



The effect of the perception of group members' identity diversity on intragroup trust

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Abstract

In a specific group, each group member has multiple social identities, such as gender, nationality, ethnicity, and religion. Individuals may perceive their group members' identity diversity at different levels. Four studies were conducted to investigate the relationship between the perception of group members' identity diversity and intragroup trust. Studies 1 to 3 revealed that if participants perceived that group members differed in a wide range of social identities (a higher level of perceived identity diversity among group members), they exhibited a lower level of intragroup trust. Study 4 revealed that when participants were motivated to distrust their group members, they were more likely to perceive differences between group members' social identities and perceive the group members' identity diversity at a higher level. The results indicate that the relationship between the perception of group members' identity diversity and intragroup trust is bidirectional.

Keywords Intragroup trust · Identity diversity · Social identity

Trust is the willingness of individuals to accept vulnerability on the basis of positive expectations of the intentions or behaviors of another (Mayer et al. 1995). Intragroup trust is frequently used to refer to the aggregate levels of interpersonal trust that group members have in their groupmates (Bayissa et al. 2017; De Jong and Dirk 2012; Erdem and Ozen 2003; Langfred 2004; McAllister 1995). It is believed that intragroup trust plays an important role in the performance of groups (De Jong and Dirk 2012; Liu et al. 2016a; Simons and Peterson 2000; see a review of De Jong et al. 2016). Thus, a large amount of research has been dedicated to identifying the factors that either facilitate or hinder the development of

intragroup trust. Investigation of the relationship between group members' social identities and intragroup trust has been among the most significant areas of research. Most research has revealed that shared group identity or group membership is key to improving intragroup trust (e.g., Brewer 2008; Platow et al. 2012; Voci 2006). Alternatively, this study investigated the relationship between individuals' perception of group members' identity diversity and intragroup trust.

In social interactions, individuals may make decisions on the basis of any of the social identities that they and their partners have; i.e., individuals may decide whether to trust another group member based on either their shared group identity or other social identities, such as gender and political party. Most studies have found that individuals will exhibit higher levels of trust in people who share their social identities (e.g., Brewer 2008; Platow et al. 2012). For example, individuals will exhibit higher levels of trust toward in-group members than toward out-group members (e.g., Foddy et al. 2009; Niu et al. 2010; Tam et al. 2009; Tanis and Postmes 2005). Using the minimal group paradigm, researchers have also revealed that participants will exhibit higher levels of intragroup trust than intergroup trust even if the groups are divided on the basis of an arbitrary categorization criterion (Xin et al. 2016b; see Diehl 1990 for a review). In conclusion, shared group identity improves intragroup trust.

In studies that have investigated the effect of shared group identity on intragroup trust (e.g., Brewer 2008; Callahan and

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Ledgerwood 2016; Platow et al. 2012; Voci 2006), it is implicitly assumed that the shared group identity is the most salient (if not the only) social identity that affects intragroup trust. Although we agree regarding the effect of the shared group identity on intragroup trust, we are concerned that interactions among group members may be too simplified by this assumption. On the one hand, according to social identity and self-categorization theory (Turner et al. 1987), individuals may construe themselves in different social groups according to situational cues. For example, McCall and Dasgupta (2007) found that male participants who interacted with a female would describe themselves using more stereotypically masculine traits than those who interacted with a male. That is, the presence of a female partner increased the situational salience of gender. On the other hand, studies have shown that workgroup members are more willing to trust and cooperate with members who have similar demographic and cultural features than those who are demographically dissimilar (Chattopadhyay and George 2001; Loh et al. 2010). Because workgroup members already share a group membership, the results indicated that intragroup trust may be affected by multiple social identities that group members have.

Each person has multiple social identities, such as gender, nationality, ethnicity, religion, and shared group identity (Brewer et al. 2013; Tajfel and Turner 1986). Individuals may perceive a specific group on the basis of different social groups. For example, McCall and Dasgupta (2007) found that male group members who had a lower social status were more likely to perceive and interpret a group on the basis of gender than those who had a higher social status. The social dominance motivation made group members exhibit different attitudes toward the racial heterogeneity and occupational heterogeneity in a group (Unzueta et al. 2012). That is, individuals may perceive their group differently, and the perception of group members' identity diversity may affect intragroup trust. This study investigated how intragroup trust was affected by an individual's perception of the variance in their group members' social identities.

We expected a negative relationship between the perception of group members' identity diversity and intragroup trust. According to social identity theory (Hogg and Abrams 1998), when individuals believe that their values and characteristics match those of a group and group members, they will feel a higher level of group identity (Brewer et al. 2004; Cable and DeRue 2002; Callahan and Ledgerwood 2016; Ip et al. 2006; Lickel et al. 2001). The shared group identity indicates the similarity in group members' social identities and thus can improve intragroup trust. In contrast, group members' identity diversity indicates the differences between group members' social identities and thus may negatively impact intragroup trust (Byrne 1971; Chattopadhyay and George 2001; Loh et al. 2010). The perception of group members' identity diversity refers to the extent to which individuals think their

groupmates have different social identities. If individuals think their group members are different in a wide range of social identities, they may feel a lower level of similarity among group members and exhibit a lower level of intragroup trust. It was hypothesized that participants who perceive their group members' identity diversity as high are more likely to exhibit a lower level of intragroup trust.

The logic described above suggests that the perception of group members' identity diversity negatively affects intragroup trust. We may wonder whether group members are more likely to think about the differences between their social identities when they are motivated to distrust each other. According to social identity theory (Hogg and Abrams 1998), individuals who exhibit a higher level of group identity are more likely to think that the group members are similar to each other and thus are interchangeable in cognition and affect. Because intragroup trust is frequently positively correlated with group identity (Brewer 2008; Turner et al. 1987; Tu et al. 2017), intragroup trust may also affect the perceived similarity of personal traits and social identities among group members. Specifically, if individuals in a specific group have a higher level of intragroup trust, they will perceive a higher level of similarity among their group members. Accordingly, we expected that the relationship between the perception of group members' identity diversity and intragroup trust may be bidirectional. That is, participants who perceive that their group members are different in a wide range of social identities will exhibit a lower level of intragroup trust, and participants who are motivated to distrust their group members will be more likely to perceive group members' identity diversity as high.

Current Research

This study divided the perception of group members' identity diversity into high and low levels. In a specific group, if individuals perceive that group members' social identities differ in a wide range of social identities, such as gender, profession, ethnicity, religion, and political party, the individuals' perception of group members' identity diversity will be defined as high; if individuals perceive that group members' social identities differ in some ways, such as in gender and profession, this perception level will be defined as low. We would like to note that the division of the perceived diversity into high and low is just for the convenience of experiment. In fact, individuals may perceive group members' identity diversity in a continuum. If individuals think that the group membership is the only social identity that their groupmates have, the level of the perception of group members' identity diversity will reach the lowest level. It is also possible that individuals perceive that their group members are different in any number of social groups. The manipulation of the division was also adopted

in studies about self-concept and social identity complexity (Gresky et al. 2005; Xin and Zhang 2018; Xin et al. 2016a, b).

Four studies were conducted to investigate the relationship between the perception of group members' identity diversity and intragroup trust. Study 1 first activated the perception of group members' identity diversity among college students at either high (the high identity diversity condition) or low levels (the low identity diversity condition) and then measured their intraclass trust. We predicted that participants in the high identity diversity condition would exhibit lower levels of intragroup trust than those in the low identity diversity condition. Study 2 investigated whether the effect of the perception of group members' identity diversity on intragroup trust existed among male servicemen. Study 3, after controlling for the effect of participants' general trust, examined the effect of the perception of group members' identity diversity on behavioral trust tendencies. Study 4 examined whether college students were more likely to think about the differences between their classmates' social identities when they were motivated to distrust each other.

Study 1

Study 1 first activated college students' perception of group members' identity diversity at either high or low levels by drawing group members' identity map that developed from a self-concept map (Gresky et al. 2005; Xin et al. 2016a, b). Then, participants' intragroup trust was measured using a 7-point scale. Intragroup trust was operationalized as college students' intraclass trust. It was hypothesized that participants who perceived their group members' identity diversity as high would exhibit a lower level of intragroup trust than participants who perceived that their group members' identity diversity was low.

Method

Participants

One hundred and three college students (50 females) participated in the experiment. Their mean age was 19.42 years ($SD = 1.22$). Participants were randomly assigned to either a high or low identity diversity condition. Each participant received a pen as compensation. According to a priori power analysis conducted using G*Power software (Faul et al. 2007), for a significance level of $\alpha = .05$, a power of 80% and an effect size d of .50, the sample size should be 102 participants with 51 participants in each condition. Therefore, the sample size was sufficient.

Procedure and Materials

To manipulate the perception of group members' identity diversity, we developed a method of drawing group members' identity map from a self-concept map (Gresky et al. 2005; Xin et al.

2016a, b). In a self-concept map, a central circle represents the self, with marginal nodes and pathways between the nodes branching out from the central circle to represent social identities. In the group members' identity map (see Fig. 1a and b for illustrations), a central circle represents the group, with marginal nodes and pathways between the nodes branching out from the central circle to represent the differences between group members' social identities based on different social groups. For example, the marginal node labeled "Gender" and the following interpretations of "Men, Women" indicate that the group contains both men and women. The level of group members' identity diversity equals the number of marginal nodes that branch out from the central circle.

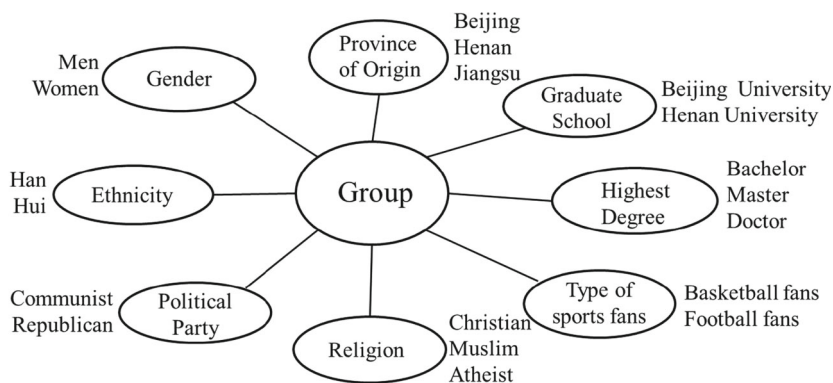
Participants were randomly assigned to either a high or low identity diversity condition. Intragroup trust was operationalized as participants' intraclass trust. Therefore, in the group members' identity map drawing task, participants in the high identity diversity condition were instructed to draw the most comprehensive differences between their classmates, and participants in the low identity diversity condition were instructed to draw the most basic and important differences between their classmates. Participants had to think about the differences in their group members' social identities but not the differences in their personality traits. Participants who wrote non-social identity nodes were removed from the data analysis. The procedure was illustrated to participants by a group member identity map with either 8 (Fig. 1a, which depicts the high identity diversity condition) or 3 (Fig. 1b, which depicts the low identity diversity condition) marginal nodes that branched out from the central circle. Participants were instructed that they could draw any differences between group members' social identities but did not need to be limited to the illustrations presented to them. We expected that the illustrations would activate participants to perceive their own group members' identity diversity at high and low levels.

Intragroup trust may be divided into cognition-based trust and affect-based trust (Erdem and Ozen 2003; McAllister 1995; Webber 2008). In this study, participants were asked to evaluate their intraclass trust on 6 items from 1 (*completely disagree*) to 7 (*completely agree*). A principal component analysis (with varimax rotation) showed a two-factor solution (Table 1). The first factor comprised the former three items about cognition-based trust, while the second factor comprised the latter three items about affect-based trust. The two factors accounted for 71.39% of the entire variance. Internal reliability analyses showed that Cronbach's alpha was .82 for the overall scale, .83 for cognition-based trust and .76 for affect-based trust. Thus, we used the mean score of the 6 items to represent participants' intraclass trust. A higher score indicates a high level of intraclass trust.

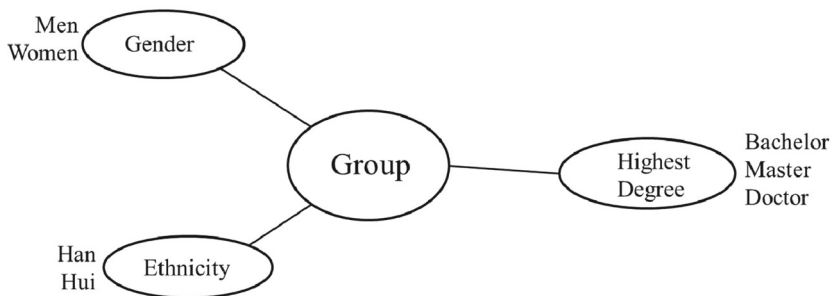
Results and Discussion

We first checked whether the manipulations of the perception of group members' identity diversity were effective. An

Fig. 1 a The Illustration of the High Identity Diversity Condition. b. The Illustration of the Low Identity Diversity Condition



(a). The Illustration of the High Identity Diversity Condition



(b). The Illustration of the Low Identity Diversity Condition

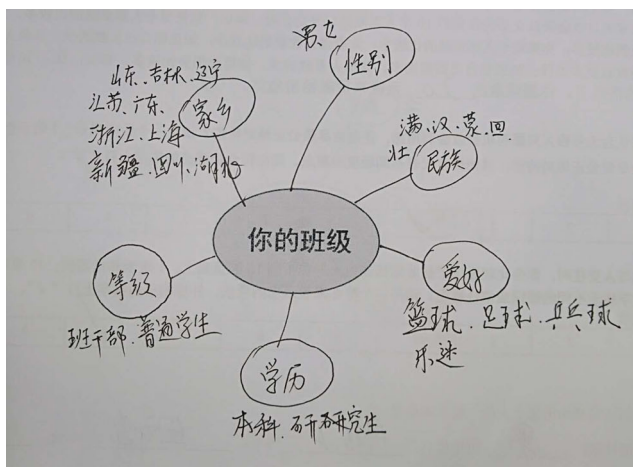
independent *t*-test showed that participants in the high identity diversity condition drew more marginal nodes ($M = 6.44$, $SD = 2.44$) than did those in the low identity diversity condition ($M = 3.53$, $SD = 1.39$), $t(101) = 7.43$, $p < .001$. That is, the manipulations of the perception of group members' identity diversity were effective. Two examples of participants' reactions are presented in Fig. 2. (Figure 2a is an example of participant's reactions in the high identity diversity condition; Fig. 2b, the low identity diversity condition.)

To investigate the effect of the perception of group members' identity diversity on intragroup trust, independent *t*-tests

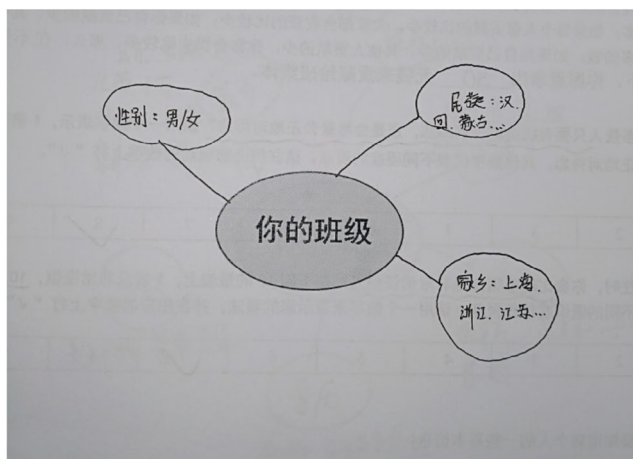
on participants' intraclass trust, cognition-based trust, and affect-based trust in the two conditions were conducted. The results showed that participants in the high identity diversity condition exhibited lower levels of intraclass trust ($M = 5.02$, $SD = 0.84$) than did participants in the low identity diversity condition ($M = 5.43$, $SD = 0.84$), $t(101) = 2.50$, $p < .05$, Cohen's $d = 0.49$, 95% confidence interval (CI) = [0.08, 0.74]. Participants in the high identity diversity condition exhibited lower levels of affect-based trust ($M = 4.94$, $SD = 1.08$) than did participants in the low identity diversity condition ($M = 5.46$, $SD = 0.86$), $t(101) = 2.68$, $p < .01$, Cohen's $d =$

Table 1 Factor Analysis Results for the Scale of College Students' Intra-class Trust

Items	Factor loadings		Communalities
	Cognition-based trust	Affect-based trust	
My classmates can cooperate with each other.	.87		.82
My classmates can communicate well with each other.	.83		.75
In general, my classmates can accomplish team-work.	.81		.68
I feel comfortable when staying with my classmates.		.79	.70
I trust the promises of my classmates.		.79	.66
In team works, I feel my class is a real team.		.81	.68



(a). An example of Participant's Reactions in the High Identity Diversity Condition



(b). An example of Participant's Reactions in the Low Identity Diversity Condition

Fig. 2 **a** An example of Participant's Reactions in the High Identity Diversity Condition. **b** An example of Participant's Reactions in the Low Identity Diversity Condition

0.49, 95% CI = [0.13, 0.90]. However, there was no significant difference between the cognition-based trust of participants in the high identity diversity condition ($M = 5.10$, $SD = 0.90$) and that of participants in the low identity diversity condition ($M = 5.41$, $SD = 1.06$), $t(101) = 1.60$, $p > .05$. It is concluded that participants who perceived their group members' identity diversity at a higher level were more inclined to exhibit a lower level of intraclass trust and affect-based trust but not cognition-based trust.

Study 2

Study 1 first demonstrated that individuals who perceived their group members' identity diversity at a higher level exhibited a lower level of intragroup trust. To increase the

validity of the experiment, Xin (2017) suggested that more subjective samples beyond college students should be used in research. Therefore, Study 2 aimed to replicate the results of Study 1 in a sample that was composed of servicemen. It was hypothesized that servicemen who perceived their group members' identity diversity at a higher level would exhibit a lower level of intragroup trust.

Method

Participants

One hundred and thirty-five male servicemen ($M_{\text{age}} = 23.59$, $SD = 2.99$) participated in the experiment. Their mean number of years of military service was 3.16 ($SD = 1.80$). Among them, there were 56 soldiers ($M_{\text{age}} = 21.77$, $SD = 2.75$; $M_{\text{service-year}} = 3.58$, $SD = 2.71$) and 79 captains or lieutenants ($M_{\text{age}} = 24.78$, $SD = 2.52$; $M_{\text{service-year}} = 2.87$, $SD = 0.63$). Participants were randomly assigned to either a high or low identity diversity condition. In accordance with the power analysis described in Study 1, the sample size was sufficient.

Procedure and Materials

The procedure was identical to that in Study 1 except that participants' intragroup trust was measured by the Scale of Team Trust in Basic Unit of Combat Troops which contains 16 items (Liu et al. 2016b). In Liu et al.'s study, with a sample of 369 male servicemen, the results indicated a two-factor solution: interpersonal trust and institutional trust. Interpersonal trust indicates team trust that originates from the accumulation of interaction experiences among team members, whereas institutional trust indicates team trust that originates from servicemen's identification with military institutions in the troop. The two factors accounted for 50.59% of the entire variance. Cronbach's alpha was .89 for the overall scale, .87 for interpersonal trust and .83 for institutional trust. In this study, a principal component analysis (with varimax rotation) also showed a two-factor solution (Table 2). The first factor comprised the former eight items about interpersonal trust, while the second factor comprised the latter eight items about institutional trust. The two factors accounted for 59.48% of the entire variance. Internal reliability analyses showed that Cronbach's alpha was .91 for the overall scale, .90 for interpersonal trust and .88 for institutional trust. Thus we used the mean score of the 16 items to represent participants' intragroup trust. A higher score indicates a higher level of intragroup trust.

Results and Discussion

We first checked whether the manipulations of the perception of group members' identity diversity were effective. An

Table 2 Factor Analysis Results for the Scale of Team Trust in Basic Unit of Combat Troops

Items	Factor loadings		Communalities
	Interpersonal trust	Institutional trust	
My comrades-in-arms know their roles and responsibilities well.	0.81		.69
My comrades-in-arms have the capabilities that they should have.	0.85		.73
My comrades-in-arms can cooperate with each other.	0.71		.51
In general, my comrades-in-arms can accomplish team--work.	0.57		.33
I trust my comrades-in-arms and feel comfortable when staying with them.	0.69		.63
My comrades-in-arms joke around a lot and we have a harmonious relationship.	0.77		.64
My comrades-in-arms can communicate well with each other.	0.77		.65
I trust the promises of my comrades-in-arms.	0.73		.59
The institutions in our troop are reasonable.		0.71	.60
The institutions in our troop are fair and without prejudice.		0.45	.43
The institutions in our troop are executed effectively.		0.81	.70
Our troop can ensure us the necessary economic welfare.		0.85	.72
I strongly identify with the values of our troop.		0.81	.74
I do not mind undertaking extra work or responsibility.		0.41	.41
In the troop, I can make progress in my career by working hard.		0.71	.50
I strive hard to be an excellent serviceman.		0.76	.64

independent *t*-test showed that participants in the high identity diversity condition drew more marginal nodes ($M = 6.66$, $SD = 2.30$) than did those in the low identity diversity condition ($M = 3.21$, $SD = 1.13$), $t(133) = 11.18$, $p < .001$. That is, the manipulations were effective.

To investigate the effect of the perception of group members' identity diversity on servicemen's intragroup trust, independent *t*-tests on participants' intragroup trust, interpersonal trust, and institutional trust in the two conditions were conducted. The results showed that participants in the high identity diversity condition exhibited lower levels of intragroup trust ($M = 5.17$, $SD = 0.93$) than did participants in the low identity diversity condition ($M = 5.59$, $SD = 0.95$), $t(133) = 2.57$, $p < .05$, Cohen's $d = 0.45$, 95% CI = [0.10, 0.74]. Participants in the high identity diversity condition exhibited lower levels of institutional trust ($M = 4.94$, $SD = 1.18$) than did participants in the low identity diversity condition ($M = 5.53$, $SD = 1.13$), $t(133) = 2.96$, $p < .01$, Cohen's $d = 0.45$, 95% CI = [0.19, 0.98]. However, there was no significant difference between the interpersonal trust of participants in the high identity diversity condition ($M = 5.40$, $SD = 0.91$) and that of participants in the low identity diversity condition ($M = 5.65$, $SD = 1.06$), $t(133) = 1.43$, $p > .05$. It is concluded that servicemen who perceived their group members' identity diversity at a higher level were more inclined to exhibit a lower level of intragroup trust and institutional trust but not interpersonal trust.

Intragroup trust is frequently viewed as the aggregate level of interpersonal trust among group members (e.g., Erdem and Ozen 2003; McAllister 1995; Webber 2008). Liu et al. (2016b) proposed that institutional trust plays a specific role in military groups; thus, they developed a two-dimensional scale for intragroup trust in military groups. According to their view, the interpersonal trust subscale is similar to the measurement of intragroup trust in Study 1. However, the results of Study 2 indicated that the perception of group members' identity diversity did not affect the interpersonal trust of military groups significantly, which was inconsistent with the findings of Study 1.

Using male servicemen as participants, Study 2 again demonstrated the negative effect of the perception of group members' identity diversity on intragroup trust. However, several factors may limit the reliability of Studies 1 and 2. First, studies 1 and 2 both measured participants' intragroup trust on trust scales, which may cause a common method bias. Second, participants' general trust may confuse the results of Studies 1 and 2. Therefore, Study 3 further examined the effect of the perception of group members' identity diversity on intragroup trust.

Study 3

Study 3 aimed to examine the reliability of the results of Studies 1 and 2. This study investigated the effect of the

perception of group members' identity diversity on participants' behavioral trust tendencies in a hypothetical trust game (Buchan and Croson 2004; Xin et al. 2016a). It included participants' general trust as a controlled variable in the data analysis.

Method

Participants

One hundred and twenty-two college students (82 females, $M_{\text{age}} = 21.52$, $SD = 2.82$) were randomly assigned to either a high or a low identity diversity condition. All participants were given partial course credit for participation. As described in Study 1, the sample size was determined by a priori power analysis.

Procedure and Materials

First, participants' general trust was measured by a 3-item scale (Xin and Liu 2013). The score on the scale ranges from 0 to 3, and a higher score indicates a higher level of general trust. Second, participants were randomly assigned to either a high or a low identity diversity condition to complete the group members' identity map drawing task. Finally, participants' behavioral trust tendencies in relation to their group members were measured by a trust game survey (Buchan and Croson 2004; Xin et al. 2016a, b), the instructions on which were as follows:

“Now, you will complete a hypothetical decision-making task as you interact with one of your classmates, B. You and B did not know each other. Your identity and personal information are mutually confidential, and the decision you will make is also confidential. In the game, you and B each have ¥100. You can choose to send B ¥ n , $0 \leq n \leq 100$. If you send ¥ n to B, B will get ¥ $3n$. Then, B can choose to return ¥ m to you, $0 \leq m \leq 3n$.”

Next, participants needed to answer the following questions by filling in each blank with a number:

- (1) You can send at most ¥_____ to B, you can send at least ¥_____ to B. If you send ¥30 to B, B will get ¥_____. B can return at most ¥_____ to you, and return at least ¥_____ to you.
- (2) Now you decide to send ¥_____ to B. You guess B will return ¥_____ to you.

The first problem was used to test whether the participants understood the decision-making procedure. We selected only participants who gave the right answer to the first problem.

The second problem was used as the measure for participants' behavioral trust tendencies. Both the amount invested and the expected amount returned indicated participants'

intragroup trust tendencies (Ben-Ner and Halldorsson 2010; Liu 2018). A larger amount indicates a higher level of intragroup trust.

Results and Discussion

We first checked whether the manipulations of the perception of group members' identity diversity were effective. An independent *t*-test showed that participants in the high identity diversity condition drew more marginal nodes ($M = 4.66$, $SD = 1.63$) than did those in the low identity diversity condition ($M = 2.85$, $SD = 1.26$), $t(120) = 6.85$, $p < .001$. That is, the manipulations of the perception of group members' identity diversity were effective.

To investigate the effect of the perception of group members' identity diversity on intragroup trust, independent *t*-tests on the amount invested and the expected amount returned in the two conditions were conducted respectively. The results showed that participants in the high identity diversity condition exhibited lower levels of expected amount returned ($M = 78.00$, $SD = 46.59$) than did participants in the low identity diversity condition ($M = 100.92$, $SD = 70.57$), $t(120) = 2.12$, $p < .05$, Cohen's $d = 0.38$, 95% CI = $[-44.29, -1.55]$. However, the difference between the amount invested between participants in the high identity diversity condition ($M = 49.76$, $SD = 26.24$) and participants in the low identity diversity condition ($M = 56.47$, $SD = 27.15$) failed to reach a significance level, $t(120) = 1.39$, $p > .05$.

Then, we added participants' general trust as a control variable in data analyses, and the results also showed a significant difference between the expected amount returned in two conditions ($F(1, 119) = 4.36$, $p < .05$). There was no significant difference between participants in the amount invested ($F(1, 119) = 1.83$, $p > .05$). It is concluded that participants who perceived their group members' identity diversity at a higher level expected a lower return from their classmates, while participants' willingness to invest was not significantly affected.

In general, Studies 1 to 3 supported the hypothesis that individuals who perceived that their group members were different in a wide range of social identities would exhibit a lower level of intragroup trust. Study 4 investigated whether group members are more likely to think about the differences between their social identities when they are motivated to distrust each other.

Study 4

Studies 1 to 3 demonstrated the negative effect of the perception of group members' identity diversity on intragroup trust. Study 4 examines whether participants are more likely to perceive their group members' identity diversity as high when

they are motivated to distrust each other. In this study, we first activated college students' varying levels of intragroup trust by asking participants to recall situations in which their classmates either trusted or distrusted each other. Then, we asked participants to draw a group member identity map of their class. It was hypothesized that participants in the low intragroup trust condition would draw more marginal nodes than those in the high intragroup trust condition.

Method

Participants

Seventy-three college students (49 females, $M_{\text{age}} = 19.05$, $SD = 0.85$) were randomly assigned to either a high or a low intragroup trust condition. All participants were given partial course credit for their participation. This study did not use a priori power analysis.

Procedure and Materials

To manipulate the levels of perceived intragroup trust, participants were first asked to recall situations in which their classmates either trusted (high intragroup trust condition) or distrusted each other (low intragroup trust condition). Then, participants were asked to evaluate the intraclass trust level from 1 (highly distrusting) to 7 (highly trusting). Finally, participants were presented an illustration of the group member identity map with 4 marginal nodes and were asked to draw a group member identity map of their own class.

Results and Discussion

We first checked whether the manipulations of intragroup trust were effective. An independent t -test on the check item of intragroup trust showed that participants in the high intragroup trust condition reported higher levels of trust ($M = 6.39$, $SD = 0.85$) than did participants in the low intragroup trust condition ($M = 3.34$, $SD = 0.80$), $t(71) = 15.69$, $p < .001$. That is, the manipulations of intragroup trust were effective.

To investigate the effect of intragroup trust on the perception of group members' identity diversity, an independent t -test on the number of marginal nodes that participants drew in the two conditions was conducted. The results showed that participants in the high intragroup trust condition drew fewer marginal nodes ($M = 3.68$, $SD = 1.60$) than did participants in the low intragroup trust condition ($M = 4.66$, $SD = 1.55$), $t(71) = 2.64$, $p < .01$, Cohen's $d = 0.62$, 95% CI = [0.24, 1.71]. It is concluded that participants were more likely to think about the differences between their group members' social identities when they are motivated to distrust each other.

General Discussion

In a specific group, each group member has multiple social identities, such as gender, nationality, ethnicity, political party, and shared group membership. Studies 1 to 3 first found that the perception of group members' identity diversity may have an impact on intragroup trust. That is, individuals who perceive their group members' identity diversity at a higher level are more inclined to exhibit a lower level of intragroup trust. Study 4 revealed that when participants were motivated to distrust their group members, they were more likely to recognize the differences between group members' social identities.

The relationship between group members' social identities and intragroup trust has been among the most significant areas of research. In social interactions, individuals must frequently decide whether to trust others on the basis of their social identities (Kramer 1999; Scheepers and Derks 2016; Tajfel and Turner 1986). According to social identity theory, when individuals believe that their values and characteristics match that of a group and group members, they will feel a higher level of group identification (Brewer et al. 2004; Cable and DeRue 2002; Callahan and Ledgerwood 2016; Tajfel and Turner 1986). A shared group identity indicates the similarity of group members' social identities and thus can improve intragroup trust (Brewer 2008; Callahan and Ledgerwood 2016; Platow et al. 2012; Voci 2006). Despite the impact of the shared group identity, intragroup trust may be affected by multiple social identities that group members have. That is, the perception of group members' identity diversity may affect intragroup trust.

The perception of group members' identity diversity refers to the extent to which individuals think their groupmates are different. We expected a negative relationship between the perception of group members' identity diversity and intragroup trust. Studies 1 to 3 supported this hypothesis by showing that participants in the high identity diversity condition exhibited lower levels of intragroup trust than did participants in the low identity diversity condition. However, the results of Studies 1 and 2 were inconsistent. Specifically, Study 1 revealed a significant effect of the perception of group members' identity diversity on intragroup trust, a form of interpersonal trust among group members, while Study 2 failed to reveal the effect of the perception on interpersonal trust in military groups. Liu et al. (2016b) suggested that institutional trust, which indicates servicemen's identification with military institutions in the troop, plays a specific role in military groups. According to Hogg's (2007) view, uncertainty would improve group identification and intragroup trust. Thus, the inconsistency between the results of Studies 1 and 2 may indicate the professional characteristics of servicemen, such as a high level of risk and uncertainty. Future studies may investigate the factors that moderate the effect of the perception of group members' identity diversity on intragroup trust in different samples.

Moreover, Study 4 revealed that individuals are more likely to perceive group members' identity diversity as high when they are motivated to distrust each other. The results indicate that the relationship between the perception of group members' identity diversity and intragroup trust is bidirectional. On the one hand, the higher the level of group members' identity diversity perceived by group members, the lower the level of intragroup trust that the group members exhibited (Studies 1 to 3). On the other hand, the lower the perceived level of intragroup trust, the higher the perceived level of group members' identity diversity (Study 4). Researchers have proposed that the interaction experience among group members is an important factor in the development of intragroup trust (Liu et al. 2016a, 2016b; McAllister 1995). The results suggested that both the experience of trusting in group members and the perception of the similarity among group members' identities may improve intragroup trust.

On the basis of the self-concept map (Gresky et al. 2005; Xin et al. 2016b), this research developed a method to activate and evaluate the perception of group members' identity diversity. Although the results suggested the validity of the method, several limitations may be noted. For example, first, some study participants wrote non-social identity nodes. Because the current research aimed to investigate the relationship between the perception of group members' identity diversity and intragroup trust, those participants were removed from the data analysis. Future studies may investigate a better way to analyze the data of those participants. Second, participants' reactions in the task may be limited by the illustrations presented to them. For example, of the 360 participants of Studies 1 to 3, only 87 participants wrote more nodes than the nodes of illustrations (3 nodes in the low identity diversity condition and 8 nodes in the high identity diversity condition). Third, the perception of group members' identity diversity may be affected by the number of objective social identities that group members have. How to incorporate the objective social identities of individuals in this method may be investigated further.

The theoretical and practical implications of this research may be substantial. First, this research proposed and investigated the relationship between the perception of group members' identity diversity and intragroup trust. It thus not only goes beyond previous studies on the role of group members' multiple social identities in intragroup trust but also addresses the limitations of previous studies on intragroup trust, which have focused merely on the effect of the similarity among group members on intragroup trust (e.g., Brewer 2008; Brewer et al. 2004; Ip et al. 2006; Platow et al. 2012). Second, the present research has important practical implications with respect to improving intragroup trust. Groups increasingly consist of members who have different social identities and professions, which may decrease similarity among group members and thus inhibit intragroup trust. According to the present study, to improve intragroup trust, it is important to

activate lower levels of perceived group members' identity diversity and to motivate group members to consider situations in which they trust each other.

Some questions should be addressed in further research. For example, future research may distinguish between the perception of group members' identity diversity and objective identity diversity. Moreover, the relationship between the perception of group members' identity diversity and intragroup trust may be examined in relation to more group contexts and trust measurements. Finally, this research did not use a control group. To investigate the impact of the perception of group members' identity diversity, a control group that emphasizes the shared group identity may be included.

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Compliance with Ethical Standards

Conflict of Interest On behalf of all authors, the corresponding author states that there is no conflict of interest.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

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