What does it take to take part? Exploring the Impact of Group Composition on Group Dynamics: The Mediating Roles of Perceived Efficacy and Ingroup-prototypicality

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Abstract

The urgent need to mitigate climate change requires a shift to sustainable energy systems, with renewable energy communities (RECs) playing a vital role. Despite their benefits, RECs are largely dominated by high socioeconomic status members, highlighting the need for broader socioeconomic diversity. This study examines the impact of group homogeneity on identification and engagement in RECs, focusing on the mediating roles of perceived group efficacy and in-group prototypicality. Using a one-factorial design, participants were provided a questionnaire with vignettes describing energy communities with different socioeconomic compositions and differences in the group's homogeneity. Although no significant differences in willingness to join were found, valuable insights emerged regarding the psychosocial dynamics of group participation. These findings can guide policy actions to integrate diverse socioeconomic groups into RECs and promote decentralised, just, and sustainable energy systems.

Keywords: group homogeneity, group dynamics, participation, group efficacy, ingroup-prototypicality, socioeconomic diversity, renewable energy communities

What does it take to take part? Exploring the Impact of Group Composition on Group Dynamics: The Mediating Roles of Perceived Efficacy and Ingroup-prototypicality

Global warming has unequivocally been linked to human activities causing greenhouse gas emissions (IPCC, 2023). In the act of mitigating climate change impacts by decreasing carbon emissions, renewable energy sources have been identified as a major contributor to achieving net zero by 2050 (Tsiropoulos et al., 2020). Renewable energy communities (RECs) represent an opportunity for end-consumers to participate and contribute to the transition towards a decentralised sustainable energy system by involving them in the energy generation, trading, and consumption processes (Reis et al., 2021). Members benefit in a range of ways, e.g., from financial savings, trust and cohesion within the community, and environmental benefits, such as producing and consuming renewable energy and advancing the sustainable energy transition (Caramizaru & Uihlein, 2020; Van Bommel & Höffken, 2021). It is estimated that by 2050, the amount of households involved in renewable energy production could be 50%, of which about 37% could come through RECs (Abada et al., 2020).

In order for RECs to grow and contribute to more equitable and democratic energy systems (Hamann et al., 2023; Hoicka et al., 2021), people with varying socioeconomic status need to be involved in such communities (Broska et al., 2022; Hamann et al., 2023). Currently, energy communities attract a limited demographic, predominantly "rich or middle-class, white, retired men" (Van Bommel & Höffken, 2021, p.6). This specific group of people has the monetary, time, and educational resources it takes to successfully establish energy communities and decouple from the traditional energy market. However, understanding why individuals from various socioeconomic backgrounds choose to join RECs is necessary to expand participation. So far, the influence of the socioeconomic status of RECs members on participation is not well understood. This study aims to address this gap by investigating how group homogeneity influences involvement in RECs, taking into consideration the mediating roles of perceived group efficacy and ingroup-prototypicality.

Theoretical background

Any group consisting of several members can be perceived as either homogeneous (similar) or heterogeneous (diverse). "Group homogeneity" – as an umbrella term summarising the two – refers to the degree to which individuals within a group share similar characteristics, such as age, gender, race, ethnicity, or socioeconomic status (Hennink, 2007). Homogeneous groups, compared to heterogeneous groups, do not only differ in the distribution of their members' characteristics but also in the level of entitativity they hold. Entitativity describes the degree to which a group is perceived as a coherent unit (Campbell, 1958). Homogeneous groups are perceived as more coherent, or having higher entitativity, than heterogeneous groups. This is mainly due to the fundamental property of entitativity which postulates that groups are perceived more strongly as a unit when group members are similar (Lickel et al., 2000). A group's composition can have varying effects on people's tendency to identify with and become part of the group. In the following we are going to elaborate on the differences between heterogeneous and homogeneous groups regarding identification with them.

Group identification - the psychological process by which individuals understand their identity based on their membership in a particular group and view themselves as similar to other group members (Fisher & Wakefield, 1998, Leach et al., 2008) - plays an important role in people's decision-making on whether to join a group. For groups to grow and achieve their goals, they are dependent on recruiting new active members. These potential members thus must show a willingness to join the group and a willingness to participate in it to further the group's goals. Identification is linked to willingness to join and willingness to participate in such that participation is more likely shown by group members that identify more with the group (Kelly, 1993).

If we look at the differences that heterogeneous groups elicit compared to homogeneous groups in terms of identification, an ambiguous picture emerges. Research tends to suggest that homogeneous – and thus more coherent – groups lead to higher levels of identification (Leach

et al., 2008; Postmes et al., 2013), for instance, if members are demographically similar (Hennink, 2007).

However, identification has been found to possibly be high in heterogeneous groups as well, when the social identity is formed inductively (Jans et al., 2012). In their study, Jans and colleagues instructed groups to create a team shirt by either copying a design provided by the researchers (deductive social identity formation) or create a team design by contributing an individual part to the design (inductive social identity formation). The condition in which the members contributed individually to the formation of the group design resulted in stronger group identification in comparison to the deductively formed group.

Further, the tendency to identify with more heterogeneous groups is related to an individual's personality traits. The more people value openness to change and the higher they score on self-transcendence measures, the more positive are their attitudes towards diversity (Sawyerr et al., 2005). Subsequently, the more people value diversity in e.g., the workplace, the higher their identification with a group heterogeneous in its characteristics (Van Knippenberg et al., 2007). Constructing hypothetical renewable energy communities as either homogeneous or heterogeneous in their members' socioeconomic status (SES) is thus expected to lead to varying levels of identification. Hence, different assumptions for the relationship between group homogeneity and group identification are possible. Next, two processes that are assumed to mediate the relationship are introduced.

Whether people identify with a group and would want to become part of it depends on a variety of additional factors. Two pathways that we are aiming to investigate here are first, the social pathway via the perception of being a person that fits within the group (perceived ingroup-prototypicality) and second, the instrumental pathway via the perception that the group can achieve its goals (perceived group efficacy). Both pathways are firstly investigated regarding their relationship to group composition and subsequently regarding their relationship to identification and group engagement.

Perceived ingroup-prototypicality describes the extent to which self-stereotyping leads to the perception of similarity between oneself and other prototypical members of a group (Leach et al., 2008; Postmes et al., 2013). Self-stereotyping is the process by which individuals compare themselves to average or prototypical group members and identify those traits that are convergent with these prototypical members (Leach et al., 2008).

In homogeneous groups with high similarity among group members, self-stereotyping and thus peoples' perceived ingroup-prototypicality should be particularly strong if an individual possesses the same characteristics as the average group member (Leach et al., 2008). Homogeneous groups offer a single, unidimensional prototype which makes it easier for individuals who fit this prototype to perceive themselves as a prototypical group member.

In contrast, heterogeneous groups offer a broader range of prototypes, as diversity among members creates a multitude of points for comparison. This means that more members can be seen as typical, since the range of prototypical characteristics is widened (Hewstone et al., 1992). Diversity among group members thus offers a broader variety of group prototypes, which in turn should allow more individuals to perceive themselves as fitting within the group, compared to the unidimensional and hence restricted prototype offered by homogeneous groups. We thus expect heterogeneous groups to elicit higher levels of perceived ingroup-prototypicality.

The relationship between perceived ingroup-prototypicality and identification has been described in differing terms. While Leach et al. (2008) view ingroup-prototypicality as a component of identification, it has also been assumed to be a precursor to identification. Both assumptions support the notion that people are more likely to identify with a group when they perceive themselves to embody contextually relevant characteristics of the group, i.e. are a prototypical group member (Hoffmann et al., 2020).

While the pattern for ingroup-prototypicality points towards heterogeneous groups eliciting higher levels of perceived ingroup-prototypicality, the pattern for perceived group

efficacy shows the opposite tendency. Group efficacy is the belief that a group of individuals can work together effectively to accomplish a shared goal (Bandura, 1997). In the example of this study, perceived group efficacy relates to the belief of the group members that the community is capable of establishing and managing a renewable energy community. Even though Yam et al. (2018) found that heterogeneous groups were not perceived to be significantly less efficacious than homogeneous groups in a public goods dilemma, there is evidence that the diverse composition of groups contributes to reduced actual group efficacy. For example, Hentschel and colleagues (2013) investigated the effect of perceived team diversity in work teams on conflict within the team. They found a positive relationship between perceived team diversity and relationship conflict. This finding is supported by a review of 88 articles on diversity-consequence relationships (Jackson & Joshi, 2011). The review further revealed internal team communication to be negatively influenced by demographic diversity. Therefore, a heterogeneous group composition indicates more intergroup conflict, which makes the perception of such groups with diverse members as less efficacious compared to groups with similar members more likely.

When deciding to become part of a group, not only social factors become relevant, but also instrumental factors come into play. We like to participate in groups that are likely to achieve goals relevant to ourselves (Van Zomeren et al., 2008). This is in line with the finding that the perception of a group's potential can play a significant role in the decision to want to join a group (Xie et al., 2020). The positive relationship between collective efficacy and group performance (Stajković et al., 2009) has been established in a variety of contexts such as learning outcomes of public-school students, sports team effectiveness, reduced neighbourhood crime, and obesity (Goddard & Salloum, 2011). Thus, in the context of the possibility of joining a renewable energy community, perceptions of the community as efficacious should lead to higher identification and engagement in the community.

Since RECs are dependent on the active involvement of their members to reach their economic, social, and environmental goals (Gjorgievski et al., 2021), identification alone is an insufficient predictor of the group's success. Thus, though identification and engagement constitute distinct theoretical constructs, willingness to join and willingness to participate in combination with identification constitute the outcome measure of identification and engagement in the energy community. This decision is based on the strong interlinkage of identification and collective action (Kelly, 1993).

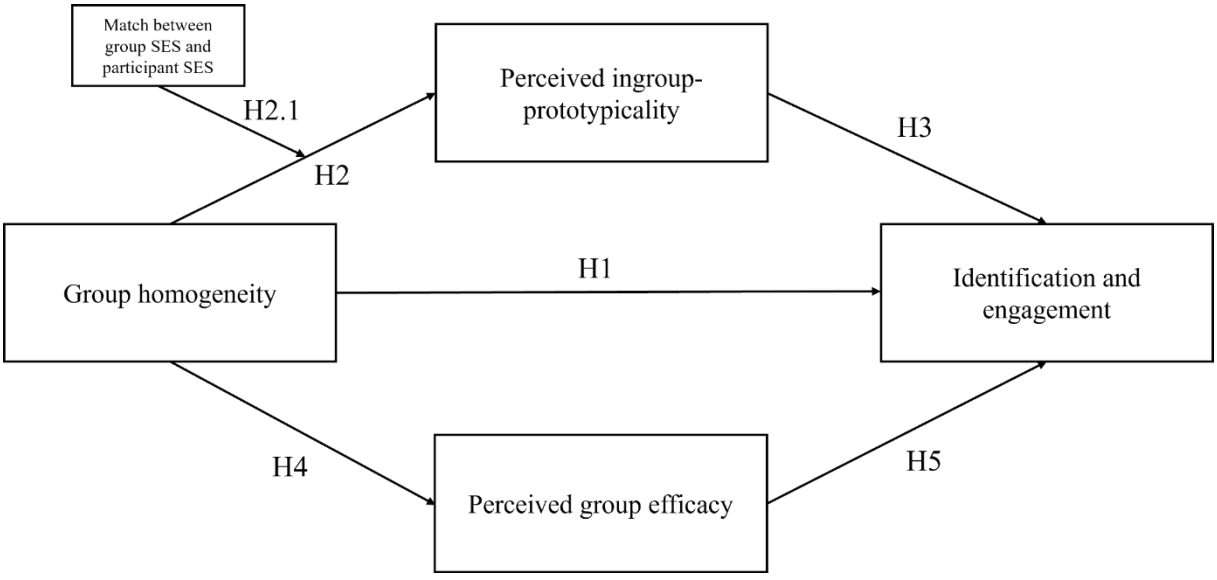
Research Questions and Hypotheses

Based on the literature, a parallel mediation model was developed (see Figure 1). It aims to depict the research questions the study aims to investigate experimentally:

How does group homogeneity influence involvement in the energy collective? What role do perceived group efficacy and perceived ingroup-prototypicality play?

Figure 1

Parallel mediation model for identification and engagement in energy communities



H1: There are significant variations in identification and engagement in the community based on levels of homogeneity or heterogeneity. [1]

[1]Since the literature does not allow a clear conclusion about the direction of the effect, H1 is formulated as an undirected hypothesis.

H2: Perceived ingroup-prototypicality will be higher in the heterogeneous mixed SES condition than in both homogeneous SES conditions.

H2.1: Perceived ingroup-prototypicality will be higher in both homogeneous SES conditions compared to the heterogeneous mixed SES condition if the SES participants report and the SES the homogeneous communities are perceived to have correspond.

H3: Perceived ingroup-prototypicality positively explains identification and engagement in the collective.

H4: Perceived group efficacy will be higher for both homogeneous SES conditions compared to the heterogeneous mixed SES condition.

H5: Perceived group efficacy positively explains identification and engagement in the collective.

Understanding how a group's composition affects identification and engagement with the group through perceived ingroup-prototypicality and perceived group efficacy has important implications for strengthening inclusivity and participation within groups such as renewable energy communities. By illuminating these dynamics, this research contributes to the broader field of social psychology and provides practical insights for promoting group cohesion and effectiveness. To test these hypotheses, a questionnaire was developed in which group homogeneity and the group members' socioeconomic status were manipulated in the vignette given to the participants.

Method

Ethics approval

The experimental study was exempt from review by the Ethics Committee of the Faculty for Behavioral and Social Sciences, University of Groningen because it met the guidelines set by the Ethics Committee to fast track the review procedure. All documents necessary were created and registered with the Ethics Committee and the guidelines set by the ECP were adhered to. Based on a checklist developed by the EC-BSS at the University of Groningen, the

study was exempt from full ethical review. For the current study, the Data Management Plan and Ethics Protocol as required by the University of Groningen were followed.

Sample

Participants were recruited via the SONA-practicum pool of first-year psychology students who must earn credits by participating in studies. Participation was voluntary and participants received course credits as compensation for participating. All students with a 1st year SONA-practicum account were eligible for inclusion as they are over 16 years old and students at the RUG. An a priori power analysis was conducted in G*power (Version 3.1.9.7; Faul et al., 2007) for sample size estimation. With a significance criterion of $\alpha = .05$ and power = .80, the minimum sample size needed to obtain a medium effect size (*Cohen's f* = .25) is *N* =158 (*N* = 159 for balanced groups) for an *F*-test to test H1. A total of 169 participants were recruited. Four participants had to be removed from the final sample due to an indication in the data quality check that their data should not be used. The data quality check asked participants to indicate whether they feel that they have paid attention during the questionnaire and responded truthfully and thus their data should be included by the researchers. Nine participants were removed because they did not continue the questionnaire after giving their informed consent. The final sample used for analysis thus consisted of 156 participants. Participants' estimated socioeconomic status for themselves averaged around *M* = 4.72, *SD* = 1.33 and for their families around *M* = 4.06, *SD* = 1.46 on the 10-step MacArthur Scale of Subjective Social Status – Adult Version. Participants mostly categorised themselves as standing on the fourth (35.3%) or fifth (25.6%) rung of the ladder. The distribution of the participants to the three conditions showed to be balanced with 34% in the homogeneous high SES condition, 31,4% in the homogeneous middle SES condition, and 34,6% in the heterogeneous mixed SES condition.

Procedure and Design

From SONA, participants were guided to the survey in Qualtrics. Participants were first presented with general information about the study and the informed consent form. Withdrawal

from the study at any point without giving reasons or receiving negative consequences was possible. Information on the manipulation of the community's SES was withheld to ensure a successful manipulation.

The design used to test the hypotheses is a one-factorial design with three conditions. Participants were randomly assigned to either the homogeneous high SES condition, the homogeneous middle SES condition, or the heterogeneous mixed SES condition. First, all participants were asked to read a brief introduction explaining what renewable energy communities are and asking them to imagine having moved to a neighbourhood in which an energy community exists. Thereafter, they received a vignette, describing an energy community with either homogeneous or heterogeneous socioeconomic status. The manipulation was followed by a questionnaire containing scales on the measures listed below. At the end of the questionnaire, participants were presented with a quality check asking whether they completed the survey truthfully. Lastly, they were debriefed and guided back to SONA where they received their credits. The survey flow can be found below in Figure 2.

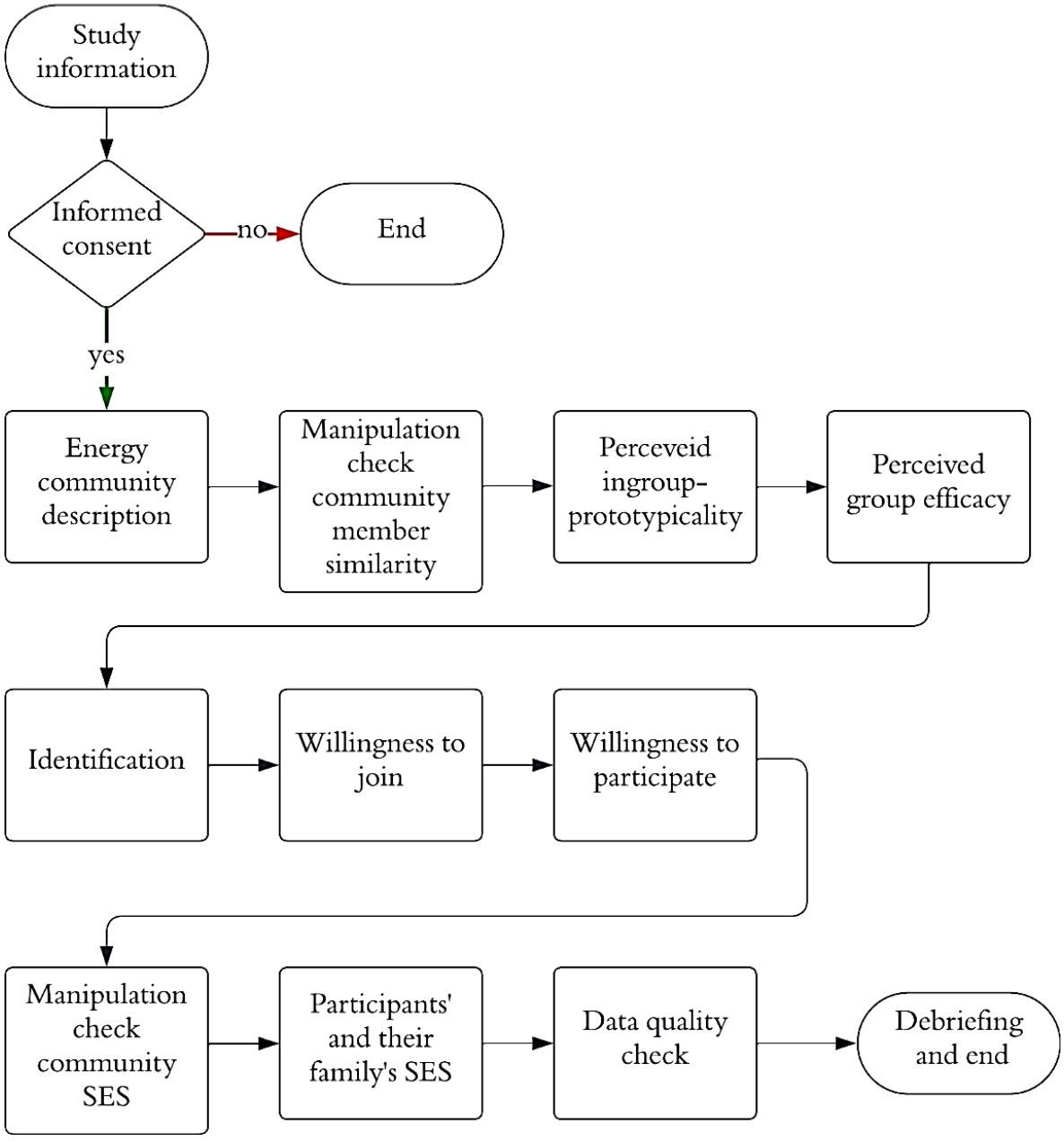
Measures

Manipulation

The energy community members' SES was manipulated by altering the description of the level of education, income, and occupation of the community members. This manipulation was chosen based on the composition of SES of education, income, and occupation (Baker, 2014). Following the vignette, a reinforcement was provided. Descriptions of the vignettes and the reinforcement can be found in Table 1. Participants were given forty seconds to fill out a text box with the similarities or the differences, respectively they imagined existing among community members. This reinforcement was based on Ziegler (2021) who argued that open-ended manipulation checks better capture participants' attention compared to close-ended questions.

Figure 2

Survey flow



Note. The survey flow was created using Lucidchart (Lucid Software Inc., n.d.)

Table 1

Descriptions of the vignettes and the reinforcement

Condition	Vignette	Reinforcement
Heterogeneous mixed SES	The community at hand consists of 50 member households. The members of the community **do not have a lot in common**. For example, they have different educational backgrounds and a range of jobs with differing wages like doctors, cashiers, CEOs, mechanics, IT managers, or legal secretaries.	Before continuing with the questionnaire please take a few moments to imagine the members of the described community as vividly as possible. Think about the **differences among the members.** When you have a clear picture in mind, write your thoughts down in a few sentences. To make sure that you take enough time, the "continue" button will start showing in about a minute.
Homogeneous high SES	The community at hand consists of 50 member households. The members of the community **have a lot in common**. For example, they are all highly educated people with high-paying jobs like doctors, lawyers, CEOs, IT managers, or senior engineers.	Before continuing with the questionnaire please take a few moments to imagine the members of the described community as vividly as possible. **Think about the similarities among the members.** When you have a clear picture in mind, write your thoughts down in a few sentences. To make sure that you take enough time, the "continue" button will start showing in about a minute.

Homogeneous middle SES	The community at hand consists of 50 member households. The members of the community **have a lot in common**. For example, they are all mid- to well-educated people, with mid- to well-paying jobs like nurses, legal secretaries, cashiers, technical support staff, or mechanics.	Before continuing with the questionnaire please take a few moments to imagine the members of the described community as vividly as possible. **Think about the similarities among the members.** When you have a clear picture in mind, write your thoughts down in a few sentences. To make sure that you take enough time, the "continue" button will start showing in about a minute.

Materials

Manipulation Check

To check whether participants perceived the communities' composition as intended, two items measured the perceived similarity among the members of the energy community (e.g., "Members of the energy community have a lot in common with each other"). The items were adapted from the In-Group Homogeneity subscale from Leach et al.'s (2008) In-Group Identification scale and could be answered on a 7-point Likert scale ranging from 1 = "Strongly Disagree" to 7 = "Strongly Agree". The mean perceived similarity score was for the heterogeneous mixed SES condition M = 2.91, SD = 1.26, for the homogeneous high SES condition M = 5.46, SD = 0.73, and for the homogeneous middle SES condition M = 5.51, SD = 0.99. Spearman's Rho for these items was $rho(154) = 0.85$, $p < .001$, indicating a strong positive correlation and thus good reliability (Eisinga et al., 2013; Schober et al., 2018).

To examine whether participants perceived the communities' SES as intended, the MacArthur Scale of Subjective Social Status – Adult Version (Adler et al., 2000) was administered as the third last question at the end of the questionnaire. This measure consists of a 10-rung ladder meant to represent a community of choice. At the top of the ladder, people are

represented who are the best off and at the bottom the people who are worst off. By choosing a number, participants indicated where they thought the average member of the described energy community stands on the ladder compared to the Dutch population. The mean perceived SES score was for the heterogeneous mixed SES condition M = 4.74, SD = 1.18, for the homogeneous high SES condition M = 3.70, SD = 1.31, and for the homogeneous middle SES condition M = 4.06, SD = 1.11. Participants in the homogeneous high SES thus perceived community members to have the lowest SES score.

Perceived ingroup-prototypicality

Following the manipulation check participants were asked to indicate on three items to what degree they perceived themselves to be similar to the members of the described energy community (e.g., "I am similar to the average member of the energy community."). The used items are adapted forms of the Leach et al.'s (2008) subscale of Self-Definition and could be answered on a 7-point Likert scale ranging from 1 = "Strongly Disagree" to 7 = "Strongly Agree". The mean perceived ingroup-prototypicality score was for the heterogeneous mixed SES condition M = 3.64, SD = 1.18, for the homogeneous high SES condition M = 3.64, SD = 1.13, and for the homogeneous middle SES condition M = 3.93, SD = 1.14. All participants thus estimated their ingroup-prototypicality to fall around the midpoint of the scale. Cronbach's α for this scale was α = .86, indicating good reliability (George & Mallery, 2003).

Perceived group efficacy

To test the group efficacy participants perceived the hypothetical energy community to have, a set of abstract and concrete group efficacy measures was administered.

Specific measures of group efficacy. First, participants received three statements describing situations that commonly arise in energy communities (e.g., "collectively generate energy"). On a 7-point Likert scale ranging from 1 = "Highly certainly **can't** do" to 7 = "Highly certainly **can** do" participants indicated how well they thought the community could perform the respective tasks. The item structure was based on Bandura's (2006) guide for constructing

efficacy scales and content was taken from Caramizaru and Uihlein's (2020) list of activities in which energy communities conventionally engage. Cronbach's α for the scale was α = .79, indicating good reliability (George & Mallery, 2003).

General measures of group efficacy. Thereafter, participants received eight more statements for which they should indicate how likely they thought it adhered to the members of the energy community (e.g., "The energy community can advance an energy transition that is sustainable as a group.") on a 7-point Likert scale ranging from 1 = "Extremely Unlikely" to 7 = "Extremely Likely". These items were adapted from Goedkoop et al. (2023) and Köhler et al. (2023). Cronbach's α for the scale was α = .81, indicating good reliability (George & Mallery, 2003).

For analysis, an overall mean of the specific and general group efficacy measures was created. The mean perceived group efficacy score was for the heterogeneous mixed SES condition M = 5.31, SD = 0.70, for the homogeneous high SES condition M = 5.52, SD = 0.62, and for the homogeneous middle SES condition M = 5.56, SD = 0.62. Hence, across all conditions, participants perceived the community's efficacy to be rather high.

Identification and engagement in the energy community

The dependent variable "identification and engagement in the energy community" is composed of the three individual variables identification, willingness to join, and willingness to participate. All ten items were measured on a 7-point Likert scale ranging from 1 = "Strongly Disagree" to 7 = "Strongly Agree".

Identification. Identification was measured via four items (e.g., "I identify with the members of the energy community.") adapted from Postmes et al.'s (2013) suggestion for a four-item identification measure. The mean identification score was for the heterogeneous mixed SES condition M = 4.20, SD = 1.03, for the homogeneous high SES condition M = 3.80, SD = 1.34, and for the homogeneous middle SES condition M = 3.86, SD = 0.99. Identification

showed thus to be highest for the heterogeneous mixed SES condition. Cronbach's α for the scale was α = .83, indicating good reliability (George & Mallery, 2003).

Willingness to join. Willingness to join the energy community was measured with two items (e.g., "I would consider to join the energy community in my neighborhood") adapted from Sloot and colleagues (2019). The mean WTJ score was for the heterogeneous mixed SES condition *M* = 4.64, *SD* = 1.41, for the homogeneous high SES condition *M* = 4.46, *SD* = 1.53, and for the homogeneous middle SES condition *M* = 4.82, *SD* = 1.31. On average, participants indicated their WTJ to be a little higher than the scale average. Spearman's Rho for these items was *rho*(154) = 0.62, $p < .001$, indicating a moderate positive correlation and thus good reliability (Eisinga et al., 2013; Schober et al., 2018).

Willingness to participate. Willingness to participate was measured via four items (e.g., "I personally would like to get involved as a member of the energy community.") based on the intention measure used by Masson and Fritsche (2018). The mean WTP score was for the heterogeneous mixed SES condition *M* = 4.54, *SD* = 1.20, for the homogeneous high SES condition *M* = 4.25, *SD* = 1.59, and for the homogeneous middle SES condition *M* = 4.47, *SD* = 0.98. On average, participants indicated their WTP to be a little higher than the scale average. Cronbach's α for these items was α = .92, indicating excellent reliability (George & Mallery, 2003). A full list of items can be found in Appendix A, Table A1.

Demographics

Before finishing the questionnaire and being debriefed, participants were asked to indicate their family's and their own perceived socioeconomic status on the MacArthur Scale of Subjective Social Status – Adult Version (more detailed description under manipulation check). Participants indicated their own and their family's perceived SES in comparison to the Dutch population on a 10-rung ladder. The mean perceived SES for themselves (their families) was for the heterogeneous mixed SES condition *M* = 4.74, *SD* = 1.44 (*M* = 4.00, *SD* = 1.43), for the homogeneous high SES condition *M* = 4.85, *SD* = 1.29 (*M* = 4.30, *SD* = 1.51), and for

the homogeneous middle SES condition $M = 4.55$, $SD = 1.26$ ($M = 3.86$, $SD = 1.41$). Participants thus estimated their own and their family's SES to fall around the midrange of the 10-rung ladder.

Preliminary Analyses

The data was initially analysed using Microsoft Excel (Version 2405). Here, the dataset was checked for missing values. Data cleaning was performed, and the remaining data was loaded into jamovi (Version 2.3). Two reverse coded items were transformed and means for the scales were created. Additionally, a "group" variable was created for the three conditions.

The variables' distribution and normality were investigated for violation of the underlying test assumptions. Due to a tendency towards skewness and platykurtosis and significant violation of normality at the $p < .001$ level in four instances, both Fisher's and Welch's one-way ANOVA were employed for analysis to account for robustness against violations of normality and homogeneity of variances (Blanca et al., 2017; Lix et al., 1996). Because both procedures yielded the same results, Fisher's one-way ANOVAs are reported in the main body while Welch's one-way ANOVAs can be found in Appendix B, Tables B1-B4. Before conducting the analyses to test the individual hypotheses, a one-way ANOVA and post-hoc tests were conducted to assess whether the manipulation was successful. To test hypotheses H1 to H3, except for H2.1, one-way ANOVAs were conducted. For testing H2.1, a paired samples T-test was used to investigate differences between participants' reported SES for themselves and their families. Following that, a multiple linear regression was calculated. H4 and H5 were tested simultaneously in one multiple linear regression per dependent variable.

Results

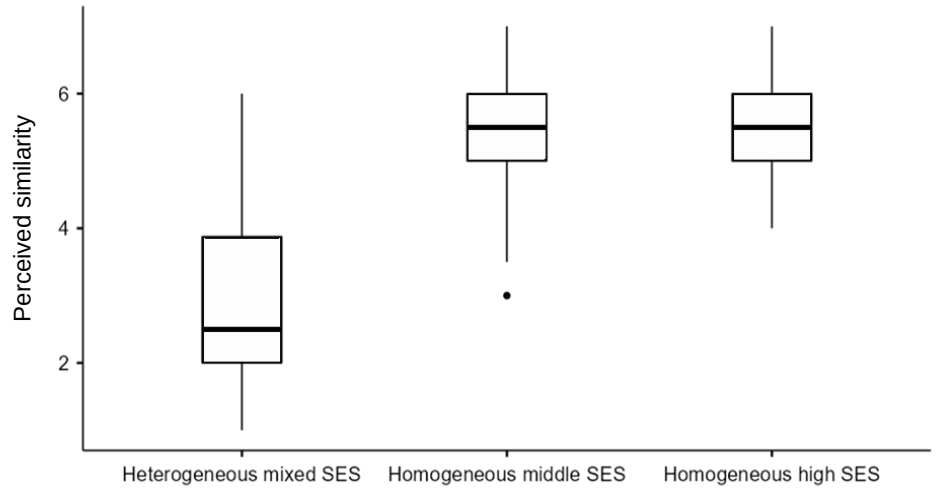
Manipulation check

To assess whether the intended manipulation of the hypothetical energy communities' homogeneity and socioeconomic status was successful, we conducted a Fisher's one-way ANOVA with the mean of the "perceived similarity among community members" scale and the

mean of the "perceived communities' SES" as the dependent variable and the conditions as the grouping variable. The reported level of perceived similarity among community members differed statistically significantly for the three conditions ($F(2, 153) = 113.5$, $p < .001$). Closer observation of the manipulation check in Tukey post-hoc tests revealed significant differences between both the heterogeneous mixed SES condition and the homogeneous high SES condition ($t(153) = -12.99$, $p < .001$) and the heterogeneous mixed SES condition and the homogeneous middle SES condition ($t(153) = -13.0$, $p < .001$). The difference test between the two homogeneous conditions did not return significant ($t(153) = 0.24$, $p = .969$). Thus, the members of the two homogeneous conditions were both perceived to be similar to each other while the members of the heterogeneous condition were perceived to be different, showing that the manipulation regarding the similarity of community members to each other has worked.

Figure 3

Perceived similarity among energy community members

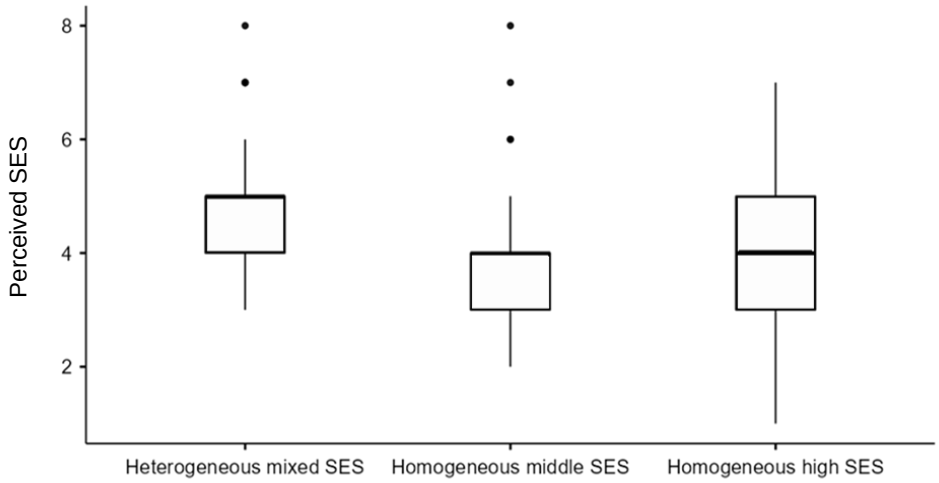


The socioeconomic status participants perceived the energy communities to have also differed statistically significantly for the three conditions ($F(2, 153) = 10.3$, $p < .001$). Closer observation of the differences of perceived community SES in Tukey post-hoc tests revealed significant differences between both the heterogeneous mixed SES condition and the homogeneous high SES condition ($t(153) = 4.47$, $p < .001$) and the heterogeneous mixed SES condition and the homogeneous middle SES condition ($t(153) = 2.86$, $p = .013$). The difference

test between the two homogeneous conditions did not return significant ($t(153) = 1.52$, $p = .284$). Thus, while the mean of the perceived SES of the heterogeneous mixed SES condition ($M = 4.74$, $SD = 1.18$) was statistically significantly different from the homogeneous middle SES condition ($M = 4.06$, $SD = 1.11$) and the homogeneous high SES condition ($M = 3.70$, $SD = 1.31$), the two homogeneous conditions did not differ significantly in the mean of the perceived SES. Hence, we can conclude that the manipulation of the SES as intended was not fully successful.

Figure 4

Perceived socioeconomic status of energy community members



Hypothesis Testing

H1

To assess whether identification and engagement significantly varied for the homogeneous and the heterogeneous conditions, we conducted Fisher's one-way ANOVA with the means of the scales for identification, willingness to join, and willingness to participate as the dependent variables and the conditions as the grouping variable. On average, participants' level of identification across the three conditions was $M = 3.96$, $SD = 1.14$. The highest level of identification was shown in the heterogeneous mixed SES condition ($M = 4.20$, $SD = 1.03$). The average willingness to join the energy community across the conditions was $M = 4.63$, $SD = 1.42$ and willingness to participate in it was $M = 4.42$, $SD = 1.28$. Willingness to join was

highest for the homogeneous middle SES condition (M = 4.82, SD = 1.31) and willingness to participate was highest for the heterogeneous mixed SES condition (M = 4.54, SD = 1.20). For none of the three dependent variables did the conditions statistically significantly differ in their means (see Table 2). Thus, Hypothesis 1 is rejected since the assumption that there are significant variations in the DV based on the three groups is not confirmed by the study data.

Table 2

Results of Fisher's one-way ANOVA for H1

	F	**df1**	**df2**	**p**
Identification	1.933	2	153	0.148
Willingness to join	0.789	2	153	0.456
Willingness to participate	0.749	2	153	0.474

H2 and H2.1

H2. To assess whether perceived ingroup-prototypicality is significantly higher in the heterogeneous mixed SES condition than in both homogeneous SES conditions, a Fisher's one-way ANOVA was calculated. The mean of the scale for perceived ingroup-prototypicality was entered as the dependent variable and the conditions as the grouping variable. The F-test returned non-significant ($F(2, 153) = 1.02$, $p = 0.365$). Thus, H2 is rejected since participants perceived ingroup-prototypicality showed to be independent of the condition they were assigned to.

H2.1. Before testing hypothesis 2.1, a paired samples t-test was conducted to investigate the difference between participants' reported SES for themselves (M = 4.72, SD = 1.33) and their families (M = 4.06, SD = 1.46). The t-test returned significant ($t(155) = -6.33$, $p < .001$) with a medium effect size (d = 0.507 95% CI [.45-.86]). This difference test was performed to determine whether both personal SES and family SES could explain the relationship between group composition and perceived ingroup prototypicality. Considering both measures is important because people may perceive their social status in terms of both their own SES and

their family's SES. The significant difference between these measures underscores the importance of conducting separate analyses for both personal and family SES to understand their impact on the relationship. To investigate whether perceived ingroup-prototypicality is higher in both homogeneous SES conditions compared to the heterogeneous mixed SES condition if the SES participants report and the SES the homogeneous communities are perceived to have correspond, two multiple linear regression were calculated. In both regressions the mean of the "perceived ingroup-prototypicality" scale was entered as the dependent variable and the condition was set as the factor variable. Participants' perceived personal and perceived family SES were entered as the covariate, respectively. Additionally, the interaction term between the condition and the perceived SES was entered. Both the models with and without the interaction term returned non-significant for participants' perceived SES for themselves and their family (see Table 3). Since the model fit is indicative of whether the predictors significantly affect the outcome, which is not the case here, H2.1 is rejected. Therefore, the assumption that group homogeneity positively predicts perceived ingroup-prototypicality when the socioeconomic status of the participants and the socioeconomic status of the homogeneous energy community match is not supported.

Table 3

Model fit measures for H2.1

				Overall Model Test			
Model	**R**	**R^2**	**Adjusted R^2**	**F**	**df1**	**df2**	**p**
Perceived SES for participants							
1	0.125	0.0156	-0.00383	0.803	3	152	0.494
2	0.135	0.0183	-0.01439	0.560	5	150	0.730
Perceived SES for participants' family							
1	0.116	0.0134	-0.00610	0.687	3	152	0.562
2	0.132	0.0174	-0.01533	0.532	5	150	0.752

Note. 1 is the model containing the main effect of the perceived SES for participants and their family, respectively; 2 is the model additionally containing the interaction between the respective perceived SES and the condition.

H3

A Fisher's one-way ANOVA was conducted to investigate whether group homogeneity positively predicts perceived group efficacy. The "group efficacy" scale mean was entered into the ANOVA as the dependent variable and the condition as the grouping variable. The means showed to be higher for the homogeneous conditions (high: M = 5.52, SD = 0.621, middle: M = 5.56, SD = 0.623) compared to the heterogeneous condition (M = 5.31, SD = 0.702). The ANOVA returned a non-significant difference between the perceived group efficacy means of the three conditions ($F(2, 153) = 2.23$, $p = .111$). Thus, H3 is rejected since group homogeneity did not significantly predict perceived group efficacy.

H4 and H5

For each of the three dependent variables, a multiple linear regression was calculated to investigate whether perceived group efficacy and perceived ingroup-prototypicality significantly predict identification and engagement in the collective. To do so, identification, willingness to join, and willingness to participate were individually entered as the dependent variable and perceived group efficacy and perceived ingroup-prototypicality were inserted as covariates. Since the previous analyses indicated no significant differences between the conditions regarding the reported perceived group efficacy, group differences were not investigated here. The model fit for each dependent variable was statistically significant (see Table 4). The respective R^2 are indicative of a medium goodness-of-fit according to Cohen (1988) and explain between 22% and 29% of the overall variance.

Table 4

Model fit measures for H4 and H5

				Overall Model Test			
Model	**R**	**R^2**	**Adjusted R^2**	**F**	**df1**	**df2**	**p**
Identification	0.521	0.271	0.262	28.5	2	153	< .001
WTJ	0.465	0.216	0.206	21.2	2	153	< .001
WTP	0.541	0.293	0.284	31.7	2	153	< .001

For each model, perceived group efficacy and perceived ingroup-prototypicality statistically significantly predict the respective dependent variable (see Table 5). Investigating the standardised estimates for each dependent variable it becomes apparent that for willingness to join and willingness to participate the estimates for perceived group efficacy and perceived ingroup-prototypicality reach similar values. The standardised estimates for identification differ to a greater extent. Since all estimates for the two covariates are positive, the hypotheses that the perceived group efficacy and the perceived ingroup-prototypicality positively predict identification and engagement in the collective are both supported by the data.

Table 5

Model Coefficients for H4 and H5

Dependent variable	Predictor	Estimate	SE	t	p	Stand. Esti-mate	Lower C.I.	Upper C.I.
Identification	Intercept	0.104	0.672	0.155	0.877			
	Group efficacy	0.426	0.122	3.487	< .001	0.245	0.106	0.384
	Ingroup-prototyp.	0.409	0.070	5.880	< .001	0.414	0.275	0.533
WTJ	Intercept	-0.371	0.868	-0.427	0.670			
	Group efficacy	0.671	0.158	4.249	< .001	0.310	0.166	0.454
	Ingroup-prototyp.	0.359	0.090	3.991	< .001	0.291	0.147	0.435
WTP	Intercept	-0.807	0.745	-1.08	0.281			
	Group efficacy	0.695	0.136	5.13	< .001	0.365	0.219	0.492
	Ingroup-prototyp.	0.383	0.077	4.97	< .001	0.344	0.208	0.481

Discussion

This study aimed to investigate the relationship between group homogeneity, perceived group efficacy and perceived ingroup-prototypicality on identification and engagement in energy communities. Knowledge about the interrelationships opens the possibility of designing energy communities in such a way that a large number of people of different socioeconomic statuses can join them and equally benefit from the advantages of these communities. By involving a diverse range of people, the transformation to sustainable and just energy systems is driven forward.

The results of the analyses indicate no significant difference between either of the three conditions and the reported levels of identification and engagement in the energy communities. The same goes for the mediators perceived group efficacy and perceived ingroup-prototypicality. Nonetheless, the mediators turned out to positively predict the dependent variables identification, willingness to join, and willingness to participate. The statistically significant results indicating that perceived ingroup-prototypicality and perceived group efficacy explain variations in identification and engagement contribute to existing research on the identification of factors that increase identification with and participation in groups.

The finding that the perception of the self as a prototypical ingroup member elicits stronger identification with the described energy community is in line with the similarity hypothesis. This hypothesis states that an individual's identification with a group is positively related to the extent to which they and others recognize their characteristics to be similar to those of other group members (Lau, 1989). Especially the perception of oneself as a prototypical group member can foster group identification (Hoffmann et al., 2020). Perceived ingroup-prototypicality thus seems to play a central role in cultivating a sense of belonging and commitment to the group. Placing this finding in the context of energy communities, it can be inferred that members who perceive themselves as prototypical are particularly likely to identify strongly with the community which in turn can increase their engagement and active participation in collective action.

The finding that perception of group efficacy also elicits stronger identification and willingness to engage in energy communities can be attributed to the properties efficacious groups are ascribed to have. Groups that are perceived to be efficacious are believed that they can work together effectively to achieve their group goals (Bandura, 1997). As such, people are motivated to join groups that are effective in achieving goals that are in line with their own. The study thus confirms that both the path via instrumental utility - represented by perceived

group efficacy - and the path via social affiliation - represented by perceived ingroup-prototypicality - significantly predict identification and engagement in energy collectives.

Several possible explanations can be found for the absence of significant group differences between conditions. The first explanation that naturally needs to be considered is the true absence of differences in perceived group efficacy and perceived ingroup-prototypicality between the homogeneous and heterogeneous conditions. This seems, however, unlikely under consideration of the findings of other studies investigating the perceptions of homogeneous and heterogeneous groups. For example, it has been found that heterogeneity compared to homogeneity in groups not only leads to more intergroup conflict (Williams & O'Reilly, 1998), and that said conflict negatively affects group dynamics (Sanchez-Burks et al., 2008), but that heterogeneous groups are also *perceived* to experience more intergroup conflict, which ultimately affects perceived group efficacy (Phillips & Apfelbaum, 2015).

Considering the insignificant result regarding the assumption that perceptions of oneself as a prototypical member of a group would be generally higher in the heterogeneous condition, it is applicable to note Hogg and Gaffney (2014). They postulate that "[p]eople prefer to identify with high-entitativity groups because such groups typically have a relatively clearly defined, distinctive, and consensual prototype". Entitativity, relating to the level of commonality of attributes, intentions, and underlying essence a group bears (Rothbart & Park, 2004), is per definition higher in homogeneous groups (Spears et al., 2004). Even though these perceptions contradict what we assumed, they still indicate a difference in perceived ingroup-prototypicality between heterogeneous and homogeneous groups.

An explanation for the lack of observed difference between participants' perceived ingroup-prototypicality for the conditions might be found in the sample's study program. The tendency to identify with more heterogeneous groups is related to personal characteristics i.e., individuals' positive attitudes towards diversity (Sawyerr et al., 2005). These positive attitudes towards diversity can be traced back to the personality trait openness of the Big Five personality

traits (Costa & McCrae, 1992) which is significantly higher in psychology students compared to other academic majors (Vedel, 2016). Presenting such a skewed sample with homogeneous and heterogeneous descriptions of energy communities thus might have led to the non-significant differences between the conditions' perceived ingroup-prototypicality means.

Within the context of this study, various issues in conceptualisation and methodology might be indicative of not finding significant effects. Here, first, the a priori power analysis must be critically evaluated. While the *F*-test G*power analysis yielded an estimated sample size of 158 participants as sufficient to find an effect at $\alpha = .05$ and power = .80, an aposteriori power analysis with the Monte Carlo Power Analysis for Indirect Effects (Schoemann et al., n.d.) yielded an estimated sample size of 410 to have a statistical power of 0.80 for the mediation path of perceived ingroup-prototypicality[2]. An a posteriori analysis of achieved power for the individual paths revealed sufficient power for the path via perceived group efficacy (identification: 0.99, WTJ: 0.98, WTP: 1.00) and insufficient power for the path via perceived ingroup-prototypicality (identification: 0.42, WTJ: 0.41, WTP: 0.43)[3]. These results show that the current study is largely underpowered and a sample size of almost three times the acquired sample size would have been necessary to reach sufficient power.

However, the overall benefit of achieving sufficient power remains questionable with the prospective of achieving small effect sizes. In our case, the maximum explained variance by the two mediators was around 30% for willingness to participate. Effect sizes around this

[2] The entered values for sample estimation in a parallel mediation model were 0.8 for the target power, 1000 Replications, 20.000 Monte Carlo Draws per Rep and a 95% confidence level. As the input method correlations were chosen. The perceived similarity among community members was used as the IV due to the necessity of entering a continuous variable. Correlations between the perceived similarity among community members and the three DVs and the mediators and the three DVs were entered, respectively. The three paths yielded different sample estimates for the two paths. Estimates were highest for the path via perceived ingroup-prototypicality, thus they are reported here. With identification and willingness to join, respectively, estimates resulted in 390 participants. 410 participants were estimated for willingness to join as the DV. A full correlation matrix can be found in Appendix B, Table B5.

[3] For the analysis of achieved power in a parallel mediation model the sample size was set to 156 with 1000 Replications, 20.000 Monte Carlo Draws per Rep and a 95% confidence level. Achieved power for the difference estimates between the two paths resulted in identification: 0.15, WTJ: 0.35, WTP: 0.42.

range suggest limited practical relevance of the findings and thus do not indicate further efforts in reaching the necessary sample size.

Secondly, the failure of the manipulation of the SES in the desired direction must be closely investigated. Participants in the homogeneous high SES condition consistently underestimated the described energy community's socioeconomic status when they had to compare the average community member with the Dutch population, despite describing the members as "highly educated people with high paying jobs like doctors, lawyers, CEOs" in the vignette at the beginning of the study. In direct comparison to the homogeneous middle SES and the heterogeneous mixed SES condition, the mean estimate of participants in the homogeneous high SES condition stood out as the lowest mean SES estimated. Since it was checked and ruled out that this unexpected assessment was due to an error in the presentation of the item, other explanations can only be assumed.

One such explanation is that the vignette developed is not sufficient in creating a picture of an energy community that consists of high SES members. Even though the vignette was carefully constructed regarding the manipulation of SES and excluding possible confounding variables, it is still possible that the overall vignette was not successful in conveying the intended picture (Aguinis & Bradley, 2014). Further, the item was administered as the third last item before participants finished the questionnaire. Therefore, it cannot be ruled out that during and through answering the preceding items the image of the energy community changed in a way that led to this low average assessment of SES. Moreover, the manipulation was twofold. It contained not only a variation in community members' SES, but also a variation of group homogeneity. This simultaneous alteration of two factors makes it difficult to extract their individual influence on the DVs and thus complicates the interpretation of the results.

Lastly, the fit of the MacArthur Scale of Subjective Social Status must be critically questioned. While the scale has been extensively used over the last 20 years and has proven to be a reliable and valid measure for assessing the subjective social status of a wide range of

populations, a recent study investigating pregnant mothers' subjective social status found the subjective measures to have stronger relationships with other subjective social status measures than with objective social status measures (Moss et al., 2023). This inability of participants to adequately estimate SES might have applied in this instance as well since a subjective measuring tool was used to assess the SES of the energy communities that was presented as objective information.

Limitations

There are several limitations to this study. The manipulation of the energy communities' SES worked only partly. Because the potential effect of the partially failed manipulation is inseparably intertwined with the answers of participants in the homogeneous high SES condition it affects the general interpretability of the results. However, the manipulation has worked for the homogeneous middle SES and the heterogeneous mixed SES condition. Thus, conclusions about the different effects of group homogeneity could still be drawn. Future studies investigating differences in SES should pay close attention when aiming to manipulate SES to represent a high SES group.

Further, the generalisability of the results is restricted by the study's sample. Due to time constraints, the university's own participant pool of first-year psychology students was chosen to conduct the study. In this particular case, the sample of students is not representative of the general Dutch population. About 85% of the participants classified themselves as medium to low on the SES scale, which means that the groups of people with high and low SES were not represented. But, the results still allow to draw conclusions about the demographic the students display. Given the time constraints the use of the student sample was an efficient approach of sample recruitment. Nonetheless, future studies should invest efforts into recruiting more representative samples.

Another sample-related limitation is the data quality produced by the student sample. Even though largely employed, the participant pool has repeatedly been criticised for

conducting studies inattentively and carelessly. This is probably because a certain number of studies must be completed to obtain the necessary credits, but students might not focus on accuracy due to their preoccupation with numerous other academic obligations. While these factors might influence the data reliability, the inclusion of the data quality check should have counteracted students' inattention to an extent that the findings can still be considered robust.

Implications and Future Research

Since we expected students to fall mostly in the middle SES category, we refrained from framing any of the conditions as a truly low SES group. We based our decision on the presumption that the reported values for perceived ingroup-prototypicality and identification with the energy community would otherwise have been so low for all groups that no differences would have been detectable. For reasons previously attempted to explain, this was also the case for the results that we obtained with this design. Recommendations can be drawn from this for a replication or extension of this study.

Future research trying to investigate the effects of group homogeneity on identification and engagement with certain groups by manipulation of the socioeconomic status of the groups that participants are provided with should focus efforts on recruiting a sample with a wide range of participants of all SES. By doing so, the effect of a match between the SES reported by the participants and the provided groups can be investigated for the entire range from low to high SES. A design that includes a group condition that actually describes a low SES group and is assessed by a low SES group would provide more insight into the factors that are necessary to make e.g., energy communities more attractive to people with low SES.

In line with the results obtained, implications can be drawn for the marketing and promotion of renewable energy communities. Since a comparison of the standardised estimates of the two mediators for willingness to join and willingness to participate showed similar values, it can be concluded from these results that both concepts have similar relevance for becoming an active member of an energy community. For identification perceived ingroup-

prototypicality played a more substantial role than perceived group efficacy. When marketing RECs with the aim of attracting and binding new members, both concepts should therefore be part of the advertising strategy.

To further investigate the weighted relevance of perceived ingroup-prototypicality and group efficacy, we suggest conducting marketing studies in which participants are presented with e.g., advertisements for joining energy communities. These may, in different ways, focus on expressing the effectiveness of the group or the similarity of the community to the observers. The participants' responses to each of these would provide further insight into which marketing strategy leads to more people joining and participating in RECs.

Regarding the overall aim of this study, it is important to consider the real-life implications of trying to increase renewable energy community participation from middle to low-SES citizens. While research in the field of group homogeneity and group perception provides interesting insights into the dynamics in groups with varying composition and indicates which groups are considered particularly attractive to potential members, in the context of RECs the need for more diverse groups for a just transition to sustainable energy systems must be brought more to the fore. Therefore, more focus should be placed on the living reality of underrepresented groups to identify those barriers that prevent access to renewable energy communities. In this way, obstacles can be removed, and energy communities can be designed in such a way that participation for lower socioeconomic groups becomes not only attractive but also possible.

Conclusion

By investigating the interplay between group homogeneity, perceived group efficacy and ingroup-prototypicality on identification and engagement within energy communities, this research contributes to the existing literature on the psychosocial dynamics driving group membership. Even though the current study did not reveal significant differences between participants' indication to join homogeneous or heterogeneous socioeconomic energy

communities and the partial manipulation failure, valuable insights have emerged. These insights hold the potential to inform policies aimed at integrating people from varied socioeconomic backgrounds into energy communities, lighting the way towards a fairer and greener energy system.

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Appendix A

Table A1

Full set of items administered in the questionnaire

Measure	Function	Item	Scale	Reliability
Think about your image of the energy community that was just described. How much do you agree to the following statements:				
Similarity of the energy community members to each other	Manipulation check	Members of the energy community have a lot in common with each other.	seven-point scale from 1 = "strongly disagree" to 7 = "strongly agree"	α = .927
		Members of the energy community are very similar to each other.		
Perceived ingroup-prototypicality	Mediator	I have a lot in common with the average member of the energy community.	seven-point scale from 1 = "strongly disagree" to 7 = "strongly agree"	α = .859
		I am similar to the average member of the energy community.		
		All in all, I would not be a typical member of the energy community.		
Now think about how much you would differ from other members of the energy community:				
		How much would you differ from other members of the energy community?	seven-point scale from 1 = "differ not at all" to 7 = "differ very much"	
Perceived group efficacy	Mediator	*Differentiating between more abstract measures*		

		(sharing goals, acting together, achieving outcomes) and more concrete goals in terms of energy communities		
The statements below describe situations that commonly arise in energy communities. For each situation please rate how certain you are that the community, working together as a whole, can manage them effectively. How well, working together as a whole, can the community:				
Specific measures for energy community related activities		…collectively generate energy … locally share the energy in the community … increase energy efficiency and savings in the community (Energy services)	seven-point scale from 1 = "cannot do at all" to 7 = "Highly certain can do"	α = .788
Below are eight more statements. Please indicate for each statement how likely you think it adheres to the members of the energy community:				
General measures for energy community related activities	*Sharing goals*	The goals of the members of the energy community are supported by all members. The goals of each individual community member are significantly shaped by the common group goals.	seven-point scale from 1 = "very unlikely" to 7 = "very likely"	α = .814
	Acting together	Members of the energy community together fight against obstacles that stand in their way.		

		Members of the energy community move forward together.		
	Achieving outcomes	Other groups are more effective in achieving visible change than the energy community.		
		By implementing their ideas, members of the energy community can achieve great things.		
		I think the energy community can advances an energy transition that is sustainable as a group.		
		I believe joint actions by members of the energy community can lead to a just and sustainable energy transition.		
Think about the energy community that was described to you. Please indicate how much you agree to the following statements below:				
Identification	DV	I identify with the members of the energy community.	seven-point scale from 1 = "strongly disagree" to 7 = "strongly agree"	α = .830
		I feel committed to the members of the energy community.		
		I would be glad to be a member of the energy community.		
		Being a member of the energy community would be an important part of how I see myself.		

Willingness to join the community	DV	I would like to know more about the energy community. I would consider to join the energy community in my neighborhood	seven-point scale from 1 = "strongly disagree" to 7 = "strongly agree	α = .808
Willingness to participate in the community	DV	I would be willing to engage as a member of the energy community. In principle, I am willing to participate in the energy community. I am willing to actively support the energy community. I personally would like to get involved as a member of the energy community.	seven-point scale from 1 = "strongly disagree" to 7 = "strongly agree	α = .920
You are almost at the end of the questionnaire. Before finishing, we would like you to indicate what you think how the energy community compares to the population in the Netherlands:				
Perceived community SES	Manipulation check	"Think of this ladder as representing where people stand in the Netherlands. At the top of the ladder are the people who are the best off, those who have the most money, most education, and best jobs. At the bottom are the people who are the worst off, those who have the least money, least education, worst jobs, or no job. Please place an 'X' on the rung	10-point scale on a ladder from 1-10 with 1 (worst off) to 10 (best off)	

		that best represents where you think the average member of the described energy community stands on the ladder."	
We would like you to also place your family on the same ladder:			
Family SES	Demographics	"Think of this ladder as representing where people stand in the Netherlands. At the top of the ladder are the people who are the best off, those who have the most money, most education, and best jobs. At the bottom are the people who are the worst off, those who have the least money, least education, worst jobs, or no job. Please place an 'X' on the rung that best represents where you think your family stands on the ladder."	10-point scale on a ladder from 1-10 with 1 (worst off) to 10 (best off)
Lastly, please indicate where you would place yourself on this ladder:			
Participant SES	Demographics	"Think of this ladder as representing where people stand in the Netherlands. At the top of the ladder are the people who are the best off, those who have the most money, most education, and best jobs. At the bottom are the people who are the worst off, those who have the least money, least education, worst	10-point scale on a ladder from 1-10 with 1 (worst off) to 10 (best off)

jobs, or no job. Please
place an ‘X’ on the rung
that best represents
where you think you
stand on the ladder.”

Appendix B

Supplementary results

Table B1

Results of Welch's one-way ANOVA for the manipulation checks

	F	df1	df2	p
Community member similarity	91.48	2	96.9	< .001
Perceived community SES	9.84	2	101.7	< .001

Table B2

Results of Welch's one-way ANOVA for H1

	F	df1	df2	p
Identification	2.049	2	100.9	0.134
Willingness to join	0.787	2	101.8	0.458
Willingness to participate	0.589	2	100.0	0.557

Table B3

Results of Welch's one-way ANOVA for H2

	F	df1	df2	p
Perceived ingroup-prototypicality	1.02	2	102	0.365

Table B4

Results of Welch's one-way ANOVA for H3

	F	df1	df2	p
Perceived group efficacy	2.06	2	102	0.132

Table B5

Variables' correlation matrix

		Similarity (manipulation check)	Ingroup-prototypicality	Group efficacy	Identification	WTJ	WTP	Group SES (manipulation check)	Family SES	Participant SES
Similarity (manipulation check)	Pearson's r	—								
	df	—								
	p-value	—								
Ingroup-prototypicality	Pearson's r	0.141	—							
	df	154	—							
	p-value	0.078	—							
Group efficacy	Pearson's r	0.343	0.196	—						
	df	154	154	—						
	p-value	< .001	0.014	—						
Identification	Pearson's r	-0.071	0.462	0.326	—					
	df	154	154	154	—					
	p-value	0.381	< .001	< .001	—					
WTJ	Pearson's r	0.071	0.352	0.367	0.719	—				
	df	154	154	154	154	—				
	p-value	0.380	< .001	< .001	< .001	—				
WTP	Pearson's r	0.023	0.414	0.423	0.758	0.848	—			
	df	154	154	154	154	154	—			
	p-value	0.772	< .001	< .001	< .001	< .001	—			
Group SES (manipulation check)	Pearson's r	-0.257	-0.211	-0.102	-0.217	-0.284	-0.281	—		
	df	154	154	154	154	154	154	—		
	p-value	0.001	0.008	0.204	0.007	< .001	< .001	—		
Family SES	Pearson's r	0.124	0.005	0.117	-0.077	-0.037	-0.004	0.227	—	
	df	154	154	154	154	154	154	154	—	
	p-value	0.122	0.946	0.146	0.338	0.651	0.956	0.004	—	
Participant SES	Pearson's r	0.085	-0.060	0.153	-0.075	-0.113	-0.047	0.154	0.567	—
	df	154	154	154	154	154	154	154	154	—
	p-value	0.289	0.461	0.056	0.352	0.161	0.560	0.055	< .001	—

Statutory Declaration

I herewith declare that I have composed the present thesis and included figures and tables myself and without the use of any other than the cited sources and aids. Sentences or parts of sentences quoted literally are marked as such; other references with regard to the statement and scope are indicated by full details of the publications concerned.

The thesis in the same or similar form has not been submitted to any examination body and has not been published. This thesis was not yet, even in part, used in another examination or as a course performance.

Groningen, 4th of July 2024 

Place, Date Signature