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RESEARCH ARTICLE

The road less travelled: An exploratory study of the association between top management team dissimilarity and innovation capability

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Abstract

This study extends the upper echelons literature by shedding light on the role of top management team (TMT) dissimilarity, a specific conceptualization of team diversity. TMTs are typically composed of members from different functional areas who have unique information and values. The perception of the degree to which TMT members view themselves as dissimilar from other team members affects the TMT's decision-making and, therefore, organizational outcomes. However, research does not address this perspective of TMT diversity. We examine how informational and value dissimilarity among TMT members is associated with incremental and radical innovation capability. We survey top managers from various industries and use partial least squares structural equation modeling analysis to explore the association between TMT dissimilarity and innovation capability empirically. The findings show that informational dissimilarity is positively associated with incremental innovation capability. Value dissimilarity is negatively associated with incremental innovation capability, whereas it is positively associated with radical innovation capability.

Keywords: informational dissimilarity; value dissimilarity; TMT; innovation capability; diversity

Introduction

The current labor market challenges human resources because employees who have the required skills are difficult to find (Hansen & Hauff, 2019; Jackson, 2017; Priebe, 2023). In response, HR managers increasingly hire talent from groups that have been underrepresented in organizations, resulting in new hires from these groups in the US exceeding majority hires for the first time in 2019 (Long & van Dam, 2019). Consequently, organizations' teams have become more diverse (Homan, Buengeler, Eckhoff, van Ginkel, & Voelpel, 2015; Wallace, 2021). Diverse teams vary in terms of age, educational background, ethnic affiliation, disability, or gender (Guillaume, Dawson, Otaye-Ebede, Woods, & West, 2017; Van Knippenberg & Mell, 2016), increasing the amount of unique information and values in teams.

Research identifies manifold positive outcomes of team diversity (Horwitz & Horwitz, 2007; Joshi & Roh, 2009; Tasheva & Hillman, 2019). Team diversity enables teams to approach tasks from multiple viewpoints and improves creativity, problem-solving, and decision-making (Chen, Xie, & Zhou, 2020; Kim & Song, 2021; Smulowitz, Becerra, & Mayo, 2019; Yao, Liu, & He, 2022). These findings are grounded in the variety perspective on team diversity, which focuses on how team diversity contributes to the team's proficiency and ability to process information (Harrison & Klein, 2007).

However, team diversity can also be viewed from a separation perspective, which focuses on how dissimilarity among team members separates them from each other and hinders collaboration (Harrison & Klein, 2007; Van der Vegt, van de Vliert, & Oosterhof, 2003). These two perspectives of within-team diversity as variety or separation also have different implications for outcomes: Team diversity from the variety perspective is associated with positive outcomes, including creativity and high-quality decision-making, while the separation perspective is associated with negative outcomes like low cohesiveness and low task performance (Harrison & Klein, 2007). Team dissimilarity is a way of conceptualizing team diversity from a separation perspective (Van der Vegt et al., 2003) and we use the term to distinguish the variety perspective (i.e., team diversity) from the separation perspective (i.e., team dissimilarity). The majority of research associates team dissimilarity with negative outcomes because perceived dissimilarity among team members leads to categorization processes (Ambady, Bernieri, & Richeson, 2000; Hogg & Terry, 2000; Zellmer-Bruhn, Maloney, Bhappu, & Salvador, 2008). Following the social categorization perspective, the categorization leads to splitting teams into subgroups (Hogg, 2001; Tajfel, Billig, Bundy, & Flament, 1971). Those subgroups are distinct from one another and lack intergroup communication and coordination (Brickson, 2000). Thus, teams whose dissimilarity separates team members from one another rather than how diversity can add to the team's proficiency are associated with reduced problem-solving and decision-making skills (Brickson, 2000).

These negative team outcomes are especially harmful in the top management team (TMT) because, following upper echelons theory (Hambrick & Mason, 1984), TMT members' characteristics, such as the information and values they hold, are determinants of the organization's strategic orientation, including the scope of innovation activities (Schubert & Tavassoli, 2020). In addition, TMTs are inherently diverse, as TMT members' functional backgrounds typically differ, with specialized knowledge rooted in the information they have and unique perspectives that are rooted in their values. Consequently, TMTs are typically characterized by informational and value dissimilarity (Miller, Chiu, Wesley, Vera, & Avery, 2022; Narayan, Sidhu, & Volberda, 2021). However, research on TMT diversity is largely one-sided. Much of the upper echelons literature takes the variety perspective focusing on how diversity enables the TMT to use a greater amount of information and values (e.g., Belderbos, Lokshin, Boone, & Jacob, 2022; Mihalache, Jansen, van den Bosch, & Volberda, 2012; Talke, Salomo, & Kock, 2011). Literature taking the separation perspective that focuses on how information or value dissimilarity may split the TMT and may cause harm for organizations is lacking (Song, He, & Yan, 2022). Examining the other side of the coin by taking the separation perspective and investigating TMT dissimilarity is necessary to get a more holistic picture of TMT diversity and its association with innovation capability.

To the best of our knowledge, the present study is the first to fill this research gap by exploring *how informational and value dissimilarity between TMT members is associated with innovation capability*. The study focuses on innovation capability since it bridges the willingness to pursue an innovation strategy with the successful implementation of innovation activities (Smith, Busi, Ball, & van der Meer, 2008), that contribute to innovation performance and firm performance (e.g., Samson, Gloet, & Singh, 2017; Yeşil, Büyükbeşe, & Koska, 2013). In line with recent studies, we distinguish innovation capability into incremental and radical innovation capability (Forés & Camisón, 2016; Gui, Lei, & Le, 2022; Liu, 2021) and conduct an exploratory study with TMT members from various industries in Germany.

The study sheds light on the complex association of the co-occurrence of informational and value dissimilarity with innovation capability. We add to the upper echelons literature by taking a separation perspective on TMT diversity, integrating the separation perspective of team diversity with upper echelons theory in the context of innovation capability. Furthermore, by distinguishing informational dissimilarity from value dissimilarity, we add to the scarce empirical literature on the role of differences in TMT member's values. The study also adds to the social categorization literature by exploring empirically perceived TMT dissimilarity in the context of innovation capability. For organizations, the study can guide them to create high-performing TMTs to facilitate innovation capability.

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The following section begins by drawing on upper echelons theory to lay out the role of information and values in TMTs. Next, we introduce social categorization in teams, specifically with regard to informational and value dissimilarity in teams and the need to distinguish incremental and radical innovation capability. We derive the research model from this foundation, which we examine using primary data from TMT members. After presenting the findings, we discuss the study's contributions and limitations and offer directions for future research.

Theoretical premises

Upper echelons theory

Upper echelons theory (Hambrick, 2007; Hambrick & Mason, 1984) postulates that top managers' characteristics influence their decision-making, thus shaping such organizational outcomes as innovation capability. It also acknowledges that a team of top managers, rather than a single top manager, typically makes strategic decisions (Hambrick, 2018). Since TMTs must make strategic decisions under ambiguous circumstances and face more stimuli than they can process thoroughly (Hambrick, 2018), their decisions are guided by their inherent characteristics instead of purely objective analysis (Hambrick & Mason, 1984). Hambrick and Mason (1984) identify two clusters of characteristics that shape TMT member's decision-making. Individual information about future events, alternatives, and consequences that is grounded in their educational, functional, and professional backgrounds (Hambrick & Mason, 1984; Miller et al., 2022) and individual values about what they want to achieve with the organization that derive from their attitudes, principles, and motivations (Finkelstein, Hambrick, & Canella, 2009; Li, Liu, & Wan, 2008).

A substantial body of literature examines how diversity in TMT members' characteristics guides the strategic decisions they make in influencing organizational outcomes (e.g., Cuypers, Patel, Ertug, Li, & Cuypers, 2022; Homberg & Bui, 2013; Ponomareva, Uman, Bodolica, & Wennberg, 2022). Building on the propositions of upper echelons theory, scholars argue that TMT members' diverse information and values combine to the benefit of the organization (Hambrick & Mason, 1984; Hemmert, Cho, & Lee, 2024). For example, the literature identifies that variety in TMT members' individual work experience, education, or functions expands the TMT's pool of information from which its members can generate more ideas and spot additional opportunities, benefitting innovation (e.g., Belderbos et al., 2022; Qian, Cao, & Takeuchi, 2013; Schubert & Tavassoli, 2020). Therefore, this literature conceptualizes TMT diversity from the variety perspective that benefits innovation.

Social categorization in dissimilar teams

The literature also proposes another perspective on team diversity, the separation perspective (Harrison & Klein, 2007). It contends that TMT members' dissimilarity in terms of their information and values separates them from one another, inhibiting their ability to leverage information and values for decision-making (Harrison & Klein, 2007). *Informational dissimilarity* refers to perceiving differences in the information other team members hold because of differences in their education, functional, and professional backgrounds (Hobman, Bordia, & Gallois, 2004; Shemla, Meyer, Greer, & Jehn, 2016; Van der Vegt et al., 2003). *Value dissimilarity* refers to perceiving differences in other team members' perspectives because of differences in their principles that guide their work-related behavior, values, and motivation (Hobman et al., 2004; Shemla et al., 2016).

Based on their perceptions of dissimilarity, team members categorize others into subgroups that have high levels of similarity with and high levels of dissimilarity from themselves (Tajfel & Turner, 1986). According to the *social categorization perspective* (Hogg, 2001; Tajfel et al., 1971), the emergence of such subgroups leads to intergroup bias such that information from and the values of similar team members are integrated into decisions while those from dissimilar team members, i.e. from a different subgroup, are disregarded or devalued (Hogg, 2001). Consequently, team dissimilarity is associated with negative outcomes like a lack of helping behavior (Liao, Chuang, & Joshi, 2008), empathy on the other team members' viewpoints (Williams, Parker, & Turner, 2007), and team turnover

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(Finkelstein et al., 2009; Jackson et al., 1991). Specifically, research associates value dissimilarity in teams with such negative outcomes as low cohesiveness, low trust levels, poor communication (DeBode, Fox, & McSweeney, 2023; Dose & Klimoski, 1999), poor team performance, poor team effectiveness (Jehn, Northcraft, & Neale, 1999), and low team involvement (Hobman et al., 2004).

Concerning, informational dissimilarity on a team, previous studies show inconsistent results. Pelled, Ledford, and Mohrman (1999) argue that educational dissimilarity is a sign of specialized knowledge that benefits perceived information access and decision-making influence, Adamovic (2020) and Chattopadhyay, Finn, and Ashkanasy (2010) indicate positive and negative outcomes. Adamovic (2020) suggests that it can encourage information exchange and information elaboration but can also reduce team members' willingness to contribute their information if it is unique to the team. Adamovic (2020) argues that this is because team members expect disadvantages upon perceiving informational dissimilarity between the team members. According to Chattopadhyay et al. (2010), professional dissimilarity, one type of informational dissimilarity, decreases negative emotions and negative behaviors, such as yelling or making sarcastic comments toward other team members, by high-status team members, but increases these negative behaviors among low-status team members. Finally, Hobman et al. (2004) find that informational dissimilarity decreases team involvement because team members overemphasize common information and neglect unique information, which reduces communication within the team. Further, Van der Vegt et al. (2003) find that team members' categorization processes decrease members' identification with the team.

Interestingly, research tends to focus on one dissimilarity characteristic at a time, such as educational background, professional background, or work behavior, although the reality is that team members simultaneously respond to different kinds of dissimilarity. For example, informational and value dissimilarity are characteristic of the specialized knowledge and perspectives in the TMT and are present within the TMT at the same time. This co-occurrence of different types of dissimilarity evokes simultaneous categorization processes (Grigoryan, Cohrs, Boehnke, van de Vijver, & Easterbrook, 2022). Considering the co-occurrence of different dissimilarities is necessary since categorization into subgroups is possible only when a team deals with a small number of dissimilarity characteristics (Crisp & Hewstone, 2007). Research shows that people cannot process categorization of more than four categories (Halford, Baker, McCredden, & Bain, 2005). If more than four types of dissimilarity co-occur, team members can no longer form clearly distinguishable subgroups (Macrae & Bodenhausen, 2001), so categorization processes will result in subgroups that may be dissimilar in one characteristic but similar in another (Chung et al., 2015). For example, categorization may lead to forming subgroups that differ in values but share similar information. *Multiple social categorization theory* (Crisp & Hewstone, 2007) postulates that the more dissimilar a team, the less likely it is to form subgroups. As overlaps between the subgroups increase, no harmful categorization of team members occurs, and team members can leverage information and values from one another (Crisp & Hewstone, 2007). Overall, then, the social categorization perspective and multiple social categorization theory diverge: The former predicts that team dissimilarity leads to intergroup biases and negative team outcomes, for example low team effectiveness (Hogg, 2001; Tajfel et al., 1971). The latter predicts positive outcomes for highly dissimilar teams because no harmful categorization occurs, so no intergroup bias arises (Crisp & Hewstone, 2007). This controversy has not yet been solved in TMT diversity research. In fact, research around TMT diversity focuses on the variety perspective and neglects the separation perspective. Therefore, our study seeks to shed light on the role of the separation perspective in TMTs, thus contributing to clearing up the controversy of categorization in TMTs.

Incremental and radical innovation capability

Innovation capability is the ability to apply and integrate resources to generate innovations (Lawson & Samson, 2001) and refers to the use of resources rather than their availability (Menguc, Auh, & Yannopoulos, 2014; Teece, Pisano, & Shuen, 1997). The innovation literature classifies innovation

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capability into incremental and radical (e.g., Lei, Ha, & Le, 2019; Slater, Mohr, & Sengupta, 2014; Wang, Lu, Zhao, Gong, & Li, 2013). Incremental innovation capability is the ability to '*generate innovations that refine and reinforce existing products and services*' (Subramaniam & Youndt, 2005, p. 452). That is, to make moderate changes in existing services and products, as the underlying processes and knowledge are reinforced and do not significantly change (Menguc et al., 2014). In contrast, *radical innovation capability* is the ability to '*generate innovations that significantly transform existing products and services*' (Subramaniam & Youndt, 2005, p. 452). That is, the ability to make major changes to existing products, services, and processes or develop new ones by, for example, using breakthrough technology (Menguc et al., 2014). The capability to generate radical innovation requires a substantial change or transformation of prevailing processes and knowledge by, for example, using new resources or developing new capabilities (McGrath, 2001). Research shows that incremental innovation capability is of particular relevance to organizations when improving the consumer experience (Menguc et al., 2014), while radical innovation capability may be necessary to keep up with rapidly changing customer demands and environmental changes (Slater et al., 2014).

Increasingly, research distinguishes between incremental and radical innovation capability and identifies distinct antecedents for each type (e.g., Forés & Camisón, 2016; Gui et al., 2022; Han et al., 2020; Slater et al., 2014), but most research on the implications of TMT diversity does not differentiate between the two (e.g., Azeem & Baker, 2020; Quintana-García & Benavides-Velasco, 2016; Song et al., 2022). Heyden, Sidhu, van den Bosch, and Volberda's (Heyden, Sidhu, van den Bosch, & Volberda, 2012) study is an exception, as it argues that TMT members' experience diversity increases the TMT's pool of knowledge and, therefore, increases the set of feasible ideas for radical innovation. In contrast, little diversity in TMT members' experience deepens the team's knowledge but leads to compliance with the status quo and, therefore, to incremental innovation capability. These results suggest that the TMT's composition in terms of diversity has distinct implications for the team's type of innovation capability.

Research model

We use an exploratory study design to shed light on the association between TMT members' informational dissimilarity/value dissimilarity and incremental innovation capability/radical innovation capability. Exploratory research is beneficial if the goal is to extend research by examining relationships when underlying information is scant (Swedberg, 2020). Although the body of literature concerning TMT diversity and innovation is substantial, it is deficient in several respects.

First, most upper echelons research uses objective proxies to measure the diversity of information and values. The proxy for diversity in values relies on donations to political parties (Narayan et al., 2021), whereas studies often measure informational diversity using demographic proxies like educational background, education level, functional specialization, and experiences across industries (e.g., Azeem & Baker, 2020; Chemmanur, Kong, Krishnan, & Yu, 2019; Chung, Cho, & Kang, 2018; Li & Huang, 2019; Li, Liu, Lin, & Ma, 2016; Qian et al., 2013; Wu & Park, 2019; Zhong, Song, & Chen, 2021). However, Miller et al. (2022) claim that these demographic proxies perform poorly, which questions the predictions derived from them and the underlying mechanisms they help to identify. Consequently, the authors call for a more direct assessment of TMT characteristics and TMT diversity. A perception measure ensures that salient differences are measured, which may provide a more suitable proxy because team members act on their perceptions rather than reality (Lawrence, 1997) and may not see all objective differences as salient (Randel, 2002). However, few studies assess TMT diversity in terms of TMT members' perceptions (Alexiev, Jansen, van den Bosch, & Volberda, 2010; Mehrabi, Coviello, & Ranaweera, 2021; Mihalache et al., 2012).

A second respect in which the literature concerning TMT diversity and innovation is deficient lies in distinguishing between informational diversity and value diversity in the TMT. Some studies

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(Alexiev et al., 2010; Mehrabi et al., 2021; Mihalache et al., 2012) use a direct measure from Campion, Medsker, and Higgs (1993), which asks TMT members about the TMT's characteristics, but these studies focus on informational characteristics and do not address values. In fact, most studies rely on proxies that reflect informational differences like educational background, functional background, or expertise (e.g., Chung et al., 2018; Li & Huang, 2019; Talke et al., 2011) and disregard diversity in values (Narayan et al., 2021). Differentiating the two types of dissimilarity would allow for a more holistic assessment of the implications of TMT diversity, as values shape team processes (Chrobot-Mason, Ruderman, Weber, & Ernst, 2009).

Third, upper echelons research focuses on the variety perspective of team diversity, which conceptualizes team diversity as a process in which diversity in information and values are additive (Harrison & Klein, 2007), thus accelerating the generation of feasible ideas that benefit innovation (e.g., Belderbos et al., 2022; Boone, Lokshin, Guenter, & Belderbos, 2019; Mehrabi et al., 2021). However, team diversity also contributes to forming homogeneous subgroups that distinguish groups from each other (Hogg, 2001; Tajfel et al., 1971), separating team members and hindering them from working together effectively (Harrison & Klein, 2007). Research that examines TMT diversity from a separation perspective, that is, how diversity in information and values separate TMT members from each other, is lacking (Song et al., 2022). Therefore, whether the implications of the social categorization perspective (Hogg, 2001; Tajfel et al., 1971) or multiple social categorization theory (Crisp & Hewstone, 2007) apply in the context of informational and value dissimilarity between TMT members remains unexplored, as are whether and to what extent TMTs suffer from categorization processes and their detrimental effects on innovation capability.

Finally, scarce upper echelons research distinguishes between incremental and radical innovation capability. While the types of innovation capability suggest different strategic orientations (McDermott & O'Connor, 2002; Un, 2010), both types are suitable if organizations are to innovate (Gui et al., 2022; Sheng & Chien, 2016). In addition, the antecedents of the types of innovation capability are distinct (e.g., Forés & Camisón, 2016; Gui et al., 2022; Slater et al., 2014). Therefore, the ability to derive implications requires distinguishing between incremental and radical innovation capability, but few studies address how TMT diversity is associated with the types of innovation capability.

Taken together, the lack of literature that addresses the association between TMT diversity and incremental innovation capability/radical innovation capability and that takes the separation perspective in addressing informational and value dissimilarity results in scant information on the expected direction and magnitude of associations. Therefore, an exploratory study design in an initial examination of how the co-occurrence of the two types of dissimilarity are associated with incremental and radical innovation capability is required.

Figure 1 shows the research model of this study.

Method

Data collection and sample

We use a quantitative approach and collect data through an online survey. We survey TMT members from organizations that have more than 250 full-time employees across industries in Germany. Table 1 provides details about the sample composition. A key advantage of using a survey is that it enables the respondents' perceptions of their team members' dissimilarity to be assessed. Respondents were recruited via an online panel provider. To remedy potential issues in data quality, we conducted multiple checks. We eliminated respondents who completed the survey too quickly, deleted surveys with inconsistencies in answers (e.g., indicating that more women were in the TMT than TMT members overall), and checked the respondents' IP addresses to ensure that only unique IP addresses were included in the final sample. These procedures resulted in a final data set of 91 observations.

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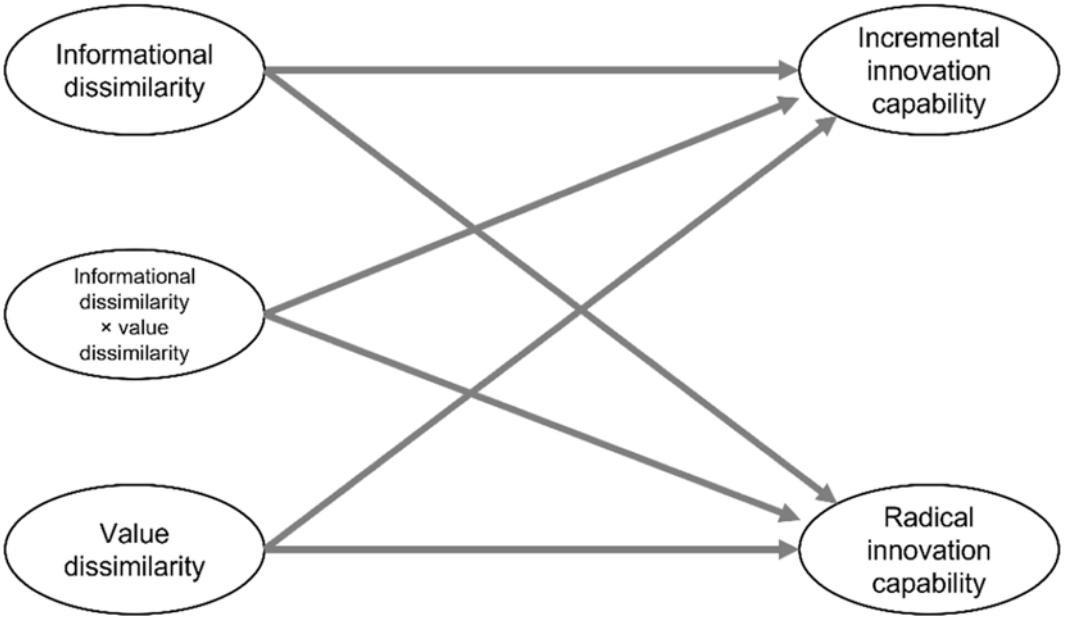

Figure 1. Research model.

Measurement of constructs and variables

We use established scales to measure the latent variables of our research model and, since we surveyed top managers from German organizations, we translated the scales into German following Brislin's (1970) back-translation procedure to ensure equivalence between original and translated scale such that a third person conducted the back-translation. Unless stated otherwise, we measure all items on a seven-point Likert-type scale ranging from 1 = strongly disagree to 7 = strongly agree. Table 2 shows all items used in the study.

Incremental innovation capability and radical innovation capability, endogenous variables

We measure the endogenous variables with the scales developed by Subramaniam and Youndt (2005). Respondents are asked to describe their organizations' innovations in the last 5 years compared to their competitors. Sample items are 'Innovations that reinforce your prevailing product/service lines'. for *incremental innovation capability* and 'Innovations that make your prevailing product/service lines obsolete'. for *radical innovation capability*.

Informational dissimilarity and value dissimilarity, exogenous variables

We opt to measure perceived dissimilarity since it has a more substantial effect than objective dissimilarity does (Turban & Jones, 1988), and team members may not see all objective differences as salient (Randel, 2002). A perception measure assesses whether the respondents perceive dissimilarities between themselves and other TMT members and ensures that salient differences are captured, which is essential for categorization processes (Ambady et al., 2000; Zellmer-Bruhn et al., 2008).

We measure the exogenous variables using an adapted version of Hobman et al.'s (2004) perceived dissimilarity scale. To avoid a priming effect in the perception of dissimilarity, respondents first answered the items about their perceptions of the dissimilarity among TMT members before providing information about its objective composition.

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Table 1. Sample composition

Organization	Percentage	Cumulative Percentage
Firm age (in years)		
0–20	23.53	23.53
21–40	51.20	74.73
41–60	15.38	90.11
61–80	4.40	94.51
81–100	0.55	95.06
101 and above	4.94	100
Number of employees		
250–500	21.98	21.98
501–1,000	18.68	40.66
1,001–3,000	20.88	61.54
3,001–6,000	18.68	80.22
6,001–10,000	15.38	95.60
10,000 and above	4.40	100
Ownership		
Privately-held	73.63	73.63
Publicly-traded	21.98	95.61
State-owned	4.40	100
Main product		
Digital products	18.68	18.68
Physical products	28.57	47.25
Digital services	29.67	76.92
Physical services	23.08	100
Industry		
Accommodation and food services	2.20	2.20
Construction	6.59	8.79
Finance and insurance	7.69	16.48
Health care and social assistance	5.49	21.97
Information	3.30	25.27
Manufacturing	26.37	51.64
Other services	13.19	64.83
Professional, scientific and technical services	25.27	90.10
Real estate, rental and leasing	1.10	91.20
Trade	3.30	94.50
Transportation and warehousing	4.40	98.90
Other	1.10	100
Number of operating countries		
1	10.99	10.99
2–5	56.04	67.03
6–10	15.38	82.42
11 and above	17.58	100

(*Continued*)

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Table 1. (*Continued.*)

Organization	Percentage	Cumulative Percentage
Team size (number of team members)		
2	7.69	7.69
3	15.38	23.08
4	9.89	32.97
5	19.78	52.75
6	16.48	69.23
7	14.29	83.52
8	7.69	91.21
9 and more	8.79	100
Percentage of women in TMT		
0–25	20.88	20.88
26–50	49.49	70.33
51–75	16.48	86.81
76–100	13.19	100
Age span between youngest and oldest team member (in years)		
0–10	32.97	32.97
11–20	26.37	59.34
21–30	29.67	89.01
31–40	10.99	100
At least one team member differs in cultural background		
Yes	70.33	70.33
No or unknown	29.67	100
At least one team member belongs to LGBT+ community		
Yes	43.96	43.69
No or unknown	56.04	100
At least one team member has a severely handicapped pass		
Yes	29.67	29.67
No or unknown	70.33	100
At least one team member differs in educational background		
Yes	82.42	82.42
No	17.58	100
Gender		
Female	24.18	24.18
Male	75.82	100
Age (in years)		
25 and younger	10.99	10.99
26–30	14.48	25.27
31–35	18.69	43.96
36–40	25.27	69.23
41–45	14.29	83.52

(*Continued*)

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Table 1. (*Continued.*)

Organization	Percentage	Cumulative Percentage
46–50	5.49	89.01
51–55	4.40	93.41
56–60	4.39	97.80
61 and older	2.20	100
Educational background		
High school	2.20	2.20
Professional training	4.40	6.60
Bachelor degree	18.68	25.28
Master degree	47.24	72.52
MBA	14.29	86.81
PhD	13.19	100
Nationality		
German	91.21	91.21
Other	8.79	100
Belongingness to LGBT+ community		
Yes	20.88	20.88
No	72.53	93.41
Prefer not to say	6.59	100
Has a severely handicapped pass		
Yes	12.09	12.09
No	85.71	97.80
Prefer not to say	2.20	100

$N = 91$.

Table 2. Measurement model

Item description	Standardized loading	Cronbach's α, D.G. rho & Rho (a)	AVE
*Incremental innovation capability (*Subramaniam & Youndt, 2005)			
1. Innovations that reinforce our prevailing product/service lines.	0.86	Cronbach's $\alpha = 0.78$	0.70
2. Innovations that reinforce our existing expertise in prevailing products/services.	0.82	D.G. rho $= 0.87$	
3. Innovations that reinforce how we currently compete.	0.83	$\rho_A = 0.79$	
(Scale: 1 = clearly weaker than competitors; 7 = clearly stronger than competitors)			
*Radical innovation capability (*Subramaniam & Youndt, 2005)			
1. Innovations that make our prevailing product/service lines obsolete.	0.91	Cronbach's $\alpha = 0.82$	0.84

(*Continued*)

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Table 2. (*Continued.*)

Item description	Standardized loading	Cronbach's α, D.G. rho & Rho (a)	AVE
2. Innovations that make our existing expertise in prevailing products/services obsolete.	0.92	D.G. rho = 0.92	
3. Innovations that fundamentally change our prevailing products/services.[a]		$\rho_A = 0.82$	
(Scale: 1 = clearly weaker than competitors; 7 = clearly stronger than competitors)			
*Informational dissimilarity (*Hobman et al., 2004)			
1. I feel I am professionally dissimilar to other TMT members.	0.93	Cronbach's α = 0.77	0.81
2. In terms of functional background (e.g., professional background and/or work experiences) I think I am different from other TMT members.	0.86	D.G. rho = 0.89	
3. I feel I am educationally dissimilar to other TMT members.[a]		$\rho_A = 0.82$	
(Scale: 1 = strongly disagree; 7 = strongly agree)			
*Value dissimilarity (*Hobman et al., 2004)			
1. I feel my work values are dissimilar to other TMT members.	0.83	Cronbach's α = 0.81	0.72
2. I feel my work motivations are dissimilar to other TMT members.	0.82	D.G. rho = 0.89	
3. In terms of principles that guide my work (e.g., detail oriented, reward driven) I think I am different from other TMT members.	0.90	$\rho_A = 0.81$	
(Scale: 1 = strongly disagree; 7 = strongly agree)			

[a]Item dropped due to low item reliability.

Control variables

To address the possibility of alternative explanations for the organization's innovation capability, we include controls on the organizational, team, and individual levels. At the organizational level, we include the organization's size, industry, and scope of internationalization. We use the number of full-time employees to measure *organization size* (Kianto, Sáenz, & Aramburu, 2017). Larger organizations may have access to more resources, which influences innovation capability (Camisón-Zornoza, Lapiedra-Alcamí, Segarra-Ciprés, & Boronat-Navarro, 2004). Respondents indicated the organization's *industry* using a provided list. The organization's industry imposes constraints on organizations, which affects their innovativeness (Acar, Tarakci, & van Knippenberg, 2019). To measure the *scope of internationalization*, we ask respondents to indicate the number of countries the organization operates in (Zahra & George, 2017). The wider scope of international activities increases the organization's incentive to innovate and access to resources, stimulates its ability to adapt to various needs, and specifically fosters radical innovation capability (Freixanet & Rialp, 2022).

The controls we include at the team level are the TMT's size, objective TMT educational diversity, and objective TMT gender diversity. We measure *TMT size* as the number of TMT members, as larger TMTs can find it difficult to leverage the potential of individual team members (Bass, 2019). We measure o*bjective TMT educational diversity* using a binary variable that equals '1' if at least one of the TMT members differs from the other in educational background, such as in their major area of study, and '0' if all TMT members have the same educational background or their backgrounds are unknown. Objective TMT's educational diversity is positively associated with the likelihood that it will engage in innovation activities because it increases its ability to identify

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problems (Schubert & Tavassoli, 2020). Following previous studies (e.g., Hemmert et al., 2024; Quintana-García & Benavides-Velasco, 2016), we also include *objective TMT gender diversity*, measured using the Blau Index (Blau, 1977). We ask respondents to indicate the number of women in the TMT and derive the number of male TMT members from the size of the TMT. TMT gender diversity is associated with broader perspectives, and studies identify a positive association between TMT gender diversity and innovation (Dezsö & Ross, 2012; Hemmert et al., 2024; Miller & Del Carmen Triana, 2009).

The individual-level control we use is *functional background*, measured as the functional area with which TMT members are associated. Functional background influences the involvement in decisions (Bunderson, 2003) and can, thus, affect the strategic decision to pursue innovation activities.

Common method bias

Since we collected the variables of interest from a single source, common method bias could be an issue. To address this problem, we ensured that the variables were captured in separate sections of the survey (Podsakoff, MacKenzie, & Podsakoff, 2003). We assessed common method bias with the marker variable approach (Lindell & Whitney, 2001), using 'having littered the environment' as the marker variable, which is not theoretically related to the research model. The correlations do not substantially change after the marker variable's effect is parceled out. Therefore, the results of neither the marker variable test nor Harman's single factor test indicate an issue with common method bias.

Key informant bias

To mitigate the potential for key informant bias associated with the self-reporting of incremental and radical innovation capability, we comply with Homburg, Klarmann, Reimann, and Schilke's (2012) suggestion to survey informants who hold high hierarchical positions, as those in higher positions tend to provide more accurate evaluations, than those in lower positions. We also asked the participants to rate their competence in answering the questions and eliminated four observations that indicated low competence. Then we follow Homburg and Wielgos (2022) in rerunning the analysis by dropping seven observations that indicate moderate competence. The results did not change after dropping these observations, indicating that the participants who identified as moderately confident did not influence the results.

Analysis and findings

We employ partial least squares structural equation modeling (PLS-SEM) for the data analysis. PLS-SEM is preferable to covariance-based structural-equation modeling with small sample sizes and few indicators (Mehmetoglu & Venturini, 2021). To estimate the required sample size, we follow the recommendations of Hair, Gult, Ringle and Sarstedt (2021), indicating a minimum sample size of 69, considering the minimum path coefficient and a power of 80% in relation to a significance level of 5%. Moreover, choosing PLS-SEM rather than multiple linear regression analysis allows the strength of associations to be compared (Hair et al., 2021). We test the research model using PLS-SEM 10,000 bootstrapping to determine the significance of the correlations.

Reliability and validity of measures

Reflective measurement model

The measurement model contains four reflective measurement models: Informational dissimilarity, value dissimilarity, incremental innovation capability, and radical innovation capability. We assess the reliability and validity of the measures following the recommendation of Mehmetoglu and Venturini (2021). Table 2 shows the details about these assessments.

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Table 3. Discriminant validity

Construct	1	2	3	4	5	6	7	8	9	10	11
1. Incremental innovation capability	**0.70**	0.020	0.273	0.055	0.004	0.000	0.177	0.080	0.000	0.004	0.072
2. Radical innovation capability		**0.84**	0.091	0.377	0.007	0.000	0.185	0.004	0.025	0.004	0.053
3. Informational dissimilarity			**0.81**	0.428	0.000	0.014	0.094	0.000	0.000	0.010	0.017
4. Value dissimilarity				**0.72**	0.000	0.000	0.140	0.004	0.024	0.001	0.006
5. Organization size						0.024	0.000	0.069	0.000	0.008	0.007
6. Scope of internationalization							0.005	0.027	0.004	0.001	0.000
7. Industry								0.015	0.006	0.001	0.001
8. TMT size									0.002	0.011	0.000
9. Obj. TMT educational diversity										0.000	0.059
10. Obj. TMT gender diversity											0.001
11. Functional background											

The table indicates the squared interfactor correlations. AVEs are in the diagonal in bold. Number 5 to 11 are measured through a single indicator, and therefore average variance extracted (AVE) cannot be computed.

In assessing radical innovation capability, we found that one indicator loaded below the suggested threshold value of 0.708 (Hair, Risher, Sarstedt, & Ringle, 2019) (see Table 2), and the AVE for the latent variable increased after we excluded it, so we eliminated it from the model. We also eliminated one indicator of the latent variable informational dissimilarity because of substantial cross-loading. In the final model, all standardized loadings are above the suggested threshold of 0.708. The AVE values exceed the recommended threshold level of 0.5. Dillon-Goldstein's rho (D.G. rho), Rho (a) (ρ_A), and Cronbach's α values are above the suggested level of 0.7 as well (Bagozzi, Yi, & Phillips, 1991; Mehmetoglu & Venturini, 2021) (see Table 2). These results indicate the model's reliability and convergent validity.

We assess discriminant validity using the Fornell-Larcker criterion and the heterotrait monotrait ratio of correlations (HTMT). All AVE values of the model's latent variables are larger than the squared correlations, indicating discriminant validity (Fornell & Larcker, 1981) (see Table 3). We find that all values of the HTMT are below the threshold value of 0.9 for conceptually similar constructs (Hair et al., 2019). We also calculate the HTMT2 since the HTMT tends to be upward biased for correlated latent variables (Henseler, 2021) and find that the HTMT2 is also below the threshold value of 0.9, indicating discriminant validity.

Formative measurement model

Following Hair et al.'s (2021) recommendations, we include the categorical control variables *industry* and *functional background* as a series of binary variables. We assess the formative measurement models by considering the weights of the formative measures and the variance inflation factor (VIF) (Mehmetoglu & Venturini, 2021). Some of the measures' item weights are not significant, but, following Mehmetoglu and Venturini's (2021) recommendation, we keep them in the respective formative

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measure since each item represents an essential part of the respective construct. We examine possible multicollinearity among the items by calculating the VIF for both constructs. The VIF values of both formative measurement models are below 2.5, so they suggest no issues of multicollinearity (Mehmetoglu & Venturini, 2021). Therefore, overall, the measurement model provides evidence of reliability and validity, and we continue with the evaluation of the structural model in the next section.

Findings from the exploratory study

We assess multicollinearity of the structural model by calculating the VIF. All values are below 2.5, indicating no multicollinearity issues (Hair et al., 2019). The R^2 for incremental innovation capability is 44.0 percent and that for radical innovation capability is 42.1 percent. Table 4 presents the structural model that includes the direct associations. The results suggest a positive association between informational dissimilarity and incremental innovation capability (Informational dissimilarity → incremental innovation capability; $\beta = .586$, $p < .001$), so TMT members who perceive their team members as highly dissimilar from them in terms of information report higher incremental innovation capability than TMT members who perceive their team members as more homogeneous in terms of information. We also find that perception in terms of dissimilarity in values is negatively associated with incremental innovation capability (Value dissimilarity → incremental innovation capability; $\beta = -.273$, $p < .05$). Therefore, whereas TMT members who perceive their team members as dissimilar in terms of information associate that dissimilarity with higher incremental innovation capability, they associate perceiving their fellow TMT members as dissimilar in values is associated with lower incremental innovation capability.

The findings show that informational dissimilarity is not associated with radical innovation capability (Informational dissimilarity → radical innovation capability; $\beta = -.137$, $p > .1$), but value dissimilarity has a positive and significant association with radical innovation capability (Value dissimilarity → radical innovation capability; $\beta = .600$, $p < .001$). In short, the TMT members in the sample who perceive a high level of value dissimilarity also report a high level of radical innovation capability.

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We follow Chin, Marcolin, and Newsted's (Chin, Marcolin, & Newsted, 2003) two-stage approach to test for interaction effects of informational and value dissimilarity. The first stage estimates the latent variables and builds the main effects, as reported in Table 4. The second stage uses the latent variable scores from the first stage to build the interactive model (Mehmetoglu & Venturini, 2021). One disadvantage of the two-stage approach is the possibility of multicollinearity issues, so we calculate the VIF to assess multicollinearity in the interactive model. All values are below 2.5, indicating no multicollinearity issues (Hair et al., 2019). The R^2 value for incremental innovation capability is 40.6 percent for incremental innovation capability and that for radical innovation capability is 47.6 percent. Table 5 shows the structural model with the interaction effects included.

The findings indicate that the interaction between informational dissimilarity and value dissimilarity is not associated with incremental innovation capability (Informational dissimilarity × value dissimilarity → incremental innovation capability; $\beta = -.025$, $p > .1$). The findings also show no significant interaction between informational dissimilarity and value dissimilarity on radical innovation capability (Informational dissimilarity × value dissimilarity → radical innovation capability; $\beta = .167$, $p > .1$). Hence, the associations between informational dissimilarity and incremental and radical innovation are not contingent on the level of value dissimilarity, and the associations between value

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Table 4. Structural model – Direct associations

Linkages in model	Parameter estimates	
	Standardized path coefficient	*p*-value
Informational dissimilarity → incremental innovation capability	.586	.000
Value dissimilarity → incremental innovation capability	−.273	.037
Informational dissimilarity → radical innovation capability	−.137	.307
Value dissimilarity → radical innovation capability	.600	.000
Controls		
Number of employees → incremental innovation capability	.024	.757
Scope of internationalization → incremental innovation capability	.026	.733
Industry → incremental innovation capability	−.318	.002
TMT size → incremental innovation capability	.250	.001
Obj. TMT educational diversity → incremental innovation capability	.023	.767
Obj. TMT gender diversity → incremental innovation capability	−.011	.879
Functional background → incremental innovation capability	.182	.149
Number of employees → radical innovation capability	.056	.492
Scope of internationalization → radical innovation capability	.008	.920
Industry → radical innovation capability	−.247	.010
TMT size → radical innovation capability	−.016	.858
Obj. TMT educational diversity → radical innovation capability	.011	.888
Obj. TMT gender diversity → radical innovation capability	−.072	.333
Functional background → radical innovation capability	−.156	.295

Fit statistics for the structural model: R^2 for incremental innovation capability: 44.0%,.
R^2 for radical innovation capability: 42.1%.

dissimilarity and incremental and radical innovation are not contingent on the level of informational dissimilarity.

Sensitivity analysis

To determine whether the reported findings are robust to alternative explanations, we follow Hair et al.'s (2019) recommendation. To check for unobserved heterogeneity, we employ a response-based unit segmentation in the model that explores the direct associations.[1] The algorithm uses the residuals of the PLS-SEM analysis to segment the data and analyzes it for each segment. If unobserved heterogeneity is present, the segmented model's results differ from those of the overall model (Mehmetoglu & Venturini, 2021). We use the group quality index and the permutation test to assess the results of the response-based unit segmentation, and these tests show no indication of unobserved heterogeneity.

[1]The test is not available for models that test interactions.

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Table 5. Structural model – Interactive associations

	Parameter estimates	
Linkages in model	Standardized path coefficient	*p*-value
Informational dissimilarity → incremental innovation capability	.589	.000***
Value dissimilarity → incremental innovation capability	-.003	.975
Informational dissimilarity x value dissimilarity → incremental innovation capability	-.025	.822
Informational dissimilarity → radical innovation capability	..030	.781***
Value dissimilarity → radical innovation capability	.744	.000***
Informational dissimilarity x value dissimilarity → radical innovation capability	.167	.112
Controls		
Number of employees → incremental innovation capability	−.057	.498
Scope of internationalization → incremental innovation capability	.012	.907
Industry → incremental innovation capability	.089	.357
TMT size → incremental innovation capability	.043	.658
Obj. TMT educational diversity → incremental innovation capability	−.102	.317
Obj. TMT gender diversity → incremental innovation capability	.120	.180
Functional background → incremental innovation capability	−.274	.054†
Number of employees → radical innovation capability	−.085	.312
Scope of internationalization → radical innovation capability	.067	.407
Industry → radical innovation capability	.160	.029*
TMT size → radical innovation capability	.071	0.484
Obj. TMT educational diversity → radical innovation capability	.028	.725
Obj. TMT gender diversity → radical innovation capability	.064	.358
Functional background → radical innovation capability	−.076	.311

Fit statistics for the structural model: R^2 for incremental innovation capability: 40.6%,.
R^2 for radical innovation capability: 47.6%.
† $< p <$ .05; ** $p <$ .01; *** $p <$ .001.

To check for nonlinear associations, we first run Ramsey's (1969) regression equation specification test and find no indication of nonlinear associations. Then we follow Svensson et al. (2018) in creating a quadratic term of the exogenous variables like an interaction and rerun the model to check for a U-shaped association. The results show a significant and positive quadratic term of value dissimilarity in association with incremental innovation capability (Value dissimilarity × value dissimilarity → incremental innovation capability; $\beta = .324$, $p < .05$). A significant and positive coefficient of the quadratic term is indicative of a U-shaped association (Haans & Pieters, 2016), so we check whether the turning point lies within the data by setting the partial derivative of the model equation to 0 and solving for it (Obadia & Robson, 2021). The calculated turning point is 0.200 and is within the data

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range, indicating a U-shaped association. However, running further analyses by splitting the sample at the estimated turning point or specifying the model such that only a quadratic term of one exogenous variable is included provides no indication of a U-shaped association between value dissimilarity and incremental innovation capability. Therefore, we conclude that value dissimilarity and incremental innovation capability are negatively associated.

Discussion

This study is a first attempt to use perceived dissimilarity in the TMT to explore TMT diversity from a separation perspective instead of the more common variety perspective (Harrison & Klein, 2007; Shemla et al., 2016). The study differentiates between two TMT characteristics: Informational dissimilarity, which refers to perceiving differences in the information other team members hold because of differences in their education, functional, and professional backgrounds (Hobman et al., 2004; Shemla et al., 2016; Van der Vegt et al., 2003), and value dissimilarity, that is perceiving differences in other team members' perspectives because of differences in their principles that guide their work-related behavior, values, and motivation (Hobman et al., 2004; Shemla et al., 2016). In doing so, we offer a more holistic examination of the associations between two types of TMT members' dissimilarity and two types of innovation capability, incremental and radical.

The study's findings indicate that informational dissimilarity is positively associated with incremental innovation capability and value dissimilarity is negatively associated with incremental innovation capability. We also find a positive association between value dissimilarity and radical innovation capability. However, the association between informational dissimilarity and radical innovation capability and the associations between the interactions of the two types of dissimilarity with the two types of innovation capability are nonsignificant.

The positive association between informational dissimilarity and incremental innovation capability likely occurs because, in contrast to the social categorization perspective, the perception of informational dissimilarity between TMT members evokes no harmful categorization of the TMT members into subgroups, indicating support for the multiple social categorization theory (Crisp & Hewstone, 2007). It appears that informational dissimilarity between the TMT members increases information processing, as the TMT members draw on other members' dissimilar information (Adamovic, 2020) to examine issues in depth and build on each other's information to identify new alternatives, thus increasing incremental innovation capability (Forsman, 2009).

Studies that adopt a variety perspective show that information diversity increases radical innovation capability, as TMT members draw on a broader pool of information to identify a larger number of feasible alternatives (Heyden et al., 2012; Mehrabi et al., 2021). However, the results of this study suggest that informational dissimilarity is not associated with radical innovation capability. One possible explanation for this result is grounded in the social categorization perspective (Hogg, 2001; Tajfel et al., 1971) that informational dissimilarity leads to a harmful categorization of TMT members, impeding TMT members' use of information such that it has no impact on radical innovation capability. Another explanation is based on the characteristics that benefit radical innovation capability in that radical innovation capability arises in particular from considering multiple perspectives of an issue instead of an in-depth analysis of information (Forsman, 2009). Thus, informational dissimilarity appears insufficient to stimulate the substantive transformation and change that characterizes radical innovation capability (Subramaniam & Youndt, 2005). Informational dissimilarity focuses on the information that is in the TMT, rather than the multiple perspectives that characterize value dissimilarity (Hobman et al., 2004). Consequently, while informational dissimilarity appears to stimulate an in-depth analysis of existing information (Adamovic, 2020) such that it benefits incremental innovation capability, it has no association with radical innovation capability.

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The findings indicate that value dissimilarity is positively associated with radical innovation capability but is negatively associated with incremental innovation capability. The positive association of value dissimilarity and radical innovation capability suggests that TMT members can utilize the different perspectives contained in value dissimilarity. Thus, the finding indicates support for multiple social categorization theory (Crisp & Hewstone, 2007), as no harmful categorization that opposes the use of the dissimilar values in the TMT seems to take place. Value dissimilarity may be associated with differing perspectives on the scope and direction of innovation activities, so it appears to broaden perspectives and inspire visionary ideas that require significant change to realize (Bourne & Jenkins, 2013; Lencioni, 2002; Slater et al., 2014), that is, radical innovation capability.

The negative association between value dissimilarity and incremental innovation capability suggests several possible explanations. First, the finding suggests that TMT members categorize harmfully based on their perceived dissimilarity in values, impeding use of the dissimilar values and supporting the social categorization perspective (Hogg, 2001; Tajfel et al., 1971). However, the positive association between value dissimilarity and radical innovation capability suggests that TMT members do not categorize TMT members harmfully based on value dissimilarity, so it seems likely that value dissimilarity between TMT members is not associated with the in-depth information analysis that is necessary for incremental innovation capability (Forsman, 2009). Instead, value dissimilarity enables the TMT to generate ideas and alternatives that go past the incremental, shifting the focus from in-depth analysis of information and thus leading to a negative association of value dissimilarity and incremental innovation capability.

The results also indicate no association between the interaction of informational and value dissimilarity with incremental/radical innovation capability. Multiple social categorization theory implies a positive association here, as the dissimilarities reinforce each other such that no harmful categorization occurs and TMT members can build on their dissimilar information and values (Crisp & Hewstone, 2007). In contrast, the social categorization perspective suggests a negative interaction, as categorization occurs and intergroup biases arise with the higher level of perceived dissimilarity, impeding the use of both information and values (Hogg, 2001; Tajfel et al., 1971). Hence, these findings are inconclusive regarding the predictions of multiple social categorization theory and the social categorization perspective. Still, the nonsignificant interaction suggests that informational and value dissimilarity stimulates the use of different paths to using information and perspectives that occur independently.

Overall, the study's results suggest that the source of dissimilarity determines its association with the type of innovation capability. Informational dissimilarity appears to enable the TMT to use information to innovate incrementally but is insufficient for generating radical innovation capability. Value dissimilarity appears to provide other perspectives that promote transformation and substantive change and benefit radical innovation capability but contains characteristics that are detrimental to incremental innovation capability. The findings emphasize distinguishing the two types of dissimilarity, as each has a different way of using information and values for the respective type of innovation capability. Thus, perceptions of dissimilarity do not appear to evoke harmful categorization processes, suggesting support for multiple social categorization theory and that dissimilarity can also have positive implications.

Implications for theory

This study extends upper echelons theory in two ways: First, it integrates the separation perspective of within-team diversity into upper echelons theory for the context of incremental and radical innovation capability. We apply perceived dissimilarity as a measure of separation to examine how the perception of dissimilarity from other TMT members is associated with the two types of innovation capability. We employ informational dissimilarity as a proxy for perceived information differences from various origins between TMT members and we use value dissimilarity to assess the perceived differences in perspectives. In doing so, we respond to calls from Narayan et al. (2021) and Miller et al.

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(2022) to use direct measures of TMT characteristics to shed light on the black box of the implications of TMT diversity.

Second, the study extends upper echelons theory by examining value dissimilarity between TMT members empirically in the context of incremental and radical innovation capability while controlling for informational dissimilarity. In doing so, we address the dearth of empirical studies about diversity in values in TMTs. While work values are determinants of team processes (Jehn et al., 1999; Pinder, 2008; Ros, Schwartz, & Surkiss, 1999), most studies rely on measures of TMT information diversity (e.g., Chemmanur, Gupta, & Simonyan, 2022; Song et al., 2022; Zhong et al., 2021). Narayan et al. (2021) is the only study of which we are aware that examines the implications of value diversity in TMTs. By distinguishing between informational and value dissimilarity, the study adds a more holistic assessment to recent literature that examines nuanced relationships between TMT diversity and organizational outcomes (Díaz-Fernández, González-Rodríguez, & Simonetti, 2020; Narayan et al., 2021). The findings highlight the importance of such an assessment to generate predictions about the outcomes of diverse TMTs and contribute to identifying the antecedents of incremental and radical innovation capability.

Finally, the study extends the multiple social categorization theory (Crisp & Hewstone, 2007) to the context of TMT diversity. Taken together, the findings provide initial support for predicting that, in highly dissimilar TMTs, no harmful categorization occurs. Thus, it appears that TMT members can leverage dissimilar information and values.

Limitations and avenues for further research

The study is a first attempt to explore the association between dissimilarity among TMT members and innovation capability, so it has several limitations that provide avenues for future research. First, notwithstanding the rigor of our work, we encourage future research to enlarge the sample to increase the generalizability of our findings. Moreover, the study is cross-sectional, as one TMT member per organization is sampled at a single point in time. While we find no indication of common method bias, future studies could use a longitudinal study design of the complete TMT to examine how changes in the TMT composition are reflected in perceptions of dissimilarity and contribute to changes in innovation capability. Such a study could provide further insights into the implications of TMT diversity from a separation perspective.

Second, the study focuses on the direct associations between TMT members' informational and value dissimilarity with incremental and radical innovation capability since it is the first to distinguish between informational and value dissimilarity between TMT members. As the findings indicate both positive and negative associations, depending on the type of dissimilarity and the type of innovation capability, future studies could examine contingency factors and intervening variables. For example, diversity research identifies an inclusive climate as a contingency for leveraging the potential of diversity within the team (Nishii, 2013) or cooperative norms as an intervening variable (Chatman & Flynn, 2001). Furthermore, management levels below the TMT are also involved in innovation activities (Schubert & Tavassoli, 2020). Dissimilarity in hierarchical levels may affect innovation capability, so future studies could examine the interrelationships in types of dissimilarity between hierarchical levels. Examining these contingencies and intervening variables may provide insights into the boundary conditions of how dissimilarity between TMT members contributes to innovation capability and also advance multiple social categorization theory.

Finally, the study's sample is based on organizations that are headquartered in Germany. Future studies could examine whether the cultural context influences perceptions of dissimilarity. As perception differs among national cultures (Tang, Chen, van Knippenberg, & Yu, 2020), TMT members with a strong collectivist cultural background are more likely to be aware of dissimilarities between team members because fitting in a group is more important in collectivist cultures than in individualist cultures (Hofstede & Hofstede, 2004). Hence, examining various cultural contexts may extend upper echelons theory as well as multiple social categorization theory further and may also contribute to

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the generalizability of the study results. Moreover, we encourage future research to consider further outcome variables of TMT dissimilarity, for example, employee satisfaction, or examine interaction effects of perceived and objective dissimilarity.

Managerial implications

The study suggests that organizations' innovation capabilities can benefit from dissimilarity between TMT members in terms of information and values. However, organizations need to pay attention to the type of innovation capability that is desired. Findings suggest that informational dissimilarity fosters a profound analysis of information that is positively associated with incremental innovation capability, whereas value dissimilarity harms it. Instead, when TMT members perceive dissimilarity in values, it may broaden their perspective, supporting radical innovation capability. Therefore, the kind of dissimilarity among TMT members that may be cultivated should depend on the kind of innovation capability the organization wants to pursue, and organizations should consider how informational and value dissimilarity in the TMT will change when new TMT members are appointed. Increasing value dissimilarity among TMT members while pursuing an incremental innovation strategy is likely to be harmful, although doing so would benefit a radical innovation strategy. Research suggests that the perception of dissimilarities can be increased by priming for specific identities of TMT members so that specific parts of dissimilarity become salient (Forehand, Deshpandé, & Reed, 2002). Consequently, priming for informational or value characteristics may increase the perception of dissimilarity between the TMT members and may increase the respective type of innovation capability.

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