



**Utrecht University**

# Belonging to a student community

The Influence of Perceived Dissimilarity, Community Participation and Climate  
for Inclusion on Sense of Community and Inclusion in the Student Context

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### **Abstract**

The lives of students do not just revolve around studying, they have extensive social lives as well. Students are part of multiple groups, but the question is if they feel like they belong to those groups. Having a sense of belonging makes students feel more at home at the university and therefore decreases the chance of dropout and declining academic performance. That is why sense of community (SOC) and inclusion, which both emphasize the value of belonging, were explored among university students. The relationships between perceived dissimilarity and SOC and inclusion, with community participation as a mediator, were tested by conducting an online questionnaire among Veterinary students at Utrecht University ( $N = 183$ ). In addition it was tested whether the relationships between perceived dissimilarity and SOC and inclusion were moderated by climate for inclusion. Moderated mediation analyses showed that perceived dissimilarity was negatively related to community participation, SOC and inclusion, and that community participation was positively related to SOC and inclusion. The relationships between perceived dissimilarity and SOC and inclusion were partially mediated by community participation. The relationships between perceived dissimilarity and community participation, and perceived dissimilarity and inclusion were moderated by a positive climate for inclusion. These findings suggest that perceived dissimilarity decreases students' feelings of belonging to the community and their perception that the student community provides them with feelings of belonging and acceptance. In contrast, community participation and a positive climate for inclusion were related to more feelings of belonging. Recommendations to improve the feelings of belonging for students are given, by suggesting ways to expand community participation and providing tools to establish a positive climate for inclusion. This way, students have the opportunity to improve both their social and academic lives.

*Keywords:* Sense of community, inclusion, perceived dissimilarity, community participation, climate for inclusion, sense of belonging

### **Introduction**

Even though their label may suggest otherwise, the lives of students do not just revolve around studying. Going out for drinks with friends, taking a break from studying with classmates or partying with the study association: Students have extensive social lives as well. They can be part of multiple social groups, such as friends, roommates, classmates, study associations, or sport clubs. However, just being part of something in theory, is not enough. The question is: Do students feel like they belong to those groups? The need to belong, which is a strong desire to form and maintain enduring interpersonal attachments, is deeply rooted into the existence of humans (e.g., Baumeister & Leary, 1995). For students, both formal and informal relationships with peers can influence their sense of belonging (Meeuwisse, Severiens, & Born, 2010). Sense of belonging decreases the chance of developing psychopathological disorders and helps managing stress (Baumeister & Leary, 1995). Moreover, it is found to be related to positive psychological factors such as self-esteem, self-efficacy, and life satisfaction (Allen & Bowles, 2012). In a school setting, sense of belonging improved motivation and effort, and decreased absenteeism (Allen & Bowles, 2012). Furthermore, a lack of a sense of belonging may make students feel less at home at their university and can thus undermine academic performance (Walton & Cohen, 2007) and increases the chance that a student will drop out of college (Thomas, 2012; Tinto, 1993). Therefore it is important to make students feel like they belong to their university peers. This study aims to contribute to this goal by researching concepts that focus on belonging, especially belonging to the student community, and by studying the relationships with concepts that are expected to influence to those feelings of belonging.

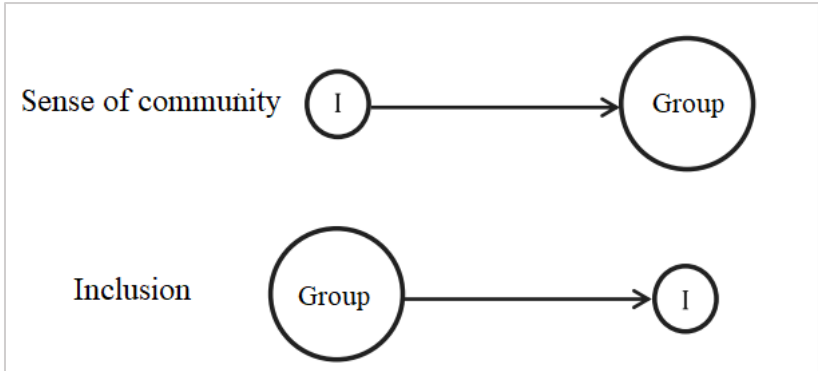
A concept that emphasizes the importance of belonging is psychological sense of community (SOC). SOC used to focus on geographical location, such as a town or neighbourhood community, but eventually this expanded to relational communities, like professional communities (Gusfield, 1975, in McMillan & Chavis, 1986). A community consists of four elements: Membership, influence, integration and fulfilment of needs, and shared emotional connection (McMillan & Chavis, 1986). More specifically, SOC is a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members' needs will be met through their commitment to be together (McMillan, 1976, cited in McMillan & Chavis, 1986). Since SOC is a predictor for emotional, psychological, and social well-being (Prati & Cicognani, 2018), it is a valuable topic to explore.

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Another concept that focuses on belonging is inclusion. The difference between SOC and inclusion, however, is that SOC can be conceptualised as an individual feeling like they belong to a group, while inclusion can be conceptualised as the individual’s perception that a group provides them with a feeling of belonging and acceptance (see Figure 1; Jansen, Otten, van der Zee, & Jans, 2014; McMillan & Chavis, 1986). Furthermore, SOC takes into account whether people feel like they matter to the group, whether their needs will be met, and whether they feel like they share experiences and places with community members, while inclusion expands beyond feelings of belonging by also including feelings of authenticity (Jansen et al., 2014; McMillan & Chavis, 1986). More specifically, inclusion refers to “the degree to which an individual perceives that the group provides him or her with a sense of belonging and authenticity” (Jansen et al., 2014, p. 373). The value of inclusion, specifically in education, has gotten more evident the last few years (e.g., Ainscow, 2020; Shore et al., 2011; UNESCO, 2017). For example because of a social justification of inclusive schools, which says that children will get used to differences between people when they are all educated in the same schools, which will therefore make their attitudes towards differences more positive. This suggests that inclusive schools can lay a foundation for a less discriminating and more just society (Ainscow, 2020).

Figure 1

The Individual-Group Relationship in Sense of Community and Inclusion



Note. Adapted from Jansen et al. (2014).

Perceived dissimilarity

People do not only use groups or communities to feel like they belong, but also to compare themselves to each other (Festinger, 1954). This social comparison can lead to people perceiving themselves as similar or dissimilar to relevant others, such as peers. More

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specifically, perceived dissimilarity refers to “the degree to which an individual and some second entity differ in terms of various attributes” (Jackson, May, & Whitney, 1995, p. 219). Those attributes could be sexual orientation, ethnicity, gender, age, beliefs or values, to name a few. Perceived dissimilarity has been found to be related to inclusion, mainly in the workplace context (Jansen, Otten, & van der Zee, 2017; Mor-Barak, Cherin, & Berkman, 1998; Şahin, van der Toorn, Jansen, Boezeman, & Ellemers, 2019). Dissimilarities between the individual and the majority of the group led to minority members feeling a lower sense of belonging and authenticity, and thus feeling less included than majority members (Jansen et al., 2017). The expectation is that the relationship between perceived dissimilarity and inclusion will be found for students as well, since the comparisons between an individual and a group are not limited to the workplace.

Therefore, the following hypothesis will be tested:

*H1. Perceived dissimilarity is negatively related to inclusion.*

### **Community participation**

A concept that is associated with perceived dissimilarity, sense of community, and inclusion, is community participation (e.g. Amado, Stancliffe, McCarron, & McCallion, 2013; Karau, & Williams, 1993; Talò, Mannarini, & Rochira, 2014). Community participation is “a process in which individuals take part in decision making in the institutions, programs, and environments that affect them” (Heller et al., 1984, p. 339, in Talò et al., 2014). According to theories such as the homophily principle, people who are similar will have more positive feelings towards each other and therefore contribute more to the group (Kandel, 1978; Karau, & Williams, 1993). Some empirical research strengthened the assumption that similarity fosters contribution and participation desire (Cosley, Ludford, & Terveen, 2003; Guéguen, Martin, & Meineri, 2011; Hook, Baxter, & Kulczynski, 2020). However, other empirical research shows an opposite effect, namely that people who are dissimilar participate more (Ling et al., 2005; Ludford, Cosley, Frankowski, & Terveen, 2004). A possible reason for this, as stated by the authors of the articles, could be that dissimilar people have more unique information to share, such as experiences and perspectives, and thus can have longer conversations (Ling et al., 2005; Ludford et al., 2004). Since empirical research shows two possible directions, the relationship between perceived dissimilarity and community participation will be explored without a specific direction for the student context.

*H2. Perceived dissimilarity is related to community participation.*

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Besides perceived dissimilarity, community participation can also be linked to SOC (Talò et al., 2014). Research mainly focuses on the influence of SOC on community participation (e.g., Chavis & Wandersman, 2002). However, previous studies suggest that participation can also enhance SOC by forming social ties with peers and can therefore help them feel connected and give them a feeling of belonging (Cicognani et al., 2008; Osterman, 2000). This is supported by the finding that the engagement of students leads to them having a stronger sense of belonging (Thomas, 2012). Therefore, the expectation is that the positive relationship between community participation and SOC will be replicated in the student context.

*H3a. Community participation is positively related to sense of community.*

Additionally, whether community participation and inclusion are related concepts will be explored. Until now, the relationship has mainly been studied in people with intellectual or developmental disabilities (e.g., Amado et al., 2013; Milner & Kelly, 2009). There is a lack of research on the relationship between community participation and inclusion for groups without disabilities. Still, the assumption that participation strengthens inclusion is used as a base for policies (Basit & Tomlinson, 2012). Therefore, it would be useful to find out whether the relationship between community participation and inclusion remains stable for other groups than people with disabilities. According to the social justice ideology, participation and engagement are a requirement for inclusion in higher education (Gidley, Hampson, Wheeler, & Bereded-Samuel, 2010). Therefore it is expected that more community participation leads to people feeling more included in the community in a student environment as well.

*H3b. Community participation is positively related to inclusion.*

The hypothesised relationships between perceived dissimilarity and community participation, and between community participation and SOC, point towards a relationship between all three concepts: from perceived dissimilarity to community participation and subsequently to SOC. Moreover, since previous research showed that perceived dissimilarity is related to belonging (Kim, Ormiston, Easterbrook, & Vignoles, 2019), perceived dissimilarity and SOC are suspected to be related as well. All of this leads to the belief that the relationship between perceived dissimilarity and SOC may be (partially) mediated by community participation. Until now, this has not been researched. So, since the expectation is that perceived dissimilarity is related to community participation, which in turn is expected to

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be positively related to SOC, it will be explored whether community participation mediates the relationship between perceived dissimilarity and SOC.

*H4a. Community participation mediates the relationship between perceived dissimilarity and sense of community.*

Based on previous research, the relationship between perceived dissimilarity and inclusion is suspected to be mediated by community participation as well. Ethnic minorities were found to participate less in formal and informal networks, which led to them perceiving an organization as less inclusive than majority members (Lincoln & Miller, 1979). Research on inclusion in education and mental health practices suggests that participation prevents social exclusion and promotes inclusion (Bradshaw, Kemp, Baldwin, & Rowe, 2004; Lloyd, Tse, & Deane, 2006). That is why it is expected that community participation is the mediator and predicts the level of inclusion, instead of inclusion predicting community participation.

*H4b. Community participation mediates the relationship between perceived dissimilarity and inclusion.*

### **Climate for inclusion**

In addition to community participation as a mediator, it is believed that some relationships are moderated by a positive climate for inclusion. A positive climate for inclusion establishes an environment where organizational members are treated fairly and without bias, where differences between organizational members are allowed and appreciated, and where organizational members are included in decision making. (Nishii, 2013; Şahin et al., 2019). In this case, students can be seen as organizational members of their study programme, as done by Jansen and colleagues (2014).

Research on perceived dissimilarity and work group involvement suggests the existence of perceived group openness to diversity as a moderator (Hobman, Bordia, & Gallois, 2004). Work group involvement can be compared to community participation in the sense that they both focus on collaborative decision making. Perceived group openness to diversity is similar to climate for inclusion; both concepts emphasize that differences between organizational members are respected in the group. Based on the resemblance of the concepts as mentioned by Hobman and colleagues (2004) and as used in this study, the expectation is that a positive climate for inclusion moderates the relationship between perceived dissimilarity and community participation. That is to say, the relationship between perceived

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dissimilarity and community participation is weaker the more inclusive the climate is perceived to be.

*H5a. The relationship between perceived dissimilarity and community participation is moderated by a positive climate for inclusion.*

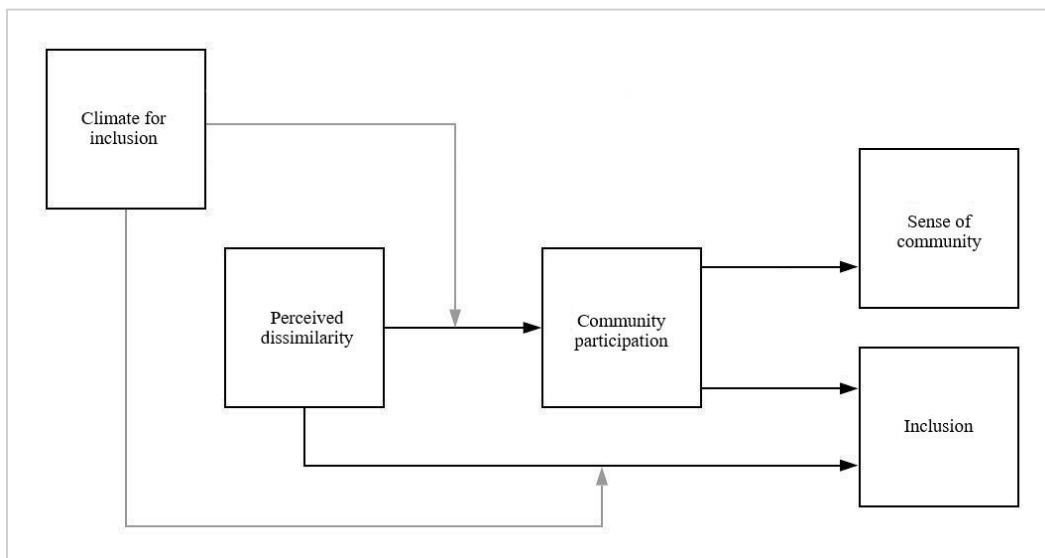
Lastly, previous studies have found that the relationship between perceived dissimilarity and inclusion is moderated by a positive climate for inclusion in the workplace (Jansen et al., 2017; Şahin et al., 2019). This means that the more dissimilar someone is to the group, the less they feel included, but this relationship is weaker when the group values and is open towards differences. Since students can be seen as organizational members of their study, a positive climate for inclusion is assumed to exist in a faculty environment too. Therefore, the expectation is that climate for inclusion moderates the relationship between perceived dissimilarity and inclusion in the student context as well, in such a way that the relationship between perceived dissimilarity and inclusion is weaker the more inclusive the climate is perceived to be.

*H5b. The relationship between perceived dissimilarity and inclusion is moderated by a positive climate for inclusion.*

The expected relationships between the mentioned concepts and the relationships that will be explored, are summarized in a model below (see Figure 2).

**Figure 2**

*The Hypothesised Relationships between the Variables.*





### Methodology

#### Design and Participants

This study worked with a 2 x 2 between-subjects design, with perceived dissimilarity as an independent variable. The dependent variables were sense of community and inclusion. Community participation was used as a mediator and climate for inclusion as a moderator. Participants were Veterinary bachelor students at Utrecht University. The university was already planning to do research on the level of inclusion in the faculty, which is why the current study was part of a larger investigation. In total,  $N = 764$  students received an email with a link to the online questionnaire. According to a power analysis calculated with the programme G\*Power, the questionnaire had to be completed by at least  $N = 152$  participants. This is based on an expected effect size of  $\eta p^2 = .05$ , a p-value of  $p = 0.05$ , a power of 0.80, 1 degree of freedom ( $df = 1$ ) and 2 groups. The estimated effect size derived from an effect size that Sahin and colleagues (2019) found in their study about deep-level dissimilarity and inclusion. The actual number of participants that started the questionnaire was  $N = 191$ , of which  $N = 183$  were Veterinary students (89% female, 11% male). Some participants did not complete the questionnaire, but their answers are still used in the analyses as much as possible. The majority of the participants were Dutch (97%), lived on their own in Utrecht (50%) and started their education in September 2017 (34%).

#### Procedure

The questionnaire was created through Qualtrics, an online platform to create and spread questionnaires, after the study was approved by the ethical committee. Participants received an email with a link to the questionnaire, which was sent from an official account from the faculty. The study used an online questionnaire, because this is a cost-effective way to reach college students, especially since their email addresses are already known to the faculty (Porter, 2004). Aimed at students in Netherlands, the questionnaire was taken in Dutch.

After the participants clicked on the link to the questionnaire, they were shown a brief description of the research and were asked to give informed consent. The questionnaire started with the collection of demographic data, which included questions about gender, the year the participant started studying Veterinary medicine, their ethnicity and the living situation of participants. This was followed by the questions about the study variables, of which the questionnaires that were used are described below. At the end, the participants were

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thanked for their participation, after which they could close the questionnaire. Completing the questionnaire was estimated to take about 15 minutes.

### Measures

**Sense of Community.** SOC was measured with the Sense of Community Index, specifically the student version (Obst & White, 2004, adapted from Perkins et al., 1990). It had 10 items and used a Likert scale ranging from 1 = ‘strongly disagree’ to 7 = ‘strongly agree’. Examples of items are: ‘I feel at home in this faculty.’ and ‘The people who study in this faculty get along well.’ Three items were negatively phrased and were therefore recoded. A high score on the index indicated a high level of SOC. The reliability of the scale (after deleting items) was  $\alpha = .82$ .

**Inclusion.** The level of inclusion was measured with the Perceived Group Inclusion Scale (Jansen, Otten, Van der Zee, & Jans, 2014). This scale used two subscales (belonging and authenticity) and consisted of 16 items. 8 items focused on inclusion by teachers and the other 8 on inclusion by students. Response options ranged from 1 = ‘completely disagree’ to 7 = ‘completely agree’. Items were adapted to fit the faculty environment, by changing the setting of the group from ‘work’ to ‘the faculty’. An example item from the subscale belonging is: ‘This group gives me the feeling that I belong.’ An example item from the subscale authenticity is: ‘This group encourages me to be who I am.’ A high score on the scale indicated a high level of inclusion. The reliability of the scale (after deleting items) was  $\alpha = .94$ .

**Perceived dissimilarity.** Perceived dissimilarity was measured with two questions about surface-level and deep-level dissimilarity (Sahin et al., 2019, adapted from Hobman, Bordia, and Gallois, 2004). The statements were slightly altered, by substituting ‘the workplace’ for ‘the faculty’. The question for surface-level dissimilarity was: ‘In terms of visible characteristics (e.g. age, sex, ethnicity), I am different than most others at the faculty.’ The question for deep-level dissimilarity was: ‘In terms of invisible characteristics (e.g. beliefs, preferences), I am different than most others at the faculty.’ The optional answers were ‘yes’ and ‘no’. Participants could feel both surface-level and deep-level dissimilar or similar, or dissimilar on one level and similar on the other level. Eventually, for this study, participants were categorised as either feeling ‘similar’ or ‘dissimilar’.

**Community participation.** Community participation was measured with two questions, adapted from Hayek, Carini, O'Day, and Kuh (2002). The first question was based on student-faculty interaction: ‘How many hours do you work with faculty members on

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activities other than coursework (committees, orientation, student-life activities, etc.) in a typical week during the current school year?’ The second question focused on cocurricular activities: ‘How many hours do you participate in cocurricular activities (organizations, campus publications, student government, social fraternity or sorority, intercollegiate or intramural sports, etc.) in a typical week during the current school year?’ Both questions could be answered by writing the response in a text box, based on hours per week. A high average number of hours per week indicated a higher level of community participation.

**Climate for inclusion.** Climate for inclusion was measured with the scale used by Sahin and colleagues (2019). Participants answered questions about how they think people who are dissimilar to the majority are being treated in the organization. The scale consisted of 6 items, and used a Likert scale ranging from 1 = agreeing most with the left statement to 7 = agreeing most with the right statement. Examples of items are: ‘They are being seen as an inconvenience – They are being seen as an asset,’ and ‘They are being seen as not that important – They are being seen as very important.’ A high score on the scale indicated a positive climate for inclusion. The reliability of the scale was  $\alpha = .94$ .

See Appendix I for the used questionnaires. The climate for inclusion scale is not included since it has not yet been approved to be shared.

## Results

The collected data were analysed with the programme SPSS. First it was analysed how many participants felt dissimilar to other students. Based on the number of participants that answered these questions, a total of 59 participants (42%) indicated that they felt dissimilar, in comparison to 81 participants (58%) that felt similar to other students. The zero-order correlations of the variables can be found in Table 1.

### Preliminary analysis

First, whether the inclusion and SOC scales measured different concepts was investigated. An exploratory factor analysis based on principal axis factoring was performed to calculate the total explained variance of the scales. This showed that it was explained by 4 factors. Factor 1 explained nearly half (48%) of the total variance, factor 2 explained 6%, and both factor 3 and 4 explained 4% of the total variance. After a Direct Oblimin rotation, it became apparent that there were some cross-loadings between the items of the inclusion scale and the SOC scale. Based on the cross-loadings, 5 items from the inclusion scale and 2 items from the SOC scale were deleted. See Appendix II for the factor loadings after rotation.

### **Hypothesis testing**

SOC, inclusion, community participation and climate for inclusion were tested for normality. Community participation was not distributed normally, which is why a non-parametric test was used where possible. The hypotheses were tested with a non-parametric test, an independent samples  $t$  test, and two moderated mediation analyses (model 7 and model 8) using PROCESS (Hayes, 2013).

In order to test hypothesis 1, namely that perceived dissimilarity is negatively related to inclusion, an independent samples  $t$  test was performed. As there was no homogeneity of variance as assessed by Levene's Test for Equality of Variances ( $F = 8.28, p = .005$ ), the corresponding test values are reported. Participants who felt dissimilar to others reported significantly lower levels of inclusion ( $M = 4.96, SD = 1.05$ ), than those who felt similar ( $M = 5.63, SD = 0.76$ ),  $t(97) = 4.11, p < .001, d = 0.73$ . These results support hypothesis 1.

In order to test the relationship between perceived dissimilarity and community participation (H2), the non-parametric Mann-Whitney  $U$  test was used. The test showed that people who felt dissimilar ( $Mean Rank = 49.54, n = 55$ ) participated significantly less in the community than those who felt similar to others ( $Mean Rank = 77.21, n = 75$ ),  $U = 1184.50, z = -4.15$  (corrected for ties),  $p < .001, r = -0.36$ . These results support hypothesis 2.

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**Table 1**

*Means, Standard Deviations, Population and Correlations for each Variable*

	<i>M</i>	<i>SD</i>	<i>N</i>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1. Perceived dissimilarity	0.42	0.50	140	-	-.34***	-.42***	-.35***	-.20*
2. Community participation	3.59	4.10	130	-.34***	-	.33***	.34***	-.03
3. SOC	5.11	0.80	130	-.42***	.33***	-	.71***	.54***
4. Inclusion	5.34	0.97	135	-.35***	.34***	.71***	-	.50***
5. Climate for inclusion	4.35	0.88	151	-.20*	-.03	.54***	.50***	-

*Note.* Perceived dissimilarity was coded as 0 and 1, which means that the mean scores indicate the percentage of participants feeling dissimilar. Community participation was coded in number of hours per week.

\* $p < .05$ , \*\*\* $p < .001$ .

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**Moderated mediation analyses.** In order to test hypotheses 3a, 4a, and 5a, a moderated mediation analysis (model 7) was performed. The model used SOC as a dependent variable, perceived dissimilarity as an independent variable, community participation as a mediator and climate for inclusion as a moderator. The overall model was significant for both community participation as outcome variable ( $F(3, 126) = 7.89, p < .001, R^2 = .16$ ) and SOC as outcome variable ( $F(2, 127) = 17.52, p < .001, R^2 = .22$ ). First of all, the analysis confirmed the results of the non-parametric Mann-Whitney  $U$  test that showed that people who felt dissimilar to others, participated significantly less in the community (H2),  $b = -11.32, t(126) = -2.93, p = .004$ . Furthermore, community participation was positively related to SOC (H3a),  $b = 0.05, t(127) = 2.57, p = .012$ . This indicates that participants who participated more in the community had a significantly higher sense of community than those who participated less. A direct relationship between perceived dissimilarity and SOC was found as well,  $b = -0.62, t(127) = -4.16, p < .001$ . This means that participants who felt dissimilar had a lower sense of community. Additionally, community participation was found to mediate the relationship between perceived dissimilarity and SOC (H4a),  $b = -0.14, 95\% \text{ CI } [-.28, -.02]$ . As perceived dissimilarity had a direct effect on SOC, community participation seems to partially mediate the relationship between perceived dissimilarity and SOC. Lastly, whether climate for inclusion moderated the relationship between perceived dissimilarity and community participation (H5a) was tested. Climate for inclusion turned out to be a significant moderator for the relationship between perceived dissimilarity and community participation,  $b = 1.88, t(126) = 2.18, p = .031$ . Students who perceived themselves as dissimilar participated less in the community than students who perceived themselves as similar in a negative climate for inclusion ( $-1 \text{ SD}$ ),  $b = -4.59, p < .001$ , or an average climate for inclusion (mean),  $b = -3.04, p < .001$ . In a positive climate for inclusion ( $+1 \text{ SD}$ ) students who perceived themselves as dissimilar participated just as much in the community as students who perceived themselves as similar,  $b = -1.49, p = .132$ . The results of the first moderated mediation analysis support hypotheses 3a, 4a, and 5a.

Subsequently, the relationship between climate for inclusion and community participation was explored using this same PROCESS model. The relationship between climate for inclusion and community participation turned out to be a significant negative relationship,  $b = -1.72, t(126) = -2.56, p = .012$ . This suggests that a more positive climate is related to less community participation, which is interesting.

In order to test hypotheses 3b, 4b, and 5b, a second moderated mediation analysis (model 8) was performed. The model used inclusion as a dependent variable, perceived

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dissimilarity as an independent variable, community participation as a mediator and climate for inclusion as a moderator. The overall model was significant for both community participation as outcome variable ( $F(3, 126) = 7.89, p < .001, R^2 = .16$ ) and inclusion as outcome variable ( $F(4, 125) = 22.22, p < .001, R^2 = .42$ ). The analysis confirmed the results of the independent samples  $t$  test for H1,  $b = -2.12, t(125) = -2.71, p = .008$ . As expected, it confirmed some of the results of the first moderated mediation analysis as well (H2 and H5a). Furthermore, community participation was positively related to inclusion (H3b),  $b = 0.06, t(125) = 3.61, p < .001$ . This indicates that participants who participated more hours per week in the community reported higher levels of inclusion than those who participated less. Additionally, the model showed that community participation mediates the relationship between perceived dissimilarity and inclusion (H4b),  $b = -0.19, 95\% \text{ CI } [-.33, -.04]$ . As perceived dissimilarity had a direct effect on inclusion, community participation seems to partially mediate the relationship between perceived dissimilarity and inclusion. Afterwards, whether climate for inclusion moderates the relationship between perceived dissimilarity and inclusion (H5b) was tested. The model showed that this is indeed the case,  $b = 0.41, t(125) = 2.40, p = .018$ . Students who perceived themselves as dissimilar, felt less included than students who perceived themselves as similar in a negative climate for inclusion ( $-1 \text{ SD}$ ),  $b = -0.64, p = .003$ , or an average climate for inclusion (mean),  $b = -0.30, p = .041$ . In a positive climate for inclusion ( $+1 \text{ SD}$ ) dissimilar and similar students felt equally included,  $b = 0.04, p = .847$ . The results of the second moderated mediation analysis support hypotheses 3b, 4b, and 5b.

Finally, the relationship between climate for inclusion and inclusion was explored, and was found to be positively significant,  $b = 0.30, t(125) = 2.19, p = .030$ . This indicates that participants who perceived the climate to be inclusive, reported higher levels of inclusion. Figure 3 shows all the relationships that are described above in a model, along with their effect sizes.

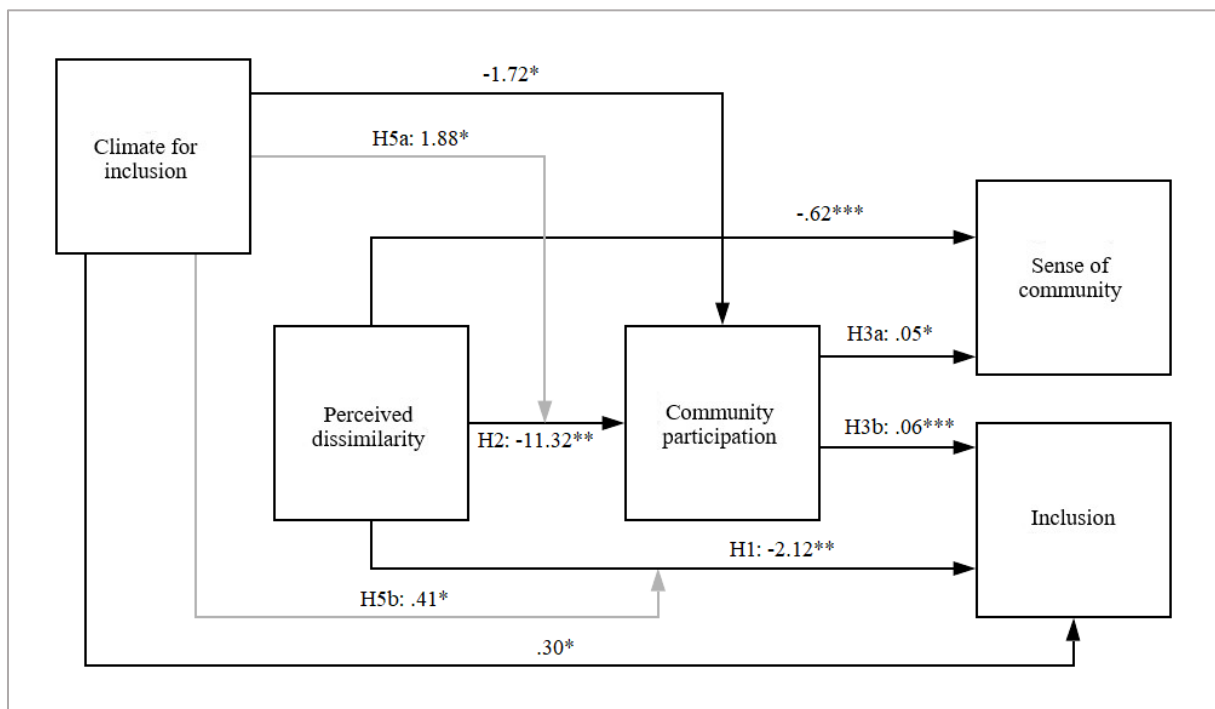
**Exploratory analyses.** Extra moderated mediation analyses were performed to find out whether community participation as a whole was associated with perceived dissimilarity, SOC, and inclusion, or if perhaps one of the two underlying concepts (student-faculty interaction and cocurricular activities) was mainly responsible for the relationships. This turned out to be the case, since moderated mediation analyses (model 7 and 8) with cocurricular activities as mediator showed almost no significant relationships. Only the direct relationships between perceived dissimilarity and SOC and inclusion (H1), and the moderating role of climate for inclusion on the relationship between perceived dissimilarity

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and inclusion (H5b) remained significant. In contrast, moderated mediation analyses with student-faculty interaction as mediator showed that all relationships remained significant, except the moderating role of climate for inclusion on the relationship between perceived dissimilarity and inclusion (H5b). See Appendix III for the results.

**Figure 3**

*The Found Relationships between the Variables, including Effect Sizes*



*Note.* Effect sizes of mediations (H4a & H4b) are not pictured. All effect sizes are *b*.

\* =  $p < .05$ , \*\* =  $p < .01$ , \*\*\* =  $p < .001$

## Discussion

This study investigated how sense of community and inclusion are related to perceived dissimilarity, community participation and climate for inclusion in Veterinary students at Utrecht University. Supporting hypothesis 1, perceived dissimilarity was found to be associated with a lower level of inclusion. Moreover, perceived dissimilarity was also related to SOC. Supporting hypothesis 2, perceived dissimilarity was found to be related to community participation. In addition, community participation was associated with both SOC (H3a) and inclusion (H3b). Furthermore, both the relationships between perceived dissimilarity and SOC, and between perceived dissimilarity and inclusion were mediated by



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the amount of hours students spent time on student-faculty interaction and cocurricular activities, which supports hypotheses 4a and 4b. The relationship between perceived dissimilarity and community participation was moderated by climate for inclusion, supporting hypothesis 5a. This means that in a positive environment where differences are allowed and appreciated, students who felt dissimilar to others participated just as much in the community as students who felt similar. In contrast, in a negative climate for inclusion, students who felt dissimilar participated less in the community than students who felt similar to others. Additionally, the relationship between perceived dissimilarity and inclusion was moderated by climate for inclusion, supporting hypothesis 5b. In a positive climate for inclusion, students who perceived themselves as dissimilar felt just as included as students who perceived themselves as similar to others. In contrast, in a negative climate for inclusion students who perceived themselves as dissimilar, felt less included than students who perceived themselves as similar to others.

### **Theoretical implications**

The relationship between perceived dissimilarity and community participation was explored, since some empirical research found a negative relationship between perceived dissimilarity and community participation (Cosley, Ludford, & Terveen, 2003; Guéguen, Martin, & Meineri, 2011; Hook, Baxter, & Kulczynski, 2020), while other empirical studies found a positive relationship (Ling et al., 2005; Ludford, Cosley, Frankowski, & Terveen, 2004). This study corroborates the theoretical and empirical research that indicated a negative relationship between perceived dissimilarity and community participation. A possible explanation for the contrasting empirical results can be found in differences in climate for inclusion. As was shown by this study, the more positive the climate for inclusion was, the weaker and more neutral the relationship between perceiving oneself as dissimilar and participating in the community was. Perhaps a positive climate for inclusion can in some cases even lead to dissimilar people participating more than similar people. Moreover, a direct negative relationship between climate for inclusion and community participation was found, meaning that a more positive climate for inclusion was associated with less community participation. A possible explanation could be that in a positive climate for inclusion, people perceive more equality and are therefore less inclined to spend their time in the community to fix the differences. In a negative climate for inclusion, with more perceived inequality and injustice, those people would possibly have devoted themselves to decrease these differences by participating in the community for more hours to try to fix the injustice from the inside.

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This can be supported by research on inequality and collective action (Corcoran, Pettinicchio, & Young, 2015). The study showed that people who view inequality as a result of injustice in society are more likely to take action than people who think the inequality is the product of laziness or luck. Because of the perceived injustice, they take action to improve the social conditions of the disadvantaged group. Climate for inclusion thus needs to be considered to understand the contrasting results of previous research on perceived dissimilarity and community participation.

Furthermore, since both SOC and inclusion are directly related to perceived dissimilarity, and the relationships are both mediated by community participation, it might look like they measure the same concepts. Even though they are theoretically distinct constructs, some items from the inclusion scale and the SOC scale showed cross-loadings in an exploratory factor analysis. These items were deleted to ensure that the scales assessed distinct concepts. Eventually SOC mostly distinguished itself by focusing on feeling at home in the faculty and sharing the same values and needs, while inclusion distinguished itself by focusing more on authenticity and the level of inclusion by teachers. SOC and inclusion are thus theoretically related, but not identical concepts. For future research it is recommended to look into SOC when the focus of the study is on belonging to a group or feeling at home in a community, while it is advised to look into inclusion when the focus is on being allowed to be oneself or being embraced by the community. Since SOC and inclusion focus on distinct aspects besides belonging, it is likely that different interventions are needed to boost the level of SOC and inclusion. However, community participation was found to be related to both concepts, and is therefore a suitable starting point.

Another relationship that was explored was the positive relationship between climate for inclusion and inclusion, regardless of perceived (dis)similarity. All students, no matter whether they perceived themselves as similar or dissimilar to others, felt more included in a positive climate for inclusion. A possible reason for this is that students who perceived themselves as similar might feel like they are allowed to be different, even though they do not feel different at the moment. They feel like they would still be accepted when they would deviate from the norm. Which is why a positive climate for inclusion would be beneficial for all organisational members.

### **Practical implications**

The model with the relationships between SOC and inclusion, and perceived dissimilarity, community participation and climate for inclusion, gives insight into ways to

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improve sense of belonging of students. This is important, because previous studies on sense of belonging in the student context showed that it increases academic performance and decreases the chance of dropout (Thomas, 2012; Walton & Cohen, 2007). Since perceived dissimilarity is hard to change, it is advised to focus on encouraging community participation by creating more options to participate, to make sure everyone has an option that appeals to them. Additionally, it is advised to focus on establishing a positive climate for inclusion.

Starting with community participation, it is suggested to increase participation by expanding options to participate. At the end of the questionnaire, participants were given the opportunity to leave a comment. Participants mentioned they did not feel part of the core group of students of the faculty, but that they were happy with their smaller group of friends where feelings of solidarity and connection are much larger. Furthermore, according to other participants most of the study associations are exclusive to a certain type of student, which makes them feel left out or simply not interested in joining. Moreover, someone mentioned that they feel like one study association in particular has a lot of influence on the culture of the faculty, especially because of their connections with the teachers. All of these comments suggest that there are students in the faculty who do not participate as much as they would have when there would be more types of study associations or smaller groups that appealed to them. Next to the comments of the participants, the finding that most of the relationships with community participation were more heavily influenced by the amount of student-faculty interaction than cocurricular activities should be taken into account. It suggests that especially activities within the faculty, such as participating in associations, committees, and faculty council are essential for feelings of belonging to the student community. Therefore, it is advised to make associations more accessible, even for people who deviate from the norm, according to the associations. Encourage boards of associations to organise all sorts of activities, in such a way that everyone can participate in an activity that appeals to them. Besides parties and so-called *borrels*, with lots of alcohol and student-like games, activities such as informative seminars about varying subjects or study sessions should be organised. Next to that, create possibilities for students to start their own small clubs with people who have a common interest, and promote those clubs. And above all: Encourage all associations and groups to organise activities such as lunch meetings, coffee breaks and movie nights, which makes joining them more approachable than it is now. Lastly, the faculty should ensure that all associations and groups are treated equally by teachers and the faculty in general, to make sure that the faculty culture will not be defined by one group of students.

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Furthermore, it was found that a positive climate for inclusion makes everyone feel included, regardless of perceived (dis)similarity. Therefore, it is advised to establish a positive climate for inclusion in the faculty, and preferably also in the study associations. Nishii and Rich (2014) created an action plan for organisations to enhance the inclusiveness of their climate. In short, they say that there are three dimensions that form the basis of a climate for inclusion: Organisational practices, interactions among employees, and objective characteristics of the work setting. The first dimension, organisational practices, sets an example of what is valued and rewarded in the organisation. Unfair and biased behaviour should be exposed and corrected, to send a message to the members that such behaviour is not desirable in the organisation. The second dimension, interactions among employees, entails organisational members getting to know the personal lives of other members. The reason for this is to ensure an integration strategy where the dominant group and nondominant groups all have to adapt, so individuals will not be forced to assimilate to the dominant culture. This way individuals can be their authentic selves. The third dimension, objective characteristics of the work setting, establishes inclusive decision-making. Organisational members who are mostly left out in decision-making, should be able to contribute by sharing their thoughts and ideas about organisational processes.

Based on the results of this study, these changes will cause a shift in the feeling of belonging for students. Expanding possibilities for community participation and establishing a positive climate for inclusion will have an effect on the level of both SOC and inclusion. Not only will it improve students' feelings of belonging to the student community, but also their perception that the group provides them with feelings of belonging and acceptance. The individual's perception of both themselves and the group will change for the better.

### **Limitations and future research**

Unfortunately, during the time this study was carried out, the global pandemic of COVID-19 led to the closing of all universities. So by the time the questionnaire was sent out, the participants had been working from home for several weeks. The questions were adjusted by asking the participants to base their answers on the first semester of the academic year. However, this could still have led to distorted results, because an expanded recall period increases the chance of recall error (Clarke, Fiebig, & Gerdtham, 2008). The long recall period makes it plausible that participants relied on their current perception of connection, which is most likely lower than before the pandemic. Therefore it is recommended to replicate

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(part of) this study when the students are able to go to class on campus again, to strengthen the findings.

Furthermore, the measurement of community participation could be a possible limitation. At the time of conducting the study, there was no validated questionnaire available yet for community participation. Therefore, two questions based on student-faculty interaction and cocurricular activities were used to measure community participation. Since every study uses another measurement for community, it is recommended to create and validate a measurement for community participation. That way, all future research to community participation will have the same foundation.

Lastly, the study was conducted in a faculty where the majority is female (89%) and the minority male (11%). In an environment where men are the majority and women the minority, the results might differ. This can be supported by the finding that women in male-dominated industries reported higher levels of pressure from discrimination than men in female-dominated industries (Gardiner & Tiggemann, 1999). The study shows that women in male-dominated industries face different burdens than men in female-dominated industries. This makes it possible that perceived dissimilarity, SOC, inclusion, community participation, and climate for inclusion work differently for environments where the majority are men than where the majority are women. Therefore it is recommended to find out whether these differences between male- and female-dominated environments affect the found relationships.

### **Conclusion**

All in all, this study aimed to contribute to understanding the relationship between perceived dissimilarity, sense of community, and inclusion among students. Students who perceived themselves as dissimilar to other students reported lower levels of SOC and inclusion than those who felt similar. However, participating in the community and having a positive climate for inclusion were related to higher levels of SOC and inclusion, and thus feelings of belonging to the student community. Therefore, possible intervention points based on community participation and climate for inclusion are discussed. By using the findings of this study to help students feel like they belong to the community, the social lives of students can be improved. Since feelings of belonging do not only boost students' personal lives, but also their academic lives, the social *and* academic lives of students can be changed for the better.

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## Appendices

### Appendix I – Measures

**Sense of community** – Sense of Community Index, student version (Obst & White, 2004, adapted from Perkins et al., 1990)

Likert scale ranging from 1 = ‘strongly disagree’ to 7 = ‘strongly agree’

1. I think my faculty is a good place for me to study.
2. People in this faculty do not share the same values. (R)
3. My fellow students and I want the same thing from the faculty.
4. I feel at home in this faculty.
5. Very few of my fellow students know me. (R)
6. I care about what my fellow students think about my actions.
7. I have almost no influence over what this faculty is like. (R)
8. If there is a problem in this faculty, people who study here can get it solved.
9. It is important to me to be a student at my faculty.
10. The people who study in this faculty get along well.

**Inclusion** – Perceived Group Inclusion Scale (Jansen, Otten, Van der Zee, and Jans, 2014)

This group...

1. ...gives me the feeling that I belong
2. ...gives me the feeling that I am part of this group
3. ...gives me the feeling that I fit in
4. ...treats me as an insider
5. ...likes me
6. ...appreciates me
7. ...is pleased with me
8. ...cares about me
9. ...allows me to be authentic
10. ...allows me to be who I am
11. ...allows me to express my authentic self
12. ...allows me to present myself the way I am
13. ...encourages me to be authentic
14. ...encourages me to be who I am
15. ...encourages me to express my authentic self
16. ...encourages me to present myself the way I am

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### Appendix II - Table 2

#### *Factor Loadings for Sense of Community and Inclusion after Rotation*

Item	Factor loadings			
	Factor 1	Factor 2	Factor 3	Factor 4
<b>Inclusion</b>				
1. De docenten en andere medewerkers van mijn faculteit geven mij het gevoel erbij te horen.		.51		
2. De docenten en andere medewerkers van mijn faculteit geven mij het gevoel erbij te passen.		.51		
3. De docenten en andere medewerkers van mijn faculteit zijn blij met mij.*		.53	.34	-.38
4. De docenten en andere medewerkers van mijn faculteit vinden mij leuk.		.38		-.55
5. De docenten en andere medewerkers van mijn faculteit staan me toe om mijn eigen zelf uit te drukken.		.71		
6. De docenten en andere medewerkers van mijn faculteit staan me toe om echt mijzelf te zijn.		.72		
7. De docenten en andere medewerkers van mijn faculteit moedigen mij aan om mijzelf te zijn.		.80		
8. De docenten en andere medewerkers van mijn faculteit moedigen mij aan om mijn eigen zelf uit te drukken.		.86		

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Item	Factor 1	Factor 2	Factor 3	Factor 4
9. De studenten van mijn faculteit geven mij het gevoel erbij te horen.*	.66		.33	
10. De studenten van mijn faculteit geven mij het gevoel erbij te passen.*	.66		.32	
11. De studenten van mijn faculteit zijn blij met mij.*	.58		.36	-.31
12. De studenten van mijn faculteit vinden mij leuk.*	.57		.36	-.40
13. De studenten van mijn faculteit staan me toe om mijn eigen zelf uit te drukken.	.71			
14. De studenten van mijn faculteit staan me toe om echt mijzelf te zijn.	.70			
15. De studenten van mijn faculteit moedigen mij aan om mijzelf te zijn.	.85			
16. De studenten van mijn faculteit moedigen mij aan om mijn eigen zelf uit te drukken.	.90			
<b>SOC</b>				
1. Ik denk dat mij faculteit voor mij een goede plek is om te studeren.			.53	
2. Mensen in deze faculteit delen niet dezelfde waarden. (R)			.36	
3. Mijn medestudenten en ik willen hetzelfde van de faculteit.			.48	
4. Ik voel me thuis binnen deze faculteit.			.61	
5. Erg weinig medestudenten kennen mij. (R)			.33	
6. Ik hecht waarde aan hoe medestudenten over mijn gedrag denken.*				.48
7. Ik heb bijna geen invloed op hoe het op deze faculteit gaat. (R)			.49	

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Item	Factor 1	Factor 2	Factor 3	Factor 4
8. Als er een probleem is in de faculteit, kunnen de mensen die hier studeren het oplossen.			.58	
9. Het is belangrijk voor mij dat ik een student aan mijn faculteit ben.			.36	
10. De mensen die in deze faculteit studeren kunnen goed met elkaar opschieten.*	.34		.51	
Eigenvalues	12.37	1.57	1.15	1.03
% of variance	47.57	6.02	4.41	3.96

*Note.* Factor loadings < .30 were left out. (R) indicates items that were recoded. \* indicates items that were deleted after the factor analysis.



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Appendix III – Table 3 & 4

**Table 3**

*Results of Moderated Mediation Analyses with Student-Faculty Interaction as Mediator*

	<i>b</i>	<i>t</i>	df	<i>p</i>	CI
<b>H1</b>	-1.78	-2.26	125	.026	[-3.34, -0.22]
<b>H2</b>	-17.67	-3.83	126	<.001	[-26.81, -8.53]
<b>H3a</b>	0.03	2.25	127	.026	[0.00, 0.06]
<b>H3b</b>	0.06	4.13	125	<.001	[0.03, 0.09]
<b>H4a</b>	-0.12	-	127	-	[-0.23, -0.04]
<b>H4b</b>	-0.21	-	125	-	[-0.34, -0.09]
<b>H5a</b>	3.21	3.12	126	.002	[1.17, 5.25]
<b>H5b</b>	0.34	1.97	125	.051	[-0.00, 0.68]
<b>PD → SOC</b>	-0.65	-4.36	127	<.001	[-0.94, -0.35]
<b>Cfi → CP</b>	-3.05	-3.79	126	<.001	[-4.64, -1.46]
<b>Cfi → Inclusion</b>	0.37	2.69	125	.008	[0.10, 0.64]

*Note.* PD = perceived dissimilarity, Cfi = climate for inclusion, CP = community participation.

**Table 4**

*Results of Moderated Mediation Analyses with Cocurricular Activities as Mediator*

	<i>b</i>	<i>t</i>	df	<i>p</i>	CI
<b>H1</b>	-2.73	-3.46	125	<.001	[-4.29, -1.17]
<b>H2</b>	-4.97	-0.90	126	.368	[-15.85, 5.91]
<b>H3a</b>	0.02	1.67	127	.098	[-0.00, 0.05]
<b>H3b</b>	0.02	1.59	125	.115	[-0.01, 0.05]
<b>H4a</b>	-0.06	-	127	-	[-0.17, 0.02]
<b>H4b</b>	-0.05	-	125	-	[-0.15, -0.08]
<b>H5a</b>	0.56	0.45	126	.651	[-1.87, 2.98]
<b>H5b</b>	0.52	2.96	125	.004	[0.17, 0.87]
<b>PD → SOC</b>	-0.70	-4.75	127	<.001	[-0.99, -0.41]
<b>Cfi → CP</b>	-0.40	-0.41	126	.679	[-2.29, 1.50]
<b>Cfi → Inclusion</b>	0.20	1.43	125	.156	[-0.08, 0.47]

*Note.* PD = perceived dissimilarity, Cfi = climate for inclusion, CP = community participation.