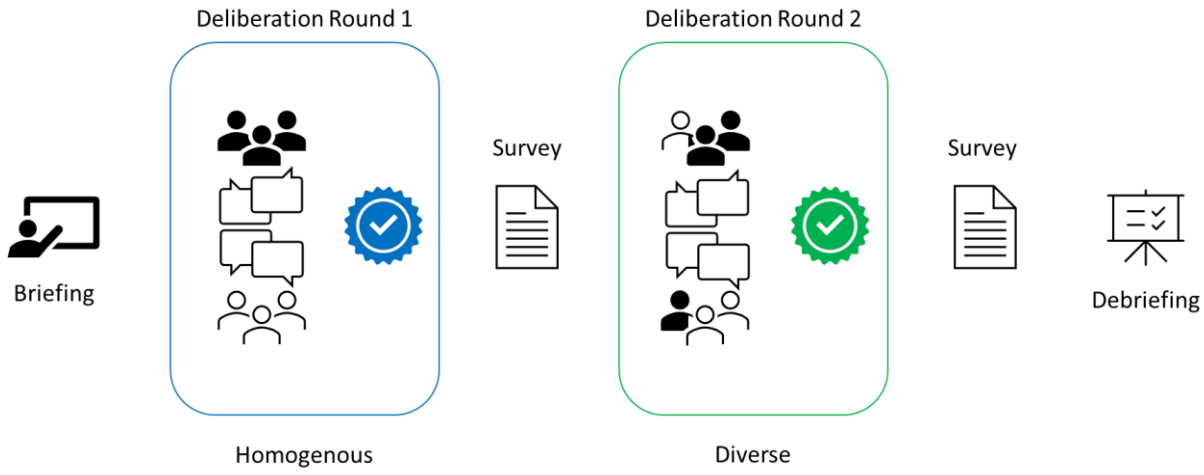
only 11 (26%) in diverse group compositions first. Four (9%) participants were in homogenous only or diverse only groups. Pairwise deletion was used to handle missing data for these participants.

Prior to the first group discussion, participants completed a brief baseline questionnaire (paper). Following each round of discussion, they completed a short paper questionnaire capturing their experience and perceptions of the process.

A debriefing closed each session, providing more details about the experiment, reveal withheld information, and highlighted that their contributions about the programs will not, in fact, be used to inform university budget cuts. Participants could choose to reaffirm or withdraw their consent.

Figure 2

Study Procedure



Note: *this figure depicts the study procedure for participants assigned to the homogenous group first, followed by deliberating in a diverse group*. The order was reversed in other sessions, aiming to balance the homogenous groups first condition and homogenous groups second condition.

Operationalisation and Measures

Group Composition

Group composition is operationalised as a binary condition: homogenous groups comprising of participants who all identify as POC or all who do not, and diverse comprising of a mix of POC and white participants (Brown & Mistry, 2005; Sumaktoyo et al., 2016). Sommers (2006) also adopt this theoretically reductive but experimentally necessary approach to racial diversity, acting as an experimental precedent.

Deliberation

Given this study design, deliberation is operationalised as a time-limited non-facilitated small group discussion, where participants are invited to share and respond to one-another's views without a moderator (Knobloch & Gastil, 2022; Sumaktoyo et al., 2016).

Manipulation Check

A manipulation check was included to test perceptions of homogeneity and diversity for each deliberation group. Two items were asked on a 7-point Likert scale from strongly disagree to strongly agree: 'I felt similar to other members of this group', and 'I identify with this group'.

Race

Race is operationalised through the identification of being a person of colour or not – in a binary self-dentification. This binary is an oversimplification of racial identity which is multidimensional, but was applied for experimental ease (Fish et al., 2020).

During the Qualtrics survey, participants were asked “Do you identify as a person of colour?” with the response options of ‘yes’, ‘no’ and ‘other’ (open-text field). This enabled racial group membership to be self-identified.

However, skin-tone acted as a visible marker of racial group membership for other participants in the discussions (Genkova et al., 2025).

Feeling Heard

Roos et al. (2023)’s Feeling Heard scale was used to assess how heard participants felt in their group discussions. Participants responded to seven items, including statements such as “I could say what I really wanted to say” and “Others treated me with respect” (see Appendix C for full scale). This scale has been well-validated and demonstrated sufficient internal consistency ($\alpha = .75$) in the current sample.

Satisfaction

Abdel-Monem et al., (2010)’s Group Satisfaction scale was used to assess how satisfied participants felt in their group discussion. Participants responded to five items, including statements such as “I was satisfied with the quality of the group process” and “I was satisfied with the quality of the group outcome” (full scale in Appendix C). This scale has been well-validated and demonstrated sufficient internal consistency ($\alpha = .81$) in the current sample.

Method of Analysis

The data was analysed using SPSS Statistics 28. To test hypothesis 1, a paired samples t-test was used to compare homogenous and diverse groups’ satisfaction levels.

All measured variables in the mediation process are within-subjects resulting in a 1-1-1 study design (Kim & Hong, 2020). Further, the study requires mediation and moderation on a two-instance repeated-measures design. The MEMORE macro (Version 3.0; Montoya, 2022) is designed specifically for this purpose (Montoya, 2024), thus it was used to test hypothesis 2a and 2b.

For the statistical analysis of hypothesis 2, four participants were excluded as they did not participate in both a homogeneous and diverse condition, resulting in a final sample size of $N = 39$. The macro calculated feeling heard and satisfaction using within-person difference scores (diverse minus homogenous condition) and feeling heard was automatically mean-centred prior to analysis. The indirect effect was calculated using the percentile bootstrap method with 5,000 resamples and 95% confidence intervals.

Results

Preliminary Analysis

Manipulation Check

A manipulation check was undertaken to confirm that the group composition manipulation between racially homogenous and racially diverse groups was successful. Table 2 breaks down the results.

Table 2

Differences In Perceived Similarity and Identity Across Group Compositions

Item	Composition	M	SD	Correlation	t	p	Cohen's d
Similarity	Homogenous	5.46	1.23	0.33	2.448	0.010**	0.392
	Diverse	4.92	1.13				
Identity	Homogenous	5.05	1.30	0.56	3.160	0.002**	0.506
	Diverse	4.41	1.39				

Note: $N = 39$. * $p < .05$, ** $p < .01$, *** $p < .001$.

The manipulation check indicates that for the homogenous group compositions, participants somewhat agreed that they felt similar to other members and identified with the group. The manipulation check indicates that for the diverse group compositions, participants also slightly agreed that they felt similar to other members and identified with the group.

The difference between group compositions for the two manipulation items was significant (similarity: $t(38) = 2.448$, $p = .010$, d: .392, identification: $t(38) = 3.160$, $p = .002$, d: 0.506). This suggests that the group composition manipulation was successful into creating two distinct group compositions.

Correlation Check

To examine the relationship between feeling heard and satisfaction, condition-specific Spearman's rank-order correlation coefficients were calculated. Preliminary analyses indicated violations for normality and linearity assumptions, for both compositions, therefore, the non-parametric Spearman's rank-order correlation was used (Table 3).

When participants were in homogenous groups, the correlation between feeling heard and satisfaction was strong, positive, and statistically significant $r_s(39) = .62$, $p < .001$, suggesting that higher feeling heard scores were associated with higher satisfaction scores. In diverse groups, the correlation remained positive and significant, $r_s(39) = .56$, $p < .001$, still strong but not as strong.

Table 3

Spearman's Correlations Between Feeling Heard and Satisfaction by Group Condition

Condition		Variable	M	SD	1	2
Homogenous	1.	Feeling Heard	6.15	0.70	-	
	2.	Satisfaction	6.37	0.50	.62**	-
Diverse	1.	Feeling Heard	5.98	0.67	-	
	2.	Satisfaction	5.85	0.89	.56**	-

Note: *N = 41*. r_s *= Spearman correlation. Dashes on diagonal lines indicate self-correlations. * p < .05, ** p < .01, *** p < .001 (2-tailed)*

The fact the variables are correlated across conditions confirms that it is worthwhile to undertake a mediation and moderated mediation analysis.

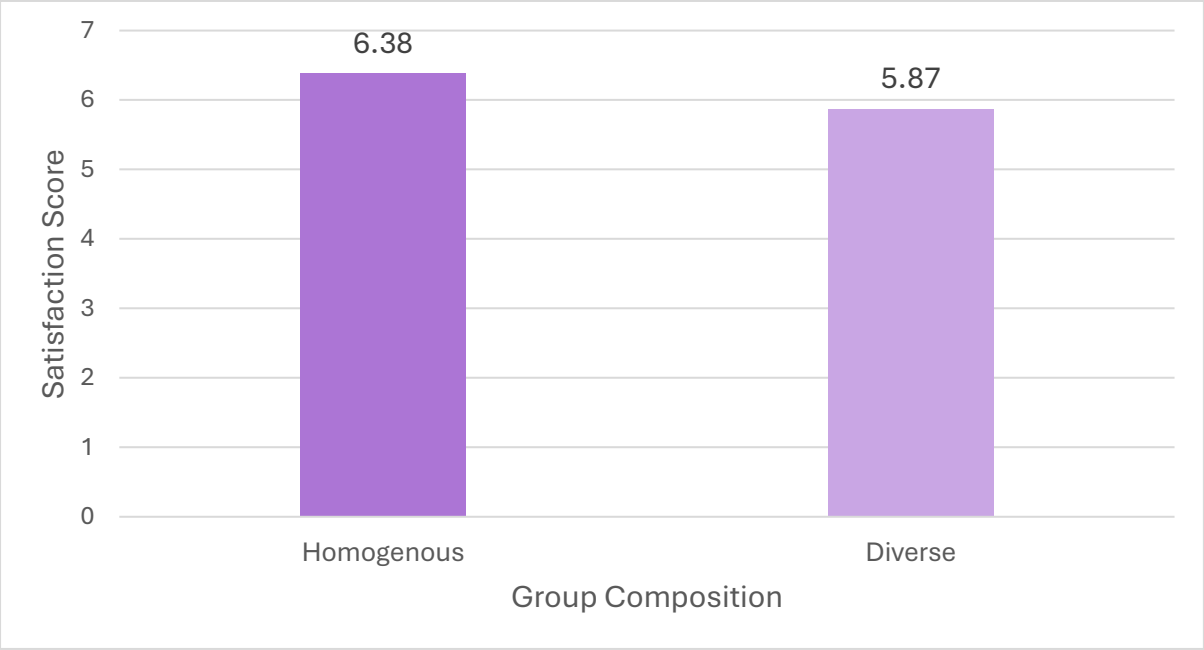
Hypothesis Testing

Hypothesis 1

A paired samples t-test was used to assess whether there was a statistically significant difference in satisfaction between the homogenous and diverse group compositions. There was a significant difference between the scores for the homogenous (M = 6.38, SD = 0.51) and diverse compositions (M = 5.87, SD = .91); $t(38)$ = 4.12, $p < .001$, d: .659, with homogenous groups having significantly higher levels of satisfaction (Figure 3).

Figure 3

Mean Satisfaction by Group Composition



Note: *N = 39, as calculations are based on pairwise completion observations*.

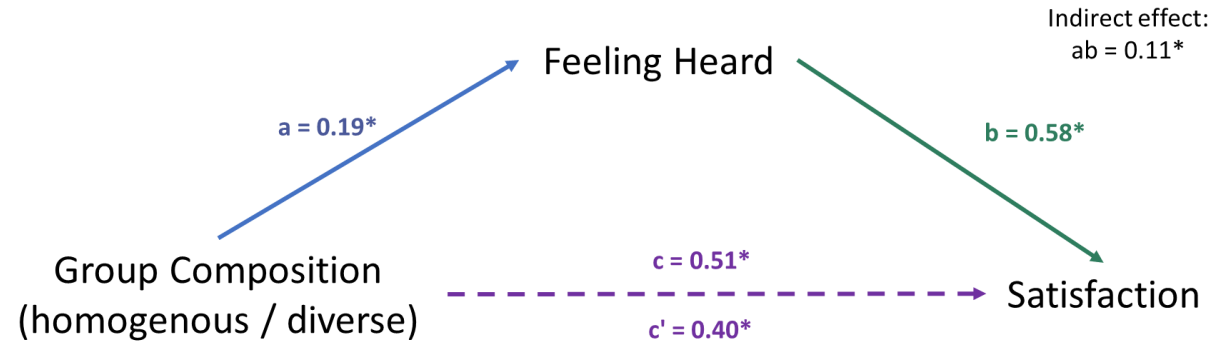
This finding supports hypothesis 1 that group composition has an effect on satisfaction, such that discussions in homogenous groups will show higher satisfaction.

Hypothesis 2a

A within-participant mediation analysis was completed using the MEMORE macro for SPSS, using Model 1, following the analytic framework for two-condition repeated measures design (Montoya & Hayes, 2017). Group composition (homogenous vs. diverse) acted as the independent variable, feeling heard as the mediator, and satisfaction as the outcome variable. Results are demonstrated in Figure 4 and Table 4.

Figure 4

Mediation Model for Group Composition on Satisfaction via Feeling Heard



Note: *N = 39. All coefficients are unstandardised. 5,000 bootstrapped samples were used, and 95% confidence interval reported. * p < .05 or confidence interval does not include zero.*

Table 4

Unstandardised Path Coefficients For The Mediation Model

Path	b	SE	t	df	p	95% CI
a	0.19	0.09	2.22	38	.033*	[0.02, 0.37]
b	0.58	0.21	2.72	36	.010*	[0.15, 1.01]
c	0.51	0.12	4.12	38	.0002***	[0.26, 0.76]
c'	0.40	0.12	3.21	36	.003**	[0.15, 0.64]
ab	0.11	0.08	-	-	*	[0.003, 0.31]

Note: *N = 39. All coefficients are unstandardised. 5,000 bootstrapped samples were used, and 95% confidence interval reported. * p < .05 or confidence interval does not include zero, ** p < .01, *** p < .001.*

Group composition significantly predicted feeling heard such that participants reported feeling more heard in homogenous groups compared to diverse groups (*path*

a). Feeling heard in turn significantly predicted satisfaction after controlling for the mean level of feeling heard across conditions (*path b)*.

The final mediation model was statistically significant ($F(2,36) = 3.90$, $p = 0.029$, $R^2 = .18$) indicating that the difference in feeling heard between conditions accounted for 17.79% of the variance in the difference in satisfaction scores.

The indirect effect of group composition on satisfaction via feeling heard was statistically significant, demonstrated by a 95% bootstrap confidence interval excluding zero (path *ab*). Taking into account the mediating role of feeling heard, the direct effect of group satisfaction remained significant (path *c'*).

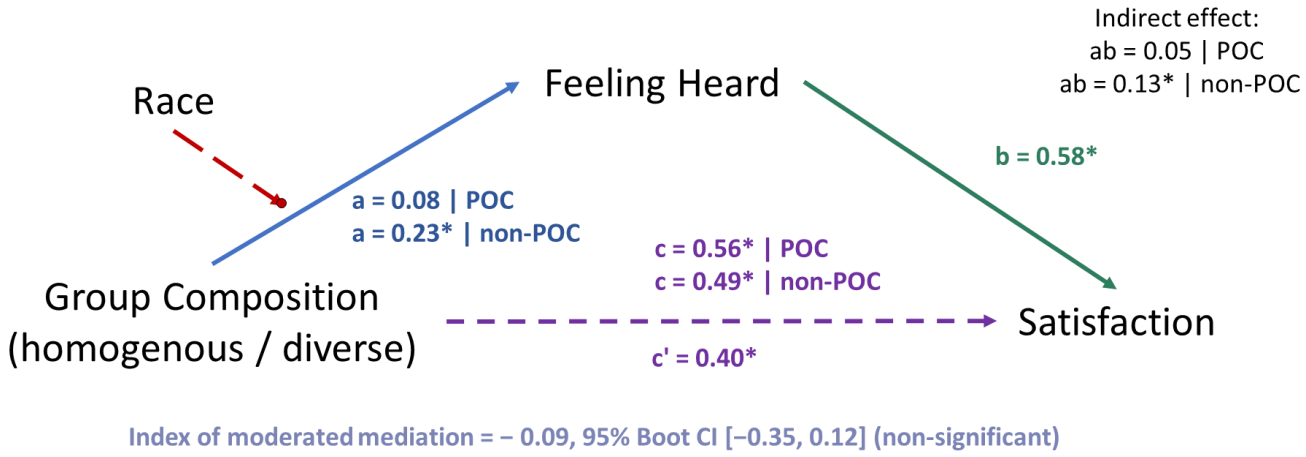
These results indicate indicates that part of group composition's effect on satisfaction occurred via participants feeling more heard in the homogenous condition. This suggests a partial mediation and supports hypothesis 2a.

Hypothesis 2b

A within-participant moderated mediation analyses was completed using the MEMORE macro for SPSS, using Model 15, following the analytic framework for two-condition repeated measures design (Montoya, 2024). Group composition (homogenous vs. diverse) acted as the independent variable, feeling heard the mediator, race (POC: 0 = non-POC, 1 = POC) the moderator, and satisfaction the outcome variable. In Model 15, only the effect of group composition on feeling heard was moderated by race (path a), and all other effects estimated without moderation. Results are demonstrated in Figure 5 and Table 5.

Figure 5

Moderated Mediation Model for Group Composition on Satisfaction via Feeling Heard by Race



Note: *N = 39. All coefficients are unstandardised. 5,000 bootstrapped samples were used, and 95% confidence interval reported. * p < .05 or confidence interval does not include zero.*

Table 5

Unstandardised Path Coefficients For The Moderated Mediation Model

Path		b	SE	t	df	p	95% CI
a	POC	0.08	0.18	0.43	*37*	.668	[-0.29, 0.45]
	Non-POC	0.23	0.10	*2.27*	*37*	.029*	[0.02, 0.43]
b		0.58	0.21	2.72	36	.010*	[0.15, 1.01]
c	POC	0.56	0.26	2.14	37	.039*	[0.03, 1.08]
	Non-POC	0.49	0.14	3.46	37	.001***	[0.20, 0.78]
c'		0.40	0.12	3.21	36	.003**	[0.15, 0.64]
ab	POC	0.05	0.09	-	-		[-0.11, 0.28]
	Non-POC	0.13	0.09	-	-	*	[0.003, 0.36]

Note: *N = 39. All coefficients are unstandardised. 5,000 bootstrapped samples were used, and 95% confidence interval reported. * p < .05 or confidence interval does not include zero, ** p < .01, *** p < .001.*

When comparing the effect of group composition on feeling heard (path a) between POC and non-POC participants, significant differences were found. For POC participants, the analysis did not find a significant effect. For non-POC participants, a significant effect was found for group composition predicting feeling heard scores such that non-POC participants felt more heard in homogenous conditions relative to diverse conditions.

Analysis demonstrated that feeling heard significantly predicted satisfaction after controlling for mean levels of feeling heard across conditions (path b), and that the direct effect of group composition (path c') was also significant, with results consistent with the simple mediation analysis.

The conditional total effect of group composition on satisfaction (path *c*) was significant for both POC and non-POC participants.

The indirect effect of group composition on satisfaction via feeling heard (path *ab*) was not significant for POC as the bootstrapped confidence interval included zero. For non-POC participants, a significant effect was found for group composition on satisfaction via feeling heard as the bootstrapped confidence interval excludes zero. This pattern is consistent with a moderated of the first step in the mediation pathway.

However, the index of moderated mediation was not significant as the confidence interval includes zero (index = -0.09, *Boot SE* = 0.12, 95% Boot CI [-0.35, 0.12]). This indicates that while the conditional indirect effects differ in size across racial groups, this difference did not reach statistical significance.

Exploratory Analysis

Some t-tests were conducted to examine the differences between POC and non-POC participants across the group compositions (Table 6-7).

Table 6

Differences in Feeling Heard between Races and Group Compositions

Race	Composition	N	M	SD	Correlation	t	p	Cohen's d
POC	Homogenous	9	6.48	0.42	0.73	0.53	.304	0.18
	Diverse	9	6.40	0.65				
Non-POC	Homogenous	30	6.10	0.75	0.67	2.17	.019*	0.40
	Diverse	30	5.87	0.65				

Note: *$p < .05$, **$p < .01$, ***$p < .001$.

For POC participants, the difference in feeling heard scores between homogenous and diverse conditions was not significant, whereas for White participants, this was the case. This supports the findings from the moderated mediation model.

Table 7

Differences in Satisfaction between Races and Group Compositions

Race	Composition	N	M	SD	Correlation	t	p	Cohen's d
POC	Homogenous	9	6.69	0.39	0.84	3.00	.008**	1.001
	Diverse	9	6.133	0.81				
Non-POC	Homogenous	30	6.29	0.52	0.47	3.25	.001***	0.593
	Diverse	30	6.79	0.93				

Note: *$p < .05$, **$p < .01$, ***$p < .001$.

For both POC and non-POC participants, the difference in satisfaction scores between homogenous and diverse conditions was significant, also in-line with findings from the moderated mediation model. The power of this for the POC sample should be interpreted with caution as the sample size is small.

Discussion

This study explored the interactions between racial group composition, feeling heard and the experience of satisfaction in small group non-facilitated deliberations. It assessed whether the relationship between group composition and satisfaction was mediated by race and whether this was moderated by race. In line with H1, participants reported significantly higher satisfaction in homogenous group compositions compared to diverse compositions. H2a was also supported, with feeling heard partially mediating this relationship, indicating that group composition affects satisfaction in part through the level that a participant felt heard. However, H2b was not supported as the moderated mediation index was non-significantly – although conditional indirect effects revealed an asymmetrical pattern across the binary racial groups, necessitating caution in interpretation.

Aligning with the theory from focus group research by Greenwood et al. (2014) and Roller & Lavrakas (2015), who argue that shared social backgrounds foster comfort and compatibility in groups, findings indicated that homogenous groups experienced significantly higher satisfaction. This supports the notion that group composition has a meaningful practical effect on deliberation and extends into non-facilitated deliberation. Nonetheless, satisfaction levels in both conditions were overall high.

The finding that the homogenous composition was significantly higher for the non-POC participants is different to the hypothesis that they would not perceive a difference. This contrasts the findings from Abdel-Monem et al. (2010) and Ping et al. (2025) where white participant's responses were not different across conditions. While it may seem that this is at odds with the literature calling for diversity in public

participation, it highlights that diversity alone is not sufficient. At a micro-level, the focus is whether participants can contribute equally – which is where homogenous group composition insights can address.

The significant partial mediation model indicates that group composition affects satisfaction through multiple pathways – feeling heard being one such mechanism. The mediation being partial rather than full implies that increasing feelings of being heard may not fully bridge the gap in satisfaction between group compositions. The feeling heard mediation model for the group composition-satisfaction relationship explained 17.79% of the effect on satisfaction, suggesting that other factors may also contribute to the relationship, which warrants further investigation. Note that given the within-subjects repeated measure design, the R^2 reflects the variance explained in the satisfaction difference scores between homogenous and diverse conditions, rather than raw satisfaction scores. The empirical finding that feeling heard mediates the group composition and satisfaction link supports Vogel & Gastil's (2025) the argument that listening is a key component of successful deliberation, grounding this theory in an experimental setting.

When interpreting the moderated mediation results and non-significant index, it is crucial to do so with caution as the sample sizes for POC and White participants was very imbalanced. The small sample size (N = 39 | POC = 9, non-POC = 30) limits the statistical power of the results. The conditional indirect effects indicate that for White participants, group composition influenced satisfaction through feeling heard but for POC participants it did not – thus an asymmetric pattern.

As the sample size for POC participants was extremely small, it is the most likely reason for this asymmetric pattern. If that is not the case, one interpretation of this

could be that the non-significant moderated mediation for POC participants is that their satisfaction is affected by group composition but not through the mechanism of feeling heard. This could reflect literature that suggests other forms of exclusion in deliberation, beyond feeling heard, are at play - such as context and decision rules (Abdel-Monem et al., 2010).

A different interpretation is that it could suggest that POC participants did not feel significant differences in feeling heard between the two-group composition possibly because that feelings of marginalisation are less sensitive to group composition variation alone. For satisfaction, there was likely a ceiling effect in the homogenous composition (M = 6.38, SD = 0.51, scale maximum = 7). The narrow standard deviation indicates that scores are heavily clustered close to the top of the scale (between 5.9 and 6.9) thus a ceiling effect.

These findings speak directly to the normative stakes raised at the outset of this paper. The exclusion of POC from deliberation, whether through underrepresentation at the recruitment stage or through dynamics that suppress contribution once participants are seated, undermines both the procedural legitimacy and substantive justice of public participation processes (Paulis et al., 2024; Perlaviciute, 2022). The current findings suggest that simply recruiting diverse participants is insufficient: if the deliberation experience itself is less satisfying for all participants in diverse conditions, and if the mechanism through which group composition affects satisfaction differs by race, then the design of the deliberation process itself becomes a critical lever. Procedural legitimacy requires not only that diverse voices are present, but that they experience the process as fair and feel genuinely heard. The asymmetric pattern observed here, wherein the mediated pathway through feeling heard was operative for

White but not POC participants, suggests that current non-facilitated formats may be structurally better suited to White participants' deliberative experiences, raising questions about whose comfort the default design serves.

Limitations and Weaknesses

The study employs a within-subjects design which meant that participants experienced both conditions. This order of which group composition they were in could influence results or carry over into how they perceived the second deliberation round. This is because the deliberations are repeated so familiarity may occur from having completed the task already, shifting the expectations for the second deliberation round. This study switched the order but did not achieve perfect symmetry, hence order effects may be in play. Thus, order effects should be investigated further to see if the results are impacted.

A binary racial identification system, while necessary for analysis, removed the nuance from racial groups that may be relevant to and affect deliberative experiences. Experiences across POC participants are not universal nor uniform and intersecting characteristics such as ethnicity, migration status, language, gender, and experiences of discrimination may shape their deliberation dynamics, interactions, and experiences differently (Abdel-Monem et al., 2010). Further, skin-tone was the visual-proxy for strangers in the group to categorise members as same or other, which can differ based on the degree of melanin present in the skin and for those who consider themselves as White-passing. POC backgrounds are diverse and can differ in their relationships to racial power structures, the specific forms of marginalisation they may encounter in group settings, as well as their status and visibility as a minority in the Dutch context.

Future work should use more granular categories – for example like how Greenwood et al. (2014) did[2] with subgroups such as Black African, Black Caribbean, Asian Indian and Asian Pakistani.

The deliberation scenario involved university budget cuts affecting a range of programmes including but not limited to race-targeted programmes. I can't rule out demand characteristics once in the room as, the scenario itself primed racial awareness. This is a limitation, and future research could consider post-deliberation awareness checks.

The largest limitation of the study was the sample (N = 39). It was insufficiently large to provide sufficient statistical power. The number of POC participants was very limiting, particularly when it came to organising deliberation groups on the day after last minute changes – two POC participants were the only POC of that session and so had to participate in two diverse groups and no homogenous groups and vice versa for two non-POC participants to balance it out (resulting in POC = 9 and non-POC = 30 for statistical analysis).

A major weakness of the study was the lack of POC participants for the moderation analysis. Recruitment efforts included advertising in online channels as well as physical posters at bus stops and at university buildings. In fact, 41 messages encouraging sign up were sent to individuals and across 15 unique groups.

Although the study was underpowered, the significant mediation result suggests a potentially robust effect that warrants replication with a larger sample, where a significant moderated mediation may be detected. With the current study, the non-

[2] Note that Greenwood et al. (2014) looked at ethnic groups comparing relative homogeneity and heterogeneity (more or less so).

significant result of H2b should be interpreted cautiously rather than as evidence for the absence of moderation. When examining the individual pathways in the moderated mediation, a racially asymmetric experience is hinted. Further investigation is required before any conclusions can be drawn.

Additional limitations include the use of a student sample, which limits generalisability to broader public participation contexts. Students represent a relatively homogenous demographic and may interact with one another and deliberate differently to the wider public. In this study, 24 were recruited via SONA which is a first-year psychology student platform, so the majority of the sample (56%) likely shared an education level or background and were similar in age (88.4% of the sample were between 16-25 years old). It is shown that university students and younger people are more open-minded than older adults and those without tertiary education, which may be reflected in their deliberation dynamics. Indeed, focus group literature (Greenwood et al., 2014; Roller & Lavrakas, 2015) study shows that sharing similar characteristics or discovering shared experiences, can increase comfort to share their thoughts with each other.

Although this study operated with a racial divide for group composition, with successful manipulation, participants were similar in other characteristics too, including gender (62.8% female) and location (the study was in-person thus participants had to be able to reach the Groningen area feasibly). This may be a contributing factor to the overall high results in feeling heard and satisfaction.

Self-selection bias may have influenced the results of the study also, as individuals who decided to participate may be more civically minded, deliberation-

friendly, or interested in participating more than the general population, potentially inflating satisfaction levels.

The study is further limited by using an artificial deliberation scenario. The scenario was centred on university budget cuts and lacked direct connection to the study's overarching focus on environment and climate change policy. Participants were not deliberating on environmental issues, limiting the ecological validity. Moreover, in climate and environmental settings, the role of ecological values and biospheric values becomes activated (Perlaviciute, 2025) which may not fully replicate the dynamics of real-world climate deliberation.

Future Research

Future research should seek to address these limitations and weaknesses by recruiting more diverse and representative samples, including those from different age groups, educational background, and environmental experiences. Communication channels with more direct access to the POC community should be utilised to reach more diverse audiences than traditional recruitment methods.

Additionally, studies should employ strategies to minimise self-selection biases, such as stratified sampling or recruiting participants through civic lotteries. Given the current sample was drawn from a primarily university student population, replicating the study with a more representative sample would provide a stronger basis for generalising results.

Future studies should include deliberations within the context of climate change that are relevant to participants, for example local climate adaptation solutions or local emissions targets. This will strengthen the ecological validity of the study and align

findings more closely for more meaningful insights in the context of environmental governance and climate change.

Broader Implications

Both POC and White participants reported higher satisfaction in homogenous group compositions, significant for the non-POC participants, reinforcing that diverse and mixed group compositions, despite the representation value, can create dynamics that undermine deliberation quality for all participants.

This creates tension for designing inclusive public participation as diversity is necessary for legitimacy and representative outcomes (Paulis et al., 2024; Perlaviciute, 2022), yet it may reduce the subjective quality of deliberative experiences in non-facilitated settings.

Experimenting with non-facilitated deliberations was an intentional choice to isolate the effects of group composition. Findings inform whether non-facilitated deliberations are effective at balancing satisfaction and participation of members, compared to professional facilitators. The practical implications of these findings point to the idea that facilitation may be necessary to counteract the lower satisfaction levels found in diverse groups.

On the other hand, these findings could suggest an extra step is needed to support diverse participation: deliberate in smaller homogenous groups then share verdicts and deliberate further at a larger scale - homogeneity within small deliberations, and diversity across the deliberative groups. This way the benefits of homogenous deliberations are maintained whilst still enabling diversity and representation.

Conclusion

This study investigated whether racial group composition – homogenous or diverse – affects satisfaction in non-facilitated small group deliberations, whether feeling heard mediates this relationship and if this mediation is moderated by race. Drawing on public participation and focus group literature, this study addressed a gap in understanding the micro-level dynamics of non-facilitated deliberation with regard to racial group composition. With a within-subjects two-instance repeated measures design (N = 39), participants deliberated in a homogenous and diverse group composition condition, reporting validated measures of feeling heard and satisfaction following each. Results showed participants recording significantly higher satisfaction levels in homogenous groups than diverse.

Results also revealed feeling heard as partially mediating the relationship between group composition and satisfaction. Checking if the mediation was moderated was not found at the moderated mediation index level, however conditional indirect effects revealed a racially asymmetric pattern where the mediation path was significant for non-POC participants but not POC participants. This finding requires caution in interpretation due to the underpower of the POC sub-sample (N = 9) and deserves further investigation.

Findings reveal an underlying tension in public participation deliberative design: while diversity theoretically acts as a proxy for perceived legitimacy in public participation, it may reduce subjective experiences and quality of deliberation experiences, particularly in non-facilitated contexts. The implication is such that facilitation or design alternatives that allow homogenous sub-group deliberations

before diverse integration, may be required to realise the benefits of diverse participation without foregoing deliberation quality and to ensure everyone, including minorities, can speak up.

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Appendix A

Programmes

Centre for Social Safety

A safe, confidential space for students and staff to seek support around harassment, intimidation, racism, sexism, or boundary-crossing behaviour. The Centre for Social Safety (CSS) offers trauma-informed guidance, peer support, and prevention training. With over 60 Active Bystander training sessions held, we empower our community to speak up, step in, and support others.

Diversity, Equity and Inclusion Team

The Diversity, Equity, and Inclusion (DEI) team aims to make students and staff feel at home at the university and experience a sense of belonging, regardless of culture, gender, ethnicity or other differences. They drive an active diversity and inclusion policy that ensures to create equal opportunities as well as a stimulating and inclusive work and study environment for everyone.

Elite Sports Student Grant

Many top athletes are studying at the UG. The Elite Sports Student Programme helps them to combine their studies with their sport. Students with an elite sports student status are also eligible for financial compensation: the elite sports student grant, a joint scheme offered by Hanze UAS and the University of Groningen.

The Groningen University Institute for Drug Exploration (GUIDE)

GUIDE performs and stimulates innovative and drug-oriented research. These new insights lead to the development of new drugs and/or treatment options or optimization of existing therapies. The research revolves around central themes like healthy ageing, personalized medicine, and suicide prevention – a concern of great importance, particularly given the rising mental health challenges observed among younger populations.

Student Service Centre

Many students encounter stress, identity struggles, anxiety, or depression during their studies. The Student Service Centre (SSC) supports students through study-related and psychological challenges. The SSC has launched a therapeutic app to provide education, resources, and access to therapists and specialized treatment programs.

Diversity and High Potential Scholarship

The Diversity and High Potential Scholarship is a merit-based scholarship for underrepresented racial or ethnic groups in the Netherlands. It provides the opportunity for students from minority backgrounds to pursue academia and fulfil their potential.

Appendix B

As recently highlighted in the media and during protests and strikes, the Dutch government is reducing funding for the education sector. This means that universities, including the University of Groningen (RUG), will receive less financial support.

On a separate page you will find a list of six programmes at the University of Groningen. Quickly read through their descriptions and **identify two programs that you would <u>protect</u>** from budget cuts in priority, and **two programs that you would <u>cut</u>** from fundings in priority. Each programme uses an equal number of resources (e.g. money).

a. In the following table, indicate which **two (2) programs you want to cut** (reduce fundings) in priority, which **two (2) programs you want to protect** (prioritise fundings) in priority and two (2) programs to leave as "neutral".

Here we are asking for **<u>your own opinion</u>**. There is no right or wrong answer, just pick what feels right to you.

	Cut (choose 2)	Protect (choose 2)	Neutral (choose 2)
Centre for Social Safety	❑	❑	❑
Diversity, Equity and Inclusion Team	❑	❑	❑
Elite Sports Student Grant	❑	❑	❑
The Groningen University Institute for Drug Exploration	❑	❑	❑
Student Service Centre	❑	❑	❑
Diversity and High Potential Scholarship	❑	❑	❑

Appendix C

Manipulation Check

On a scale from 1 (Strongly disagree) to 7 (Strongly agree), please indicate how much you agree with the following statements.

	Strongly Disagree (1)	2	3	Neutral (4)	5	6	Strongly Agree (7)
I felt similar to other members of this group	❑	❑	❑	❑	❑	❑	❑
I identify with this group	❑	❑	❑	❑	❑	❑	❑
I had a large influence on decision-making in this group	❑	❑	❑	❑	❑	❑	❑

Feeling Heard

On a scale from 1 (Strongly disagree) to 7 (Strongly agree), please indicate how much you agree with the following statements.

During the discussion…

	Strongly Disagree (1)	2	3	Neutral (4)	5	6	Strongly Agree (7)
I could say what I really wanted to say	❑	❑	❑	❑	❑	❑	❑
Others in the group were more concerned with themselves than with what I said	❑	❑	❑	❑	❑	❑	❑
Others listened to what I said	❑	❑	❑	❑	❑	❑	❑
Others tried to put themselves in my shoes	❑	❑	❑	❑	❑	❑	❑
Others were insensitive to my thoughts and feelings	❑	❑	❑	❑	❑	❑	❑
Others treated me with respect	❑	❑	❑	❑	❑	❑	❑
We understood each other	❑	❑	❑	❑	❑	❑	❑

Satisfaction

On a scale from 1 (Strongly disagree) to 7 (Strongly agree), please indicate how much you agree with the following statements.

	Strongly Disagree (1)	2	3	Neutral (4)	5	6	Strongly Agree (7)
I was satisfied with the quality of the group discussion	❑	❑	❑	❑	❑	❑	❑
I was satisfied with the group's decision	❑	❑	❑	❑	❑	❑	❑
I was unhappy with the other group members	❑	❑	❑	❑	❑	❑	❑
I was satisfied with the overall quality of the group effort	❑	❑	❑	❑	❑	❑	❑
I would be willing to work with this group again	❑	❑	❑	❑	❑	❑	❑