Motivational configurations of cultural intelligence, social integration, and performance in global virtual teams

By: Nicole Franziska Richter, Jonathan Martin, Sofie V. Hansen, Vasyl Taras, Ilan Alon

Abstract:

Global virtual teams (GVTs), electronically connected workgroups of geographically dispersed team members in multinational settings, may suffer from less social integration. However, they may also benefit from an increased ability to process information due to a richer portfolio of ideas and problem-solving approaches that the team's diversity provides. We propose that the cultural intelligence (CQ) of team members contributes positively to social integration in GVTs and improves performance. Using data from 263 GVTs, we utilized both structural equation modeling and necessary condition analyses to explore the associations between motivational CQ and a team's social integration and performance. The results identified the must-have (bottlenecks) and should-have (drivers) levels of motivational CQ among team members in GVTs. We contribute to the CQ and GVT literature by linking variation in the team's CQ levels (team average, lowest, highest, and leader CQ) to its social integration and performance.

Keywords: motivational cultural intelligence | social integration | team performance | Global virtual teams | PLS-SEM | necessary condition analysis

Article:

1. Introduction

Global virtual teams (GVTs), defined as "temporary, culturally diverse, geographically dispersed, electronically communicating work group[s]" (Jarvenpaa & Leidner, 1999: 792), have become part of daily business in the workplace (Derven, 2016, Klitmøller and Lauring, 2013). The restrictions on international travel and broader adoption of telework due to COVID-19 will likely further increase the use of GVTs in organizations. Hence, there is substantial practical value in understanding the factors that affect performance in these workgroups. While GVTs generally face similar obstacles as conventional multicultural teams, their virtual nature adds a set of unique challenges to their use in the organizational realm (Kurtzberg, 2014).

Previous research has demonstrated the challenges presented by cultural diversity and the lack of face-to-face interactions in virtual and group collaboration (Dubé and Paré, 2001, Stahl et al., 2010, Stewart, 2006). Cultural diversity is the diversity of cultural values of individuals, that may stem from the collective programming of the mind that distinguishes the members of one national culture from another. This cultural diversity can be a source of creativity and innovation, or conflict and misunderstanding. However, the debate continues about the exact mechanisms and reasons as to why some GVTs perform well and profit from gains in efficiency and cost savings (Cordery et al., 2009, May and Carter, 2001), while others flounder and fail (Ferrazzi, 2014, Siegel et al., 1986, Straus and McGrath, 1994, Weisband, 1992).

Past studies have contributed to the understanding of the impact that intermediary team processes have on multicultural teams (e.g., Stahl et al., 2010). One of these processes is social integration (Cartwright and Zander, 1968, McGrath, 1984, Shaw, 1981). Social integration is defined as a multifaceted construct including elements of cohesiveness (i.e., positive interactions and attraction to the group), trust and morale as well as satisfaction with group members (Harrison et al., 2002, O'Reilly et al., 1989, Stahl et al., 2010). Social integration tends to be lower when physical proximity decreases (Bryant et al., 2009, Carte and Chidambaram, 2004) and when the team's diversity increases (Stahl et al., 2010, Staples and Zhao, 2006, Wiersema and Bantel, 1992). Social integration helps align the team members around common objectives, facilitates communication, coordination, and the exchange of information, as well as improves the development of shared meaning and identity, which aids team performance (e.g., Rulke, 1996). On the other hand, multicultural teams can benefit from diversity and the richer portfolio of ideas and increased ability to process information it affords, which promotes better problem-solving and, ultimately, team performance (Galbraith, 1973, Mannix and Neale, 2005, Tushman and Nadler, 1978).

Unfortunately, when it comes to the link between cultural diversity and performance in GVTs, prior research has not provided definitive support for either a positive or negative effect. As reviewed in two meta-analyses of these studies, the relationship may be more complicated, and the extent of cultural diversity on the team alone cannot explain its performance (Stahl et al., 2010, Stewart, 2006). The lack of consistent findings has motivated researchers to explore other possible factors relevant to explaining team performance on GVTs (e.g., media usage; Hambley, O'Neill, & Kline, 2007; interaction style; Potter & Balthazard, 2002).

One body of literature in cross-cultural management suggests that cultural intelligence (CQ) may be such an explanatory variable. It mitigates difficulties between culturally diverse individuals and may also help unlock the benefits of GVTs (Caputo et al., 2019, Schlaegel et al., 2020, Yari et al., 2020). According to Ang et al. (2007), CQ involves capabilities that allow individuals to "grasp, reason, and behave effectively in situations characterized by cultural diversity" (Ang et al., 2007: 337). CQ is comprised of four different facets: metacognitive CQ (i.e., the processes that individuals use to acquire and understand cultural knowledge), cognitive CQ (i.e., the knowledge about a culture and its knowledge structures), behavioral CQ (i.e., the ability to use a broad, flexible repertoire of verbal and nonverbal behaviors in culturally diverse interactions), and motivational CQ (Ang et al., 2007, Ang and Van Dyne, 2008). We believe that motivational CQ is of specific relevance to our study and that the in-depth examination of this facet has great potential for advancing the understanding of the specific mechanisms that underlie associations.

Motivational CQ refers to the interest and drive of individuals to learn about, partake in, and master interactions involving cultural differences (Ang et al., 2007, Earley et al., 2006). Individuals with high levels of motivational CQ are intrinsically motivated to interact with culturally diverse others in GVTs, which could be key to greater social integration. Moreover, they have a high level of confidence or belief in their ability to master the challenges attributed to GVTs and achieve a certain level of performance in culturally diverse situations. These attributes could be key to better performance. In addition, in previous studies motivational CQ has demonstrated strong associations with various work-related outcomes (Schlaegel et al., 2020).

Albeit there have been many studies on the association between CQ and work-related processes and outcomes (Ali et al., 2019, Caputo et al., 2018, Caputo et al., 2019, Rockstuhl and Van Dyne, 2018), few of them explored the effects of CQ on social integration and/or performance in GVTs (e.g., Groves and Feyerherm, 2011, Moon, 2013, Moynihan and Pandey, 2007; for an overview, see Appendix 1), which points to a critical research gap. In addition, research on CQ that bridges levels of analysis - for example, team and individual levels – is still scarce (Yari et al., 2020). Our study contributes to recent calls for more research on CQ at the team level by considering the CQ scores of the team and individual members (Fang et al., 2018, Jimenez et al., 2017, Ott and Michailova, 2018).

One critical issue that remains underexplored in this context is the role of the configuration of CQ on the team (Martins & Schilpzand, 2011). The majority of studies that looked at the effects of CQ in the context of team performance (see Appendix 1) operationalized it as the average team-level CQ. However, it might not be the team-average CQ that matters, but perhaps more specific types of configurations, such as the CQ of the highest and lowest scoring individuals on the team. At least in part, several studies have explored the effects of CQ configurations and found significant results within dyads (e.g., Chua, Morris, & Mor, 2012). For instance, Imai and Gelfand (2010), who confirmed the specific relevance of motivational CQ, found that integrative behaviors were a function of the lower, rather than the higher, scoring CQ individual within intercultural negotiation situations. Furthermore, Li, Rau, Li, and Maedche (2017) found that in global virtual dyads, the lower scoring (motivational and behavioral) CQ individual affected the frequency of collaborative behaviors, while the higher scoring (motivational and cognitive) CQ individual significantly impacted the performance (in the form of the quality of the outcome).

We examine how specific individual levels of CQ (minimum and maximum CQ members, and the leader's CQ) and the team's average level of CQ impact GVTs' social integration and performance by applying structural equation modeling (SEM) and necessary condition analyses (NCA) to a sample of 263 GVTs. The results advance our understanding of how CQ and its configurations may buffer the negative effects and amplify the positive effects of cultural diversity in GVTs. We identify the should-have CQ levels of (specific) team members that have a positive influence on their social integration and performance. We also determine the must-have CQ levels of (specific) team members that are necessary to achieve the outcomes. While these findings are of theoretical relevance in better understanding the mechanisms that underlie performance in GVTs, they will also help managers develop socially integrated and high performing GVTs.

2. Theoretical background and development of hypotheses

2.1. Social integration and performance in GVTs

GVTs are characterized by cultural diversity, and its effects can be mixed. A recent review of 1141 publications on the topic revealed that 95% of them theorized and tested the adverse effects of diversity (Stahl & Tung, 2015). In other words, they saw and treated cultural diversity as a barrier or challenge. As such, diversity is assumed to hurt the social integration of the team members, which reduces its performance (Mannix & Neale, 2005).

This thinking is rooted in the *social categorization* and *faultline theories* (see Mayo et al., 2017, van Knippenberg et al., 2010). S*ocial categorization* posits that team members initially categorize their peers into an "outer" and "inner" group (Tajfel, 1982, Tajfel et al., 1971). While team members in the inner group are approached with feelings of favoritism, trust, and cohesion, an out-group categorization leads to more stereotyping and less communication, cooperation, acceptance, and support (e.g., Jaiswal and Dyaram, 2019, Mannix and Neale, 2005, Phillips and Loyd, 2006). This categorization is initially supposed to be based on surface-level attributes, such as nationality. However, these categorizations change over time when deep-level information, such as the team members' cultural values, are learned via verbal and nonverbal behavior patterns (Harrison, Price, & Bell, 1998). Similarly, *faultline theory* suggests that faultlines divide a group's members not only based on attributes such as demographic diversity (Lau & Murnighan, 1998), but also more deep-level differences (e.g., van Knippenberg et al., 2010). In other words, differences in values and attitudes often act as a barrier or deterrent that makes team members less attractive to one another, reduces their interest in collaborating and spending time together, makes interactions less satisfying, and, thus, impedes the development of interpersonal relationships (e.g., Berkowitz and Walster, 1976, Berscheid and Hatfield, 1969, Byrne, 1997, Layton and Insko, 1974). Furthermore, cultural diversity may disrupt the exchange and integration of information between team members, which is critical for team performance (van Knippenberg et al., 2010).

In contrast, a considerable body of research points out the positive effects of cultural diversity on teams. The *information processing theory* (Simon, 1978) provides an insight into the positive effect of diversity. It postulates that the larger the pool of information and the greater the variety of available perspectives, the better the group's problem solving, creativity, innovation, and adaptability (Simon, 1978). Indeed, solving complex problems requires a large pool of knowledge and information. Members of homogeneous teams tend to have access to similar pools of knowledge and information, while diverse team members can tap into more diverse sources of knowledge and information (Galbraith, 1973, Mayo et al., 2017, Tushman and Nadler, 1978). The diversity of perspectives, experiences, preferences, and understandings in culturally diverse teams also reduces the probability of falling into the "groupthink" trap, which homogeneous teams are prone to suffer from (Janis, 1982). Diverse teams consider more alternatives and viewpoints, which aids creativity, innovation, and decision making (Jackson, 1992, Nemiro, 2002, Watson et al., 1993). The key to realizing these potential benefits of diversity is interaction and information exchange among the team members. The many viewpoints and opinions can be considered only if the team members share them.

A wide array of research has shown that there is less social integration when team members differ from one another (e.g., Hinds and Weisband, 2003, O'Reilly et al., 1989, Roberge and Van Dick, 2010, Van Knippenberg et al., 2004), there is extensive national diversity (Bouncken, Brem, & Kraus, 2016), and faultlines exist (e.g., Leslie, 2017, Schölmerich et al., 2016). Furthermore, while some research has provided empirical support that diversity has a positive effect on performance (e.g., Boekholt et al., 2019, Kilduff et al., 2000), meta-analyses by Stahl et al., 2010, Stewart, 2006 found no direct relationship between cultural diversity and team performance. The theoretical frameworks of the potential performance outcomes in GVTs are in line with research on multicultural co-located teams. Taras et al. (2019) reported strong adverse effects due to out-group prejudice (common in GVTs) and strong positive effects due to an increased variety of perspectives and knowledge (difficult to tap in GVTs). The empirical findings differ slightly: Stahl et al. (2010) found that the negative impact of cultural values on social integration is weaker in GVTs than in co-located teams due to the absence of nonverbal cues and synergies that individuals use to determine similarity for social categorization.

Hence, in GVTs, we need to identify the potential facilitators of positive outcomes that buffer the negative effects of diversity and unlock the positive effects. We suggest that team members' motivational CQ is a key driver and potential bottleneck in GVTs to achieving social integration and improving performance.

2.2. The team's average motivational CQ as an antecedent

In developing the concept of motivational CQ, Van Dyne et al. (2012) made use of motivation theories (Ryan & Deci, 2000) and social cognitive theory (Bandura, 2002). Building on these theories, motivational CQ refers to individuals' interest in experiencing cultural diversity and working on global teams where people come from different cultural backgrounds. Such individuals demonstrate strong relational skills. Moreover, motivational CQ involves people's sense of self-efficacy that they can adjust to GVTs with team members who are different from them. Self-efficacy refers to one's confidence in one's ability to perform a behavior or achieve a certain outcome and is positively related to future performance (see also Locke, Motowidlo, & Bobko, 1986). It includes beliefs about the ability to function under stress and in uncertain situations; in the context of CQ, it refers to having interactions with culturally diverse others in workgroups (Van Dyne et al., 2012), such as GVTs. Hence, individuals with a high level of motivational CQ have strong relational skills, an interest in getting involved with their GVT members, and exhibit the self-efficacy to maneuver in challenging situations during the team's work. Indeed, several studies have identified relational skills and self-efficacy as key individual antecedents in the successful adjustment to international contexts when interacting and working with diverse others (see the meta-analysis by Bhaskar-Shrinivas, Harrison, Shaffer, & Luk, 2005; and conceptualizations in Black, Mendenhall, & Oddou, 1991).

We argue that motivational CQ is a critical factor influencing the salience of categorization in GVTs. Individuals with better relational skills interact more easily with their cross-cultural team members. Hence, we assume that they will be less likely to categorize their team members as belonging to an out-group, minimizing the development of faultlines between team members. The diversity on the team is less of a barrier and less likely to make other team members less

attractive. On the contrary, motivational CQ will help the team develop satisfying interpersonal relationships. Different others are valued and interacted with more frequently (see also the line of argument in Rockstuhl & Ng, 2008). Ultimately, this attitude of team members should lead to greater social integration within the team. Authors studying related constructs support this assertion. One example is Flaherty (2008), who researched the acceptance and integration of newcomers in groups. Nevertheless, there are also studies that did not find a significant relationship between motivational CQ and other factors such as trust (e.g., Rockstuhl & Ng, 2008).

Furthermore, given that teams with more motivational CQ interact more, they will exchange more information, which helps the team realize the benefits proposed by the information processing theory. GVTs with on average higher levels of motivational CQ are more likely to tap the potential that lies in the diversity of perspectives and experiences on the team. They are better equipped to access and process the increased information and knowledge available to the diverse team, which aids in the development of novel solutions and, thus, performance (see Bogilovic & Skerlavaj, 2016 following a similar line of argument related to higher creativity). Imai and Gelfand (2010), for instance, maintained that motivational CQ is a key facet in predicting integrative information behaviors in negotiations (yet again, there are studies in which motivational CQ is not significantly related to relevant outcomes, e.g., Adair, Hideg, & Spence, 2013).

Finally, due to their greater self-efficacy, individuals with higher levels of motivational CQ strive for higher goals, are more likely to actively engage in the tasks of the group work, and are more likely to devote more time and effort to accomplish tasks (e.g., Chen, Kirkman, Kim, Farh, & Tangirala, 2010). Moreover, they are better able to manage the stressors in cross-cultural environments (Bhaskar-Shrinivas et al., 2005, Black and Gregersen, 1991, Harrison et al., 2004) and should therefore be better positioned to face and overcome challenges and achieve success (Ang et al., 2007). Hence, GVTs with on average higher motivational CQ should achieve better performance. For instance, Magnusson, Schuster, and Taras (2014) reported that motivational CQ has a positive influence on the effort that is devoted to the work in GVTs. Based on these findings, we posit that:

Hypothesis 1. A greater average motivational CQ on the team leads to (a) stronger social integration on the team and (b) better team performance.

2.3. The maximum and minimum levels of individual motivational CQ as antecedents

Another approach to looking at the effect of CQ on teams is to take into account the differences among the team members, for instance, the influence of the most and least culturally intelligent members (Shokef & Erez, 2008). This approach – often referred to as a compilation or configuration approach[1] – allows for analyzing more complex combinations of individual-level contributions (Klein & Kozlowski, 2000). There are situations where bottom-up effects, meaning from the individuals to the team, can impact both other individual team members and the team's

---

[1] Semantic differences exist in the professional literature. In the *Handbook of Cultural Intelligence*, authors used the terms "compositional" (average scores) and "compilational" (individual-level contributions) (see e.g. Shokef & Erez, 2008, p. 186). We follow Ng and Van Dyne (2005) and use the term "configuration."

success overall (Chen and Kanfer, 2006, Morgeson and Hofmann, 1999). Studies have identified the role of CQ in this regard as a key area for future research (e.g., Adair et al., 2013).

The productivity of teams is a function of the types of tasks, as well as the demands on them, the resources they possess, and the processes they follow (Steiner, 1966). The nature of the task, as such, is essential, as it determines the relevance and utilization of resources (Steiner, 1966). Interactive tasks can be classified as conjunctive, disjunctive, or complementary (Laughlin, 2011). In disjunctive tasks, team performance depends on its strongest member's performance, as when a team is solving a math equation. In contrast, in conjunctive tasks, team performance depends on its weakest member, as in synchronized swimming, where one member's asynchronicity jeopardizes the overall performance. Finally, in complementary tasks, the resources of a team's members (skills, knowledge, abilities, etc.) are combined to create a collective product beyond what a single member could achieve (Laughlin, 2011). In this case, a few members can make up for the deficiencies of other team members, as in a quiz situation.

In our study, the task corresponded to a typical real business challenge. This task involved complementary, but equally conjunctive as well as disjunctive characteristics. First, the team members were strongly interdependent. In evaluating the performance, all team members received the same performance evaluation for the project, and this evaluation depended on the overall content and coherence of the solution developed. Second, the business challenge was complex and required a variety of skills such as research, critical thinking, planning, organizing, and writing. However, the challenge also involved parts to which an optimal (group-wise disjunctive) solution needed to be devised, such as when it came to the development of the financial considerations and outcomes of a business idea.

In this situation, we posit that the maximum motivational CQ on the team impacts the team's integration, as the member with the maximum CQ might outweigh the adverse effects of less competent members. The inputs of an extremely culturally intelligent group member can make considerable improvements to the overall quality of the relationships within the team. As Adair et al. (2013) stressed, one consistently cooperative member on a team can influence the rest of the team to endorse cooperative behaviors. Following Ellemers, De Gilder, and Haslam (2004), the level of motivational CQ of the most culturally competent members within the team, and their subsequent wish to engage in multicultural situations, will lead them to regard team affiliation as desirable, increasing the willingness to invest behavioral energy in establishing membership. Hence, the motivational CQ of the highest-scoring member may buffer the emergence of faultlines and social categorization on the team, ultimately leading to increased social integration.

Furthermore, maximum motivational CQ on the team impacts performance for two reasons. First, it is more likely to unlock the potential that lies in the diverse perspectives and experiences on the team. The team member with the highest CQ can unlock and integrate information provided by other team members, realizing the benefits proposed by the information processing theory. Second, the team member with the highest CQ (and therewith a high self self-efficacy) can address many aspects of the cross-cultural group tasks by himself or herself. Hence, we hypothesize:

Hypothesis 2. A greater motivational CQ of the most culturally intelligent member on the team leads to (a) stronger social integration on the team, and (b) better team performance.

In contrast, when members are interdependent and have differentiated roles, one member with an extremely low CQ score can dampen the team's morale and limit the reciprocal assistance among the team members, which will reduce social integration. Drawing on Ellemers et al. (2004), the level of motivational CQ of the least culturally competent individuals will make them regard affiliation with the highly diverse team as less desirable and subsequently lead to investing their energy in establishing themselves as outsiders. In other words, the motivational CQ of the least culturally competent member may be associated with social categorization and faultlines, so that the lower the motivational CQ of this member, the less socially integrated the team and vice versa.

Furthermore, the lower motivational CQ of the least competent member will result in the team developing a mediocre solution, in part because there will be fewer exchanges of knowledge and information with this person. For example, Imai and Gelfand (2010) reported that individuals with the lower CQ have a stronger influence on the integrative information behaviors in dyads than those with the higher CQ. Hence, the GVT cannot fully profit from the benefits of greater information processing in diverse teams. Finally, the team's performance may suffer from the failure of the low CQ member to make an adequate contribution to the team's efforts. We posit that:

Hypothesis 3. A higher motivational CQ of the least culturally intelligent member on the team leads to (a) stronger social integration on the team, and (b) better team performance.

2.4. The leader's motivational CQ as an antecedent

We hypothesize that single individuals and their CQ scores matter in terms of social integration and performance. We assume that this individual impact is even more relevant if the team member in question has a leadership role. We assume that the CQ score of the team leader is relevant in determining the team's social integration and performance based on numerous studies researching the outcomes of effective leadership (e.g., Groves and Feyerherm, 2011, Presbitero, 2020, Rosenauer et al., 2016).

Drawing upon Ellemers et al. (2004) and the social categorization theory, we assume that the leader's ability to energize, direct, and promote positive behaviors depends strongly on his or her ability to create a positive shared social identity within the team. Doing so requires interaction between the leader and the team. Therefore, we believe that leaders with high levels of motivational CQ will have a positive impact on reducing social categorization and faultlines, improving the team's social integration.

Moreover, we assume that the leader has a specific role in creating a combined team report that is beyond what the single team members could achieve. The leader is responsible for synchronizing tasks and contributions, and integrating information. The greater the motivational CQ of the team leader, the more likely the team will make use of the diversity of perspectives on it and unlock the benefits outlined in the information processing theory. Moreover, the greater

the motivational CQ of the leader, the greater his or her self-efficacy, enabling both valuable individual contributions and increasing the probability that he or she will succeed in creating a convincing team report. Hence, we assume that the greater the motivational CQ of the team leader, the better the team's performance.

Hypothesis 4. A greater motivational CQ of the team leader leads to (a) stronger social integration on the team, and (b) better team performance.

2.5. Motivational CQ as a necessary condition

We find several arguments in the literature on CQ and work in teams leading us to contend that CQ is a must-have factor for specific team outcomes (for a discussion of the logic, see for instance, Hauff, Guerci, Dul, & van Rhee, 2019). For instance, Presbitero (2020) noted that CQ entails *the necessary capabilities* that *an individual needs to perform* effectively in the presence of cultural diversity. Imai and Gelfand (2010) related CQ to two forms of motives (cooperative and epistemic) *that will allow individuals* to achieve better performance. Formulations like this imply necessity; that is, if the necessary cause is not in place, the outcome will not materialize (Dul, 2016). Thus, based on Goertz (2017), to develop a necessity hypothesis, we must evaluate why the absence of a determinant (here: motivational CQ) causes the absence of an outcome (here: social integration and performance).

We argue that, on culturally diverse teams, motivational CQ is a necessary condition for strong social integration and good performance. Motivational CQ must be present for effective teamwork that leads to good performance. Furthermore, we maintain that other determinants cannot fully substitute for CQ. As Ang, Van Dyne, and Tan (2011) stated: "Since the norms for social interaction vary from culture to culture, it is unlikely that cognitive intelligence, emotional intelligence, or social intelligence will translate automatically into effective cross-cultural adjustment, interaction and effectiveness" (p. 583).

If the GVT members do not possess motivational CQ, they lack the capabilities that are necessary to relate to and interact with culturally diverse others. As a consequence, they will not be able to avoid social categorization and faultlines. Without motivational CQ on the team, a GVT will be unable to socially integrate its members.

Furthermore, we assume that motivational CQ is a necessary condition for cross-cultural teams to achieve good performance. Motivational CQ is a necessary condition for effective interaction and therewith the exchange of information and integration of perspectives of different team members; hence, without motivational CQ, there will be no information exchange in culturally diverse teams. Therewith the benefits of cultural diversity in GVTs (stemming from information processing theory) may never be realized and good levels of performance can hardly be achieved. Furthermore, for GVTs to succeed, their members need self-efficacy. Without motivational CQ, GVTs' members will lack this self-efficacy, making them less confident about mastering challenging cross-cultural situations and achieving ambitious goals. Accordingly, we posit that motivational CQ in a GVT is a necessary condition for a good team performance.

While these arguments hold for the team's average motivational CQ, we posit that it is also the motivational CQ of the least culturally intelligent member and the leader's motivational CQ that may create bottlenecks to the team's strong social integration and good performance. Thus, if one member on the team has no motivational CQ, we argue that full social integration is hardly possible, nor is the full exchange of relevant information and ideas. Support for this contention comes from studies about negotiation outcomes. A negotiator cannot find a win–win outcome if the other side is completely reticent or intransigent or lacks motivational CQ (Chua et al., 2012, Imai and Gelfand, 2010). On the contrary, researchers argue that the interaction and communication gap can be bridged as long as at least one team member is good at taking the other's perspective (Chua et al., 2012). In other words, some scholars assume that if one member on the team has no motivational CQ, the motivational CQ of other team members can act as a substitute, with all of the relevant implications for social integration and performance. Hence, the arguments for a necessary condition on the level of the least culturally intelligent member are somewhat weaker. We will nonetheless formulate a necessity hypothesis that we will test.

Finally, we posit that the leader's motivational CQ represents a critical bottleneck for both social integration and team performance. This hypothesis accords with the argument that leaders with a high level of CQ possess the necessary skills to effectively mediate the intra-team conflict associated with culturally diverse work teams (Groves & Feyerherm, 2011). They can prevent the negative effects of social categorization, unlocking the positive potential of the different perspectives represented in diverse teams (Rosenauer et al., 2016). Hence, we assume that if the team leader lacks motivational CQ, the GVT will not be able to effectively interact and socially integrate, nor will it be able to fully leverage the relevant benefits from the team's information base, making a good level of performance hardly possible. Furthermore, we posit that the motivational CQ of the team leader cannot be substituted by other team members' motivational CQ due to the specific role that the leader plays in promoting the team's processes and outcomes.

Based on these contentions, we maintain that:

Hypothesis 5. The team's average level of motivational CQ is a necessary condition for (a) strong social integration on the team and (b) good team performance.

Hypothesis 6. The motivational CQ of the least culturally intelligent member on the team is a necessary condition for (a) strong social integration on the team and (b) good team performance.

Hypothesis 7. The motivational CQ of the team leader is a necessary condition for (a) strong social integration on the team and (b) good team performance.

3. Methodology

3.1. Sample

We tested our hypotheses using data from the X-Culture project, a large-scale international business competition among students that takes up an entire semester. At the time of the data collection, up to 4000 students from 150 universities in 40 countries took part in the project in a given semester. Up to a dozen companies presented them with real-life international business

challenges. The students worked in GVTs, each comprised of up to seven team members from different countries. The active phase of the project lasted two months. During this time, the team members communicated nearly daily as they worked on developing their solutions to the presented challenges.

The data used in this study were collected in the fall semester of 2018. The initial sample included 3531 individuals who worked in 822 GVTs. However, we encountered the issue of incomplete team answers due to missing responses. As the teams varied in size, using either a proportion or a minimum number of responses as cut-off criteria was not useful. Dawson (2003) recommended that in cases of varying group sizes, the so-called sample ratio (SR) should be calculated (SR = [N – n]/Nn, with N = group size, n = number of responses). A resulting value of 0.32 or lower means that scores of a specific team are significantly correlated ($p < 0.05$) (Dawson, 2003). Due to the nature of the constructs used in this paper, we chose a stricter cut-off criterion of 0.10, resulting in a final sample of 263 GVTs and 966 individual cases. Missing values were no longer an issue in this final sample; moreover, further analyses demonstrated that individuals with missing values did not systematically differ from those without missing values.

The average age in our sample was 23.2 years, 52% were male, and the average team size was 3.7 students. Overall, the teams were all very diverse nationally, with team members from 87 countries and 3.4 different nationalities per team.

3.2. Measures

The measures used in our survey were taken or adapted from the literature. The surveys were presented in English, as it was the project's working language, and all students were tested for English proficiency prior to being placed on teams.

Team performance. The quality of the work produced by the teams was used as a proxy for team performance. Each team prepared a report that detailed the team's solution to their client company's international business challenge. Each team report was evaluated by four to six experts (typically international business professors or company representatives). The reports were evaluated on eight dimensions, including the economic feasibility and novelty of the idea, analysis quality and depth, formatting and visual appeal, and the report's overall quality. The evaluators followed a standard set of evaluation rubrics and assessed each dimension of the report on a 1 (very poor) to 7 (excellent) scale. The evaluators had to agree on a final grade for the team. The internal reliability of the scale was 0.850, and the inter-rater reliability was between 0.720 and 0.910, depending on the evaluation dimension.

Social integration. We measured social integration using six reflective items that captured the three relevant facets in social integration identified in the literature: cohesiveness, trust/morale, and satisfaction with the team (see, for instance, Nakata and Im, 2010, O'Reilly et al., 1989, Zaccaro, 1991). First, to assess cohesiveness, students were asked to rate (on 5-point scales) how *"friendly, nice and positive the communication with the team members was,"* and whether they *"talked with one another openly and freely."* Moreover, they were asked to rate the *level of enjoyment* they had in working with the team members (on a scale from 0 to 100), and *"How often did you discuss with your teammates matters that are not related to the project,*

such as the weather, hobbies, friends, movies or something else?" (on a 5-point scale from never to most of the time, abbreviated as *Team Chemistry*). To measure trust, we again used a 5-point scale to assess whether *"they trust their team members."* Finally, to assess satisfaction, we asked, *"If you were to participate in X-Culture again, would you like to work in the same team?"* (on a scale from 0 = absolutely not, to 100 = definitely yes, abbreviated as *Same Team* in the following). The ICC(1) of the social integration construct comprising these items was 0.235, in line with previous studies (e.g., Erez et al., 2013). It also had a significant F-value ($p < 0.001$), which indicates acceptable agreement on the group level. Hence, we aggregated these items to the group level. The resulting reliability scores for these six items generated using our PLS structural equation models showed good values: almost all loadings were above 0.7 in all models (two constructs fell slightly below, but demonstrated values above 0.5); all average variances extracted (AVE) were above 0.5, and all composite reliability scores (CR) were above 0.7 (see Table 1) (Hair, Risher, Sarstedt, & Ringle, 2019).

Table 1. Evaluation of measurement models.

	Model 1			Model 2			Model 3			Model 4		
	Loadings	AVE	CR	Loadings	AVE	CR	Loadings	AVE	CR	Loadings	AVE	CR
Team Performance (Instructor ratings)												
TLPERF	1.000			1.000			1.000			1.000		
Social Integration												
Friendly/positive communication	0.586	0.552		0.690	0.581		0.687	0.582		0.643	0.571	
Open and free communication	0.809	0.879		0.820	0.890		0.822	0.891		0.811	0.887	
Enjoy working with the team	0.820			0.843			0.839			0.832		
Team chemistry	0.615			0.514			0.511			0.567		
Trust the team	0.756			0.800			0.805			0.791		
Same team	0.831			0.850			0.854			0.847		
Motivational CQ (Model 2)												
MOT1 - team average				0.733	0.640							
MOT2 - team average				0.803	0.899							
MOT3 - team average				0.818								
MOT4 - team average				0.809								
MOT5 - team average				0.833								
Motivational CQ (Model 3)												
MOT1 – maximum							0.676	0.545				
MOT2 – maximum							0.753	0.856				
MOT3 – maximum							0.804					
MOT4 – maximum							0.693					
MOT5 – maximum							0.757					
MOT1 – minimum							0.731	0.543				
MOT2 – minimum							0.708	0.856				
MOT3 – minimum							0.807					
MOT4 – minimum							0.691					
MOT5 – minimum							0.741					
Motivational CQ (Model 4)												
MOT1 – leader										0.724	0.620	
MOT2 – leader										0.803	0.891	
MOT3 – leader										0.819		
MOT4 – leader										0.773		
MOT5 – leader										0.813		

	Model 1			Model 2			Model 3			Model 4		
	Loadings	AVE	CR	Loadings	AVE	CR	Loadings	AVE	CR	Loadings	AVE	CR
Controls (Models 2 and 3)												
MET 1 – team average				0.843	0.693		0.843	0.693				
MET 2 – team average				0.821		0.900	0.820		0.900			
MET 3 – team average				0.908			0.908					
MET 4 – team average				0.750			0.750					
COG 1 – team average				0.783	0.641		0.783	0.641				
COG 2 – team average				0.719		0.914	0.719		0.914			
COG 3 – team average				0.867			0.868					
COG 4 – team average				0.829			0.829					
COG 5 – team average				0.811			0.811					
COG 6 – team average				0.784			0.784					
BEH 1 – team average				0.696	0.646		0.696	0.646				
BEH 2 – team average				0.838		0.901	0.838		0.901			
BEH 3 – team average				0.876			0.876					
BEH 4 – team average				0.838			0.838					
BEH 5 – team average				0.757			0.757					

	Model 1			Model 2			Model 3			Model 4		
	Loadings	AVE	CR	Loadings	AVE	CR	Loadings	AVE	CR	Loadings	AVE	CR
Controls (Model 4)												
MET 1 – leader										0.880	0.704	
MET 2 – leader										0.798		0.905
MET 3 – leader										0.899		
MET 4 – leader										0.773		
COG 1 – leader										0.729	0.616	
COG 2 – leader										0.726		0.906
COG 3 – leader										0.791		
COG 4 – leader										0.851		
COG 5 – leader										0.834		
COG 6 – leader										0.769		
BEH 1 – leader										0.686	0.641	
BEH 2 – leader										0.819		0.899
BEH 3 – leader										0.869		
BEH 4 – leader										0.823		
BEH 5 – leader										0.797		
Further controls												
Age	1.000			1.000			1.000			1.000		
Cultural diversity	1.000			1.000			1.000			1.000		

Notes: AVE = average variance extracted; CR = composite reliability (as the preferred measure over α in PLS-SEM).

(Motivational) CQ. We utilized the five items of motivational CQ from Ang and Van Dyne (2008) and used a 5-point-Likert scale from 1 = strongly disagree to 5 = strongly agree on their original items. Sample items are *"I enjoy interacting with people from different cultures;" "I am confident that I can socialize with locals in a culture that is unfamiliar to me"* and *"I am sure that I can deal with the stresses of adjusting to a culture that is new to me."* We calculated the mean motivational CQ score within each team and identified the scores on the extremes, meaning the highest and lowest scoring CQ individual on the team. We also determined the leader(s)' motivational CQ. To identify the leader or leaders within each team, participants were asked whether they had a single leader or several leaders and to identify them. Of the 263 teams, 56% had a single leader, and 44% had two individuals that were both perceived as leaders. For

the latter, we calculated the unweighted average of the two leaders' motivational CQ scores. This is a proxy for the motivational CQ of the leading team, as we did not know the relative contribution for each leader. We used the other original items from Ang and Van Dyne (2008) to measure and control for the remaining CQ dimensions: metacognitive CQ (four items, e.g., *"I am conscious of the cultural knowledge I apply to cross-cultural interactions"*), cognitive CQ (six items, e.g., *"I know the cultural values and religious beliefs of other cultures"*), and behavioral CQ (five items, e.g., *"I change my verbal behavior (*e.g.*, accent, tone) when a cross-cultural interaction requires it"*). For all facets (metacognitive, cognitive, motivational, and behavioral) and levels of CQ (team average, min/max, and leader), the outer loadings (>0.7) and indicator reliabilities (>0.5) corresponded in the overwhelming majority of cases to the threshold values for evaluating the reliability of the reflective measurement models. All our AVEs and CRs corresponded to the threshold values (>0.5; >0.7); hence, we kept all of the indicators we originally envisaged (see Table 1 and the recommendations in Hair, Hult, Ringle, & Sarstedt, 2017).

Cultural diversity. We calculated cultural diversity on the team-level based on the CVSCALE developed by Yoo, Donthu, and Lenartowicz (2011) using Hofstede's logic (that has received various critical discussions in the past, see, for instance, Askegaard, Kjeldgaard, & Arnould, 2009). The scale includes 26 items measuring five cultural dimensions using 5-point Likert type (agreement) questions (from 1 = strongly disagree to 5 = strongly agree; 1 = very unimportant to 5 = very important). Sample items are *"People in higher positions should make most decisions without consulting people in lower positions"* (power distance), "*It is important to closely follow instructions and procedures"* (uncertainty avoidance), *"Individuals should sacrifice self-interest for the group"* (collectivism), *"Careful management of money (thrift)"* (long-term orientation), *"There are some jobs that a man can always do better than a woman"* (masculinity). The scores obtained were subsequently used to calculate the team's cultural diversity. To do so, we relied on Kogut and Singh (1988) and used the formula below with the five dimensions of culture:

$$CD_j = \sum_{i=1}^{5} \left(\frac{(I_{ij} - I_{iu})^2}{V_i} \right) \Big/ 5$$

CD_j assesses the cultural difference between the jth individual and the base individual u, I_{ij} is the index for the ith cultural dimension and j^{th} individual, and V_i is the index variance of the ith dimension. We used this formula to calculate the distance between each member of the team (using team members subsequently as base individuals). The sum of these individual distances within each team was our measurement of its cultural diversity.

Age. Age was expressed as the average age within each team. Table 1 provides an overview of the quality of our measurement models using standard reporting criteria from a PLS-SEM context (loadings, AVE, and the CR) (Hair et al., 2019).

All measures met the discriminant validity criteria evaluated by means of the heterotrait-monotrait-(HTMT) ratio; none of the bias-corrected HTMT confidence intervals included the value 1 (see Henseler, Ringle, & Sarstedt, 2015).

To mitigate potential bias as a result of common-method variance, we measured the dependent and independent variables at different times, and the items were randomized within their survey blocks. Moreover, the data were collected using different sources: the data involved self-reports and expert evaluations to measure performance. This approach reduced the potential for common method bias (see Podsakoff, Mackenzie, Lee, & Podsakoff, 2003). We also assessed the threat of common-method bias post-hoc using Harman's single factor test (Podsakoff & Organ, 1986). The results revealed no "general factor" in the data, indicating that the common-method bias was not a threat to the validity of our findings.

3.3. Research approach

To test our hypotheses, we used the analytical approach depicted in Fig. 1. Our analyses involved testing three models. Following the recommendations of Nielsen and Raswant (2018), we estimated and reported a base model beforehand. The base model comprised variables that have been found to have an association with both social integration and performance in past studies: team size (e.g., Mullen et al., 1987, Shaw, 1981), age, gender, and cultural diversity (e.g., Stahl et al., 2010), and English language skills (e.g., Gunkel, Schlaegel, & Taras, 2016). Among our five base control variables, there were no significant relationships between English skills, gender, and team size ($p < 0.05$) and social integration or performance. Testing their impact on subsequent models, we found that their integration into the models did not change the results. Hence, we omitted them from the final analysis and kept the average age and cultural diversity as control variables.
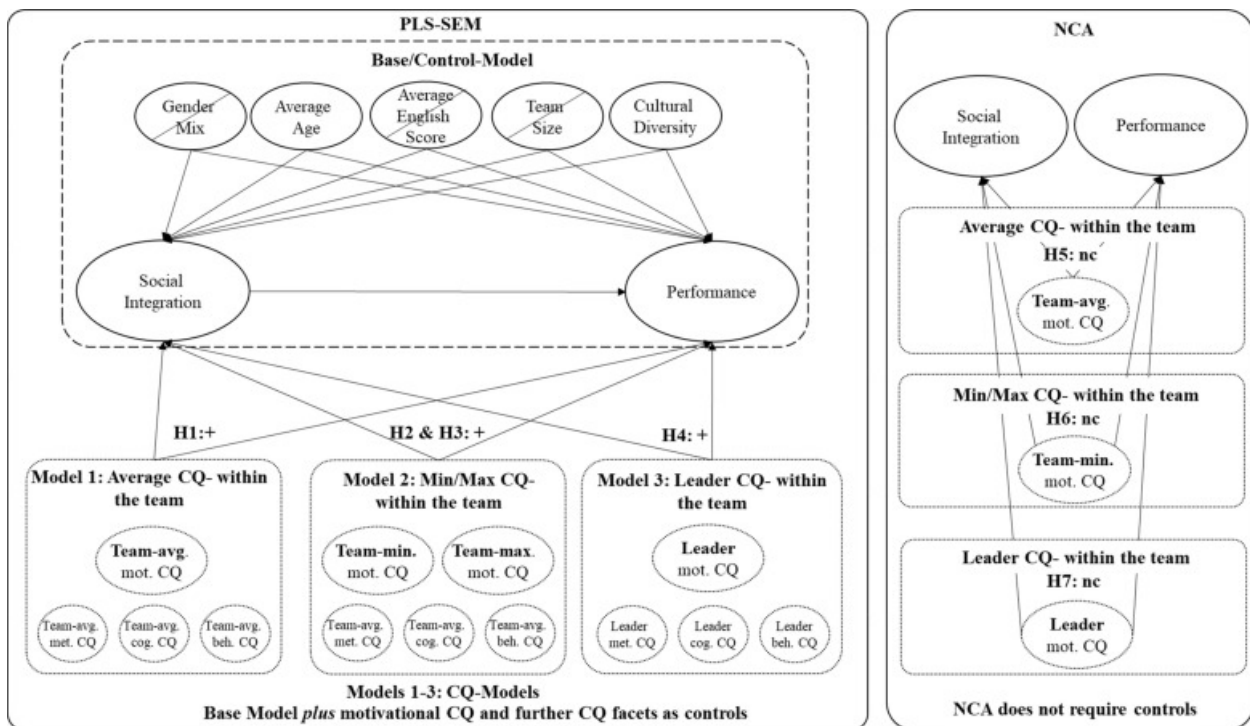

Fig. 1. Analysis approach.

Thereafter, we created three research models that added different perspectives to this base model. In Model 1, we added the team's average motivational CQ to assess its impact on social

integration and performance. In Model 2, we added the motivational CQ scores of the individuals with the minimum and maximum CQ levels within the team. In Model 3, we added the leader's motivational CQ to the base model to answer the question about the impact of this factor on the team's social integration and performance. To provide the full picture of the role of CQ, we added the other CQ dimensions to these models as additional control terms, even if they were not significantly associated with the dependent constructs. In Models 1 and 2, we added the team's average metacognitive, cognitive, and behavioral CQ and in Model 3, we added the leader's metacognitive, cognitive and behavioral CQ.

3.4. Analysis techniques

We used two analytic techniques to test our hypotheses. First, we used PLS-SEM with the SmartPLS 3 software (Ringle, Wende, & Becker, 2015). We opted for using PLS-SEM rather than other structural equation modeling techniques (Richter et al., 2016, Rigdon et al., 2017) because we made use of several of its benefits when designing our path model (including tests of unobserved heterogeneity and predictive power assessments) (Richter, Sinkovics, Ringle, & Schlaegel, 2016). The method allows estimating a path model with latent variables (such as motivational CQ and social integration) (Hair et al., 2019). The strength of the estimated relationships between the latent variables depicts the impact of our latent explanatory variables in explaining our target constructs: social integration and performance (Hair, Sarstedt, Pieper, & Ringle, 2012). The interpretation of findings from a PLS-SEM model follows a sufficiency logic, answering hypotheses that take the form "X has a positive effect on Y." Hence, using PLS-SEM, we can determine the so-called should-have factors for teams to socially integrate and perform well (Richter, Schubring, Hauff, Ringle, & Sarstedt, 2020). We obtained the PLS-SEM results using the following settings in all steps of the analysis: path weighting scheme, 300 iterations, stop-criterion 0.0000001, and replaced missing values by the mean value. We determined significance by applying the bootstrapping procedure (see Chin, 1998, Henseler et al., 2009) with the following settings: 5000 bootstrapping subsamples, as many observations per subsample as in the original sample, and the no sign change option.

Furthermore, we applied NCA using R and the package NCA (Dul, 2018). The necessity logic implies that a determinant is *necessary but not sufficient*. In other words, without the necessary determinant (for instance, motivational CQ), there is guaranteed failure (for instance, poor performance). A necessary cause is a constraint that must be managed to allow the desired outcome to exist. The absence of a necessary condition cannot be compensated for by other determinants; hence in its absence, there is no outcome (Dul, 2016). For example, if we determine that the team's average motivational CQ is a necessary condition for good team performance, such performance will not be achieved without motivational CQ on the team. Hence, the NCA provides a valuable additional understanding of the critical role of motivational CQ (see also Richter, Schlaegel, van Bakel, & Engle, 2020) and follows recent ideas to identify the necessary conditions in the field (see also the discussion in Rockstuhl & Van Dyne, 2018). It assesses the must-have or bottleneck factors for social integration and team performance. We obtained the NCA results (on the PLS-SEM latent variable scores) using the following settings (Richter, Schubring, et al., 2020): ceiling envelopment–free disposal hull ceiling technique (ce-fdh) ceiling line, which is the preferred technique due to the scaling of our variables (see Dul,

2020), and 10.000 permutations to generate significance levels (Dul, van der Laan, & Kuik, 2018).

4. Results and findings

Table 2. PLS-SEM Results.

	Base Model		Model 1		Model 2		Model 3	
	Social Integr.	Perfor-mance	Social Integr.	Perfor-mance	Social Integr.	Perfor-mance	Social Integr.	Perfor-mance
Path coefficient (p-value)								
Average Age	$0.117^†$ (0.098)	0.131^{**} (0.002)	0.047 (0.444)	0.122^* (0.011)	0.047 (0.412)	0.126^{**} (0.007)	$0.109^†$ (0.067)	0.121^* (0.011)
Cultural Diversity	−0.072 (0.341)	-0.108^* (0.036)	-0.079^* (0.014)	$-0.118^†$ (0.054)	−0.088 (0.111)	$-0.118^†$ (0.060)	−0.073 (0.239)	$-0.120^†$ (0.056)
Social Integration		0.174^{**} (0.005)		0.104 (0.141)		$0.116^†$ (0.090)		0.146^* (0.024)
Team-avg. mot. CQ			0.264^{***} (0.000)	0.193^* (0.010)				
Team-avg. met. CQ			0.062 (0.439)	0.025 (0.764)	0.074 (0.363)	0.051 (0.549)		
Team-avg. cog. CQ			−0.027 (0.717)	−0.030 (0.714)	−0.016 (0.826)	−0.013 (0.874)		
Team-avg. beh. CQ			$0.145^†$ (0.063)	−0.057 (0.483)	0.178^* (0.018)	−0.025 (0.761)		
Team-min. mot. CQ					0.125^* (0.027)	0.075 (0.266)		
Team-max. mot. CQ					0.179^{**} (0.003)	0.077 (0.349)		
Leader mot. CQ							$0.129^†$ (0.096)	0.208^{**} (0.003)
Leader met. CQ							−0.034 (0.672)	−0.090 (0.240)
Leader cog. CQ							0.101 (0.214)	−0.035 (0.674)
Leader beh. CQ							0.103 (0.217)	−0.043 (0.643)
R^2	*0.018*	*0.066*	*0.160*	*0.086*	*0.156*	*0.075*	*0.076*	*0.089*
R^2 adj.	*0.011*	*0.055*	*0.140*	*0.061*	*0.133*	*0.045*	*0.055*	*0.064*
Q^2			*0.080*	*0.043*	*0.078*	*0.008*	*0.029*	*0.052*

Note: Significance testing in the PLS-SEM models is performed with 5,000 bootstrap samples.
$^†p < 0.1$; $^*p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$.

4.1. Results for the team's average motivational CQ levels (Model 1)

The base model (see Table 2) indicates a positive and statistically significant relationship between social integration and performance ($\beta = 0.174$; $p = 0.005$) and has a very low explanatory power for both social integration ($R^2 = 0.018$; $R^2_{adjusted} = 0.011$) and performance ($R^2 = 0.066$; $R^2_{adjusted} = 0.055$). Adding the team's average motivational CQ to the base model (in Model 1) increases the explanatory power for social integration ($R^2 = 0.160$; $R^2_{adjusted} = 0.080$) and performance significantly ($R^2 = 0.086$; $R^2_{adjusted} = 0.061$) – the explanatory power remains moderate to low. Social integration shows a positive, yet not significant direct relationship with performance anymore ($\beta = 0.104$; $p = 0.141$). The team's average motivational CQ indicates a

positive and significant relationship with social integration ($\beta = 0.264$; $p = 0.000$) and performance ($\beta = 0.193$; $p = 0.010$). By conducting an additional mediation analysis (see Table 3), we find a significant total effect of the team's average motivational CQ via social integration on performance (total effect = 0.220; $p = 0.003$). Thus, greater average motivational CQ on the team increases both social integration within the team and its performance, confirming Hypotheses 1a and 1b.

Table 3. Mediation analysis: Social integration as a mediator between CQ and performance.

CQ	Total effect (p1·p2) [CQ-> social integration -> performance]	Direct effect (p3) [CQ-> performance]	Signs (p1· p2) vs. (p3)	Interpretation (building on the decision tree presented in Hair, Hult, Ringle, Sarstedt, et al. (2017), see page 199)
Team-avg. mot. CQ	0.220** (0.003)	0.193* (0.010)	Same	Yes, complementary mediation
Team-min. mot. CQ	0.089 (0.170)	0.075 (0.266)	Same	No mediation, no effect
Team-max. mot. CQ	0.098 (0.232)	0.077 (0.349)	Same	No mediation, no effect
Leader. mot. CQ	0.226** (0.001)	0.208** (0.003)	Same	Yes, complementary mediation

Note: We denote the path from CQ to social integration with p1; we denote the path from social integration to performance with p2; we denote the path from CQ to performance with p3. Significance testing in the PLS-SEM models is performed with 5000 bootstrap samples.
$^{\dagger}p < 0.1$; $^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$.

4.2. Results for the minimum and maximum motivational CQ levels (Model 2)

In Model 2 (see Table 2), we added the minimum and maximum motivational CQ levels to the base or control model.[2] The explanatory power for social integration ($R^2 = 0.156$; $R^2_{adjusted} = 0.133$) and performance ($R^2 = 0.075$; $R^2_{adjusted} = 0.045$) increases in comparison to our base model (for performance, this increase is not apparent in the adjusted R^2 due to several insignificant controls, namely, the additional CQ dimensions, which we kept for transparency reasons nonetheless). However, the explanatory power remains moderate to low. Social integration shows a positive and significant relationship with performance ($\beta = 0.116$; $p = 0.090$). The motivational CQ levels of the members with the minimum and maximum CQ have a positive and significant relationship with social integration (Team-min mot. CQ: $\beta = 0.125$; $p = 0.027$, Team-max mot. CQ: $\beta = 0.179$; $p = 0.003$) but not with performance. Evaluating the total effects that the team's minimum and maximum motivational CQ members exert on performance via social integration, we find no mediation effects either (the mediation analysis results are provided in Table 3). Therefore, greater levels of the motivational CQ of the least and most culturally intelligent individuals lead to more social integration, confirming Hypotheses 2a and 3a. However, they are not significant determinants of the team's performance, rejecting Hypotheses 2b and 3b.

---

[2] We also estimated a model that tested the associations between the variance in cultural intelligence among the team members with regard to social integration and performance. It did not indicate significant associations between the variance in motivational cultural intelligence and social integration, or between the variance in motivational cultural intelligence and performance.

4.3. Results for the leader's motivational CQ (Model 3)

Finally, we added the leader's motivational CQ levels to the model (see Table 2). While doing so increases the explanatory power versus the base model, the explanatory power remains low for social integration ($R^2 = 0.076$; $R^2_{adjusted} = 0.055$) and performance ($R^2 = 0.089$; $R^2_{adjusted} = 0.064$). The path from social integration to performance is positive, and significant ($\beta = 0.146$; $p = 0.024$). Furthermore, the leader's motivational CQ has a positive and significant impact on social integration ($\beta = 0.129$; $p = 0.096$) and performance ($\beta = 0.208$; $p = 0.003$). In addition, the total effect of the team leader's motivational CQ via social integration to performance is significant (total effect = 0.226; $p = 0.001$). Thus, the greater the motivational CQ of the leader, the stronger the social integration on the team, and the better the team's performance, confirming Hypotheses 4a and 4b.

4.4. Results for motivational CQ as a necessary condition

To identify whether our necessary condition hypotheses can be confirmed or not, the results of the NCA need to indicate at least a small yet significant effect size. Furthermore, they need to indicate practical relevance (in terms of realizing the required levels of the necessary condition).

Regarding the first aspect, Dul (2020) offered the following benchmarks to interpret effect sizes: $0 < d < 0.1$ represents a small effect, $0.1 \leq d < 0.3$ a medium effect, $0.3 \leq d < 0.5$ a large effect, and $d \geq 0.5$ a very large effect.

Regarding the second aspect, we analyzed the bottleneck table, which helped us identify the necessary or minimum required levels of motivational CQ for strong social integration and good team performance. To define the relevant levels that demarcate "strong social integration" and "good team performance" we followed an approach often found in the literature of using the 75th percentile, which identifies the top 25% best performing teams (e.g., Fiss, 2011). In our sample, the top 25% best performing teams all score at least 6 on the (7-point) performance scale. Similarly, for social integration, the top 25% best performing teams score at least 86 (on average on the items measured) on the 100-point scale and 4.2 (on the items measured) on the 5-point scale. In other words, these cutoffs fit the logic of the top scores on the original scales. Therefore, we used the 75th percentile as our overall demarcation point to define strong social integration and good team performance. Furthermore, an individual has motivational CQ if he or she scores on average at least 3 on the 5-point scale (i.e. does not disagree to the motivational CQ facets prompted). Hence, we deem our hypotheses confirmed if, in addition to the small and significant effect size, the motivational CQ scores are 3 at the 75th percentile on social integration or performance. In addition to confirming or rejecting our hypotheses, the bottleneck table also enables a more specific identification of the relevant minimum levels that are necessary to achieve high or even excellent levels of social integration and performance.

Table 4 provides the estimated effect sizes and the p-values, indicating their significance (following Dul et al., 2018). For social integration, the team's average motivational CQ qualifies as a medium-sized necessary condition ($d = 0.252$; $p = 0.001$). Likewise, the team's average motivational CQ qualifies as a small necessary condition for the team's performance – at least on an alpha level of 10% ($d = 0.112$; $p = 0.097$). The NCA results of the minimum motivational CQ

levels indicate no significant effect size. Hence, the motivational CQ of the least culturally intelligent member does not qualify as a necessary condition for social integration or performance. This finding contradicts Hypotheses 6a and 6b, which assumed that the minimum motivational CQ member represents a bottleneck to social integration and performance. Finally, the NCA reveals that the leader's motivational CQ qualifies as a medium-sized necessary condition ($d = 0.191$; $p = 0.003$) for social integration. However, it does not qualify as a necessary condition for performance. Hence, Hypothesis 7b is unsupported.

Table 4. NCA Results.

	Social Integration	Performance
	Effect size (p-value)	
Team-avg. mot. CQ	0.252**	0.112[†]
	(0.001)	(0.097)
Team-min. mot. CQ	0.126	0.105
	(0.640)	(0.265)
Leader mot. CQ	0.191**	0.053
	(0.003)	(0.379)

Note: The d value is based on the ceiling envelopment–free disposal hull ceiling technique (ce-fdh). Significance testing in the NCA is performed with 10,000 permutations.
[†]$p < 0.1$; *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

To determine whether Hypotheses 5a, 5b, and 7a find full support, we created a bottleneck table that provides the percentiles for the dependent constructs of social integration and performance. These are contrasted with the actual values for motivational CQ (which, although it entered the analysis as a latent score, had a standardized measurement on a 5-point scale). The results appear in Table 5, which provides the minimum levels of motivational CQ required to achieve an outcome by percentiles. If there is no required minimum level of CQ to achieve a certain social integration or performance percentile, this point is denoted with NN (NN = not necessary). For instance, to achieve an average performance level (50th percentile), the team does not need to have a certain minimum average motivational CQ (NN = not necessary).

Table 5. Bottleneck for social integration, performance, and mot. CQ on different levels.

Social integration (selected percentiles)	Team-average motivational CQ (scores on actual scale)	Leader motivational CQ (scores on actual scale)	Performance (selected percentiles)	Team-average motivational CQ (scores on actual scale)
50	3.30	2.45	50	NN
75	**3.52**	**3.16**	**75**	**3.30**
80	3.59	3.16	80	3.45
90	3.59	4.35	90	3.74

Note: Ce-fdh bottleneck table. While items were measured on Likert scales, the constructs entered the analysis in the form of latent variable scores. To aid in the interpretation of the scores, the bottleneck table is provided in percentiles for the dependent constructs (measured on different scales) and has been retransformed to actual values for motivational CQ (measured on a 5-point scale). For instance, a team with strong social integration that outperforms 75% of other teams can be achieved only with an average motivational CQ on the team of 3.52 on a 5-point scale.

Table 5 indicates that strong social integration that outperforms 75% of the teams (75th percentile) can be achieved only with an average motivational CQ on the team of 3.52 (on a 5-point scale). Moreover, to achieve good performance, the team's average motivational CQ needs to have a score of 3.3. Hence, the team's average motivational CQ is a necessary condition for

both strong social integration and good performance. Thus, Hypotheses 5a and 5b are confirmed. Finally, to achieve strong social integration that outperforms 75% of teams, the team leader needs to demonstrate a motivational CQ at a minimum score of 3.16. Hence, Hypothesis 7a is confirmed, too.

In addition to confirming our hypotheses, the bottleneck table allows us to determine the additional minimum levels of motivational CQ at the team average and leader level that are required to achieve different levels of social integration and performance. For instance, to achieve excellent social integration that outperforms 90% of teams, the team needs to demonstrate a motivational CQ of 3.59 on average. Furthermore, the team leader needs to score the more challenging level of 4.35 to enable this level of social integration in GVTs. Finally, to achieve excellent performance (at the 90th percentile), the team needs to demonstrate an average CQ of 3.74.

5. Discussion

5.1. Summary of findings

The results of our study indicated that the team's average motivational CQ is a necessary condition for high levels of social integration and performance. Moreover, an increase in the team's average motivational CQ will increase a GVT's social integration and performance (lending full support to Hypotheses 1 and 5; see also Table 6, Table 7 for an overview).

Table 6. Overview of findings for social integration.

Mot. CQ	PLS-SEM results	Hypothesis	NCA results	Hypothesis	Interpretation
Team average	Significant determinant	H1a: confirmed	Significant necessary condition	H5a: confirmed	A certain average level of motivational CQ is necessary for strong social integration (see bottleneck table). A further increase in the team's average motivational CQ will increase social integration.
Team maximum	Significant determinant	H2a: confirmed	No necessary condition	–/–	An increase in the motivational CQ of the most culturally competent member will increase the social integration in the team, but it is not a bottleneck for social integration.
Team minimum	Significant determinant	H3a: confirmed	No necessary condition	H6a: not confirmed	An increase in the motivational CQ of the least culturally competent member will increase the social integration in the team, but it is not a bottleneck for social integration.
Team leader	Significant determinant	H4a: confirmed	Significant necessary condition	H7a: confirmed	A certain level of the team leader's motivational CQ is necessary for social integration (see bottleneck table). A further increase in the leader's motivational CQ will increase social integration.

Likewise, we found that an increase in the motivational CQ of the team member with the highest CQ improved the team's social integration. However, it did not significantly improve its performance (lending support to Hypothesis 2a, but not to Hypothesis 2b). Furthermore, an increase in the motivational CQ of the team member with the lowest level of CQ increased the team's social integration. Yet, this increase had no significant impact on the team's performance,

nor did it represent a bottleneck for stronger social integration or better performance (hence, Hypothesis 3a was confirmed, but the results do not support Hypotheses 3b and 6). This outcome adds to our findings on the role of the team's average motivational CQ in the sense that a highly culturally intelligent member can outweigh the effects of a very non-culturally intelligent team member. While the minimum motivational CQ on a team is not a necessary condition for either strong social integration or good performance, the team's average is a bottleneck for both.

Table 7. Overview of findings for performance.

Mot. CQ	PLS-SEM results	Hypothesis	NCA results	Hypothesis	Interpretation
Team average	Significant determinant	H1b: confirmed	Significant necessary condition	H5b: confirmed	A certain average level of motivational CQ is necessary for a team's good performance (see bottleneck table). An increase in the team's average motivational CQ is a driver of its performance.
Team maximum	No determinant	H2b: not confirmed	No necessary condition	–/–	No significant associations between performance and the team member with the maximum CQ.
Team minimum	No determinant	H3b: not confirmed	No necessary condition	H6b: not confirmed	No significant associations between performance and the team member with the minimum CQ.
Team leader	Significant determinant	H4b: confirmed	No necessary condition	H7b: not confirmed	An increase in the leader's motivational CQ is a driver of the team's performance but not a bottleneck to its performance.

Finally, an increase in the leader's motivational CQ will increase both the team's social integration and performance. Furthermore, the motivational CQ of the team leader is a necessary condition for social integration to exist on the team, but is not a bottleneck impeding the team's performance (supporting Hypotheses 4 and 7a, but not Hypothesis 7b).

5.2. Contribution to theory

The mechanisms that underlie good performance in culturally diverse virtual teams are still not fully understood. There are reciprocal effects stemming from the characteristics of the workgroups and their collaboration. According to faultline and social categorization theories, GVTs show lower social integration, reduced collaboration and information exchange relevant to team performance. According to information processing theory, GVTs perform better as a more divese knowledge base is engaged. Hence, to understand the performance outcomes of GVTs, integrating intermediary team outcomes such as social integration is fruitful because it unpacks the mechanisms through which different determinants affect the team's performance. Moreover, integrating relevant determinants that may buffer the negative effects and enhance the positive effects stemming from different theoretical streams (i.e., social categorization and faultline theory versus information processing theory) is also useful. We contributed to explaining the mechanisms affecting better performance by exploring the roles that social integration and motivational CQ play in this process in teams that collaborate intensively using virtual collaboration tools.

Social integration (in contrast to performance measures) relates more closely to what is outlined in the theoretical arguments about social categorization and faultlines. Our study demonstrated that social integration is affected by the cultural diversity in GVT and indeed plays an important role for team performance outcomes (contributing to research on the role of social integration on performance, see Beal, Cohen, Burke, & McLendon, 2003). Social integration is reduced by the diversity in GVTs, but positively influences their performance. Our results indicated that – on average – social integration mediates the relationship between motivational CQ and performance by complementing the direct influence that the former has on the latter.

Second, our study demonstrated the relevant role of motivational CQ as an antecedent to social integration and, ultimately, performance in GVTs. It does so by buffering the negative impact of social categorization and faultlines, helping us understand the salience of social categorization. If diversity in GVT does not lead to faultlines and categorization of team members to inner and outer groups, diversity can benefit the performance by enabling the team to better process task-related information. Hence, motivational CQ helps the team realize the positive aspects of cultural diversity. Information processing theory highlights the importance of the diversity of viewpoints and ideas. However, they can be realized only if the team members interact and exchange information frequently and openly. Motivational CQ aids information exchanges in multicultural teams by improving social integration and thereby improves team performance. Thus, we contribute to resolving the controversy around the link between cultural diversity and performance by integrating the relevant mechanism buffering the negative effects from social categorization and faultline theories and unlocking positive effects from information processing theory. We demonstrated that motivational CQ is such a variable that can advance theorizing on GVT performance not only by considering social categorization and faultlines, but also by building on information processing theory (Simon, 1978, van Knippenberg et al., 2010).

By concentrating on motivational CQ, our study also demonstrated the applicability of Bandura's (1986) self-efficacy and Black et al. (1991) framework. Motivational CQ involves strong relational skills which are supposed to improve several adjustment outcomes to the cross-cultural situation and to improve social integration outcomes. In addition, motivational CQ involves self-efficacy beliefs of individuals in a cross-cultural context. We argue that self-efficacy beliefs that are integrated into the conceptual thinking and measurement of motivational CQ are of specific relevance to amplifying the positive effects of diversity on the team, as they enable goal-setting and persistence during challenging situations. Our findings demonstrate this relevant role of motivational CQ (in contrast to other dimensions of CQ) in influencing both social integration and performance lending support to the self-efficacy arguments. Disecting CQ into its components offers a more nuanced explanation of team dynamics and is recommended for future studies using CQ as a predictor.

Third, we demonstrated the importance of recognizing that some factors might be sufficient but not necessary for strong social integration and good team performance, and some might be both. We found several situations in which motivational CQ is a relevant determinant and a necessary condition for the outcome. This outcome implies that motivational CQ is generally necessary for effective social integration, and we can determine this level using the bottleneck table. Moreover, it suggests that an increase in the level of motivational CQ will trigger a further increase in social integration. Furthermore, we found several situations in which motivational CQ is a relevant

determinant of, for instance, performance, but not a necessary condition. This is the case for the team leader's motivational CQ. Hence, an increase in the motivational CQ of the team leader will lead to an increase in performance. However, there is no minimum level of the team leader's CQ necessary to ensure that the outcome will occur. Thus, our study helps create a stronger fit between the theoretical arguments in the field (e.g., CQ as a capability that is *"needed to perform effectively" and "that will allow individuals to achieve better performance"*) and the empirical evidence. Moreover, the necessity perspective might further contribute to explaining previous inconsistent findings. If the necessary conditions are unsatisfied, desirable outcomes (here, performance and social integration) cannot be achieved. For instance, teams that do not have motivational CQ are unlikely to demonstrate a good level of performance making this a relevant perspective to explain GVT performance using social categorization and information processing arguments.

Fourth, CQ is often treated in the research as a single overall construct, typically operationalized as a personal score at the individual level of analysis and as the average of the team members' scores at the group level. However, there are different configurations of CQ distributions in the team, which is a challenge and an opportunity for future research. The team's overall average motivational CQ is a good, but not the only or even best predictor of a team's dynamics and performance. As our study showed, the maximum and minimum values of motivational CQ play distinct, separate roles and matter to the GVT's social integration. In particular, the motivational CQ level of the team leader plays a role in the team's performance that is distinct from the effect of the team's average CQ level. Our study demonstrated that the former is a necessary condition for strong social integration and a relevant driver for both social integration and performance. While researchers have acknowledged the role of CQ as critical for leaders transitioning from domestic to global environments (Alon & Higgins, 2005), our study showed that it is also critical in virtual environments. Translating arguments to the level of individual team members can help advance theoretical arguments that relate to the emergence of faultlines in teams and the success in integrating information and diverse perspectives in teams.

5.3. Contribution to practice

As more companies migrate to online collaborative work teams, managing these teams and their outputs is an increasingly important task. The current knowledge on GVT management is still limited (albeit the research on technologies to virtually collaborate in various fields, see Small, Dowell, & Crawford, 2016). GVTs are different from regular teams in that they are separated by distance, time, geography, and culture. These differences have the potential to break teams apart, reduce their social integration, lead to misunderstandings and misinterpretations that affect their performance – as our findings demonstrated. Our study contributed to the managerial understanding of how a team's makeup can affect its social integration and unlock the team's potential for diversity of thought and creativity in solutions.

First, our findings suggested that social integration plays an important role and directly impacts team performance or mediates it. Hence, activities and programs that promote social integration (e.g., informal meetings and events that provide opportunities for getting to know co-workers and building stronger social ties) might be useful. These are, of course, difficult to implement in the GVT environment, as sometimes physical meetings are not possible or too expensive. Online

collaborative tools, social media connections, mentoring programs, games, and apps could promote social integration in GVTs.

Second, our tests showed that motivational CQ aids social integration and performance. When creating GVTs, management should think about the CQ diversity of their members and the assignment of leadership roles to members with a certain level of motivational CQ. To do so, they must first measure the CQ of potential team members or candidates. Despite the potential challenges that surround the measurement of CQ using self-reported scores (Taras, 2020), we believe that using a toolset, such as the CQ scale (Ang et al., 2007) or the extended CQ scale (Van Dyne et al., 2012) that have been recently tested (Richter, Schlaegel et al., 2020), or the BCIQ scale (Alon, Boulanger, Meyers, & Taras, 2016), which have motivational scales, seems warranted especially for current employees. In recruitment situations, more sophisticated assessment center-like procedures (e.g., Ruben, 1976) seem advisable.

Third, our findings help in the configuring of teams. If the organization is concerned solely with performance, the team's motivational CQ does, on average, represent a bottleneck to achieving outstanding performance and is a facilitator or driver of performance. More specifically, the team's average motivational CQ, as well as the team leader's motivational CQ, represent key drivers of the team's performance. Hence, the high level of CQ in one team member can compensate for the lack of such intelligence in another member to ensure a high-enough average level. Most importantly, equipping the team with a leader who has a high level of motivational CQ is essential to improve the team's performance. Likewise, if there is concern about social integration and its associated issues such as conflicts, the management needs to ensure that the team's composition satisfies certain minimum levels of motivational CQ. On average, the team should have a motivational CQ of 3.52 on a 5-point-scale, and the leader should have a motivational CQ of at least 3.16 to achieve strong social integration. If the aim is to achieve excellent social integration, these minimum levels should be even higher (i.e., a team average of 3.59 and a leader's score of 4.35 to bring the team into the top 10% of GVTs in terms of social integration). Hence, there may be no need to try to assemble a group of CQ superstars. However, there is a need to ensure that the team does not consist solely of those with little CQ. If the members fall below these standards, investing in training programs aimed at improving CQ is advised. Of particular importance is cross-cultural training for the team leader, whose lack of motivational CQ could create an insurmountable bottleneck.

In summary, when constructing GVTs, management should ensure that culturally intelligent leaders are in charge of the team, the team consists of some culturally intelligent members, and additional training is provided to the team members who score low on CQ.

5.4. Discussion of limitations and future research

Our study opens up opportunities for future research, some of which are rooted in the limitations of our approach. Although we controlled for several variables related to the demographics of the group, we did not control for the media used to communicate in the GVTs. Studies have indicated that the richness of the media for communication affects the performance of virtual teams (Hambley et al., 2007). For example, a video conference is a richer medium than text-only communication. We would expect that the possible absence of nonverbal and behavioral cues in

the virtual team affect its social integration and performance or even the association between CQ and these outcomes, especially compared to traditional co-located teams. Analyzing the impact of media and collaboration and communication tools such as Slack might be a promising future route (see also the call in Jimenez et al., 2017).

While we explored how social integration mediates the relationship between CQ and team performance, it is likely one of many mediating factors at play here. Additional team processes and constructs that link CQ to team performance, such as communication effectiveness, conflict, coordination, or knowledge sharing - which seems to be a current hot topic in the field (Yari et al., 2020) - may be promising routes for future research. We encourage such investigations whose results might support our findings.

We controlled for the effects of all of the CQ dimensions, but focused specifically on the impact of the motivational aspect because it is the most prominent facet in predicting integration in teams (Flaherty, 2008, Shokef and Erez, 2008). While we regarded this approach as advantageous with regard to the precision in the theoretical arguments and their fit with the operationalization of constructs, we neglected potential interactions and joint effects between individual CQ dimensions. Given that they might prove relevant to the processes in GVTs, future research could theorize about and analyze the effects of all four CQ dimensions, as well as the joint effects of combinations of facets of CQ (e.g., see Rockstuhl and Van Dyne, 2018, Schlaegel et al., 2020).

Our goal was to show that different configurations of CQ may matter beyond the team's average CQ level. We hope that our approach will inspire future research of this kind into the effects of the other CQ factors. Likewise, future research may explore the configuration effects of EQ, IQ, technical and communication skills, and team members' prior experience. Future researchers may consider studying other configurations beyond the minimum and maximum CQ levels, and the team leader's CQ that play a role (as other studies on team configurations demonstrated, see Ng & Van Dyne, 2005). Perhaps it is the CQ of sub-teams or coalitions within teams, that of the informal team leader, or the CQ of the team's maven that plays a critical role in predicting a team's dynamics and performance. Because we did not have data on the relative contribution of each leader, we used the unweighted average motivational CQ values when two leaders were present. Knowledge about the exact contributions and degrees of involvement would allow for a more fine-grained analysis on the effects of leader CQ in teams with shared leadership and might deliver additional valuable insights in future studies.

Furthermore, the necessary condition analysis is a relatively new toolset for testing whether CQ is necessary for different forms of a team's success. This more nuanced view of CQ's effects may promote a deeper understanding of the phenomenon, and we encourage future researchers to explore these mechanisms further (see also Aguinis, Ramani, & Cascio, 2020).

Lastly, our data came from a student sample. While the X-Culture project closely resembles a real-life organizational environment, the incentives are not fully comparable to the salaries of professionals whose livelihoods depend upon performing their jobs successfully. The younger age of our study's participants can also limit the generalizability of our findings to other

demographics. Therefore, the implementation of our research approach in a non-academic setting could deliver additional valuable insights.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Appendix 1. Overview of CQ studies studying group-level outcomes

Author (Year)	Dependent variable	CQ measure	Key findings
Team Performance			
Moynihan, Peterson, and Earley (2006)	Performance	Average team CQ	Average team CQ predicted performance in multinational teams.
Groves and Feyerherm (2011)	Leader and team performance	Leader's CQ	Leader's CQ was positively related to both leader's and team's performance in very diverse intercultural teams.
Khani, Etebarian, and Abzari (2011)	Team's effectiveness	CQ at the individual level	All four facets of CQ were related to the team's effectiveness.
Moon (2013)	Team's performance	Average team CQ	Higher levels of overall team CQ attenuated the negative impact of cult. diversity on the team's performance.
Magnusson et al. (2014)	Team's performance	Average team motivational CQ	Motivational CQ was a moderator; the (positive) effect of psychic distance on performance was stronger in the high motivational CQ condition (due to moderating intermediary mechanisms: expectations of challenges and team effort).
Groves, Feyerherm, and Gu (2015)	Negotiation performance	Negotiator's CQ	The negotiator's cognitive and behavioral CQ predicted negotiation performance.
Presbitero (2020)	Task performance	Leader's CQ and team members' CQ	Team members' CQ and leader's CQ were positively associated with the team member's task performance. Moreover, the two had a positive interactive effect on task performance. Finally, they positively moderated the negative effect of perceived cultural dissimilarity on task performance.
Rosenauer et al. (2016)	Performance	Leader's CQ	In interdependent teams, diversity in nationality was positively related to performance when the CQ of leaders was high (but it was unrelated to team performance when the CQ of leaders was low).
Social integration and related constructs			
Moynihan et al. (2006)	Intragroup trust, cohesion	Average team CQ	Average team CQ predicted intragroup trust and cohesion in multinational teams.
Joardar, Kostova, and Ravlin (2007)	Foreign newcomer group acceptance	Newcomer's CQ	A workgroup's attitude towards a foreign newcomer was influenced by the newcomer's cultural intelligence.
Flaherty (2008)	Acceptance and integration time for new members	Average team and individual CQ	Aggregated team and individual motivational CQ were positively related to acceptance and integration time for new members. Individual cognitive CQ was positively related to acceptance and integration times.
Rockstuhl and Ng (2008)	Trust	Individual member CQ in dyads	In culturally diverse dyads, focal members with higher metacognitive, cognitive, and behavioral CQ reported greater trust in their partners.
Imai and Gelfand (2010)	Integrative behaviors in negotiations	Individual member and CQ in dyads	CQ predicted integrative information behaviors; facet level analyses revealed that motivational CQ strongly drove this

Author (Year)	Dependent variable	CQ measure	Key findings
			effect. The negotiator with the lower (not the higher) CQ level had more of an impact.
Chua et al. (2012)	Creative collaboration, knowledge sharing, and trust	Individual-level metacognitive CQ	Metacognitive CQ improved creative collaboration, increased affect-based trust and knowledge sharing. The maximum cultural metacognition in a dyad had a significant positive relationship with creative collaboration.
Adair et al. (2013)	Shared values	Average team level CQ	Metacognitive and behavioral CQ were positively related to shared values in culturally diverse teams (there was no influence of motivational CQ and cognitive CQ on shared values in diverse teams).
Chen and Lin (2013)	Knowledge sharing	Team level CQ ('we'-measurement)	All four CQ facets, except behavioral CQ, were positively related to knowledge sharing.
Mor, Morris, and Joh (2013)	Intercultural cooperation	Individual-level CQ	Cultural metacognition had a positive and significant influence on intercultural cooperation.
Li et al. (2017)	Quality of deliverables, frequency of collaborative behaviors	Individual CQ dyads	The lower scoring individual's CQ was positively associated with the frequency of collaborative behaviors (motivational, behavioral CQ); the higher scoring individual's CQ was positively associated with the quality of deliverables (cognitive, motivational CQ).

Note: We developed this overview by, first, screening review studies in the field of CQ (Fang et al., 2018, Ott and Michailova, 2018, Rockstuhl and Van Dyne, 2018, Schlaegel et al., 2017, Yari et al., 2020) for studies on CQ and social integration or similar constructs and performance in teams. In addition, we searched the Business Source Complete database for the keywords *cultural intelligence* or *CQ* in combination with *social integration*, *cohesion*, *team performance*, and *team effectiveness* to identify more recent research not covered by the meta-analytic reviews.

Appendix 2. Correlation table

	Min	Max	Mean	Stdev	1	2	3	4	5	6	7	8
1 Average Age	18.00	55.00	23.23	3.86	1							
2 Cultural Diversity	0.37	0.18	0.88	0.23	0.032	1						
3 Team-avg. Cognitive CQ	1.61	4.79	3.35	0.56	−0.045	0.112†	1					
4 Team-avg. Metacognitive CQ	2.59	5.00	4.33	0.43	0.020	−0.027	0.463**	1				
5 Team-avg. Behavioral CQ	2.27	5.00	3.91	0.51	0.049	0.087	0.530**	0.513**	1			
6 Team-avg. Motivational CQ	2.80	5.00	4.22	0.44	0.111†	0.065	0.483**	0.531**	0.558**	1		
7 Social Integration (100pt Scales)	35.75	100.0	80.55	13.08	0.084	−0.052	0.195**	0.267**	0.305**	0.365**	1	
7 Social Integration (5pt scales)	2.43	4.83	3.83	0.50								
8 Performance	1.75	6.95	5.39	0.87	0.148	−0.115†	0.047	0.118†	0.076	0.204**	0.174**	1

$†p < 0.1$; $*p < 0.05$; $**p < 0.01$. Further correlations can be requested from the corresponding author of the manuscript. Please note that the min, max, mean and standard deviations are provided on the original scale levels. As social integration involves items on two different scales (100-point scales and 5-point scales), the values are provided for items on these two scales separately. Correlations refer to the latent constructs in the analyses.

References

Adair, W. L., Hideg, I., & Spence, J. R. (2013). The culturally intelligent team: The impact of team cultural intelligence and cultural heterogeneity on team shared values. *Journal of Cross-Cultural Psychology, 44*, 941–962.

Aguinis, H., Ramani, R. S., & Cascio, W. F. (2020). Methodological practices in international business research: An after-action review of challenges and solutions. *Journal of International Business Studies, 51*, 1593–1608.

Ali, I., Ali, M., Leal-Rodríguez, A. L., & Albort-Morant, G. (2019). The role of knowledge spillovers and cultural intelligence in enhancing expatriate employees' individual and team creativity. *Journal of Business Research, 101*, 561–573.

Alon, I., Boulanger, M., Meyers, J., & Taras, V. (2016). The development and validation of the business cultural intelligence quotient. *Cross Cultural and Strategic Management (former: Cross Cultural Management: An International Journal), 23*, 78–100.

Alon, I., & Higgins, J. M. (2005). Global leadership success through emotional and cultural intelligences. *Business Horizons, 48*, 501–512.

Ang, S., & Van Dyne, L. (2008). Conceptualization of cultural intelligence: Definition, distinctiveness, and nomological network. In S. Ang, & L. Van Dyne (Eds.), *Handbook of cultural intelligence: Theory, measurement, and applications* (pp. 3–15). New York: M. S. Sharpe.

Ang, S., Van Dyne, L., Koh, C., Ng, K. Y., Templer, K. J., Tay, C., & Chandrasekar, N. A. (2007). Cultural intelligence: Its measurement and effects on cultural judgment and decision making, cultural adaptation and task performance. *Management and Organization Review, 3*, 335–371.

Ang, S., Van Dyne, L., & Tan, M. (2011). Cultural intelligence. In R. Sternberg, & R. Kaufman (Eds.), *Cambridge handbook on intelligence* (pp. 582–602). New York: Cambridge Press.

Askegaard, S., Kjeldgaard, D., & Arnould, E. (2009). Reflexive culture's consequences. In C. Nakata (Ed.), *Beyond Hofstede: Culture frameworks for global marketing and management* (pp. 101–124). Palgrave Macmillan.

Bandura, A. (1986). The explanatory and predictive scope of self-efficacy theory. *Journal of Social and Clinical Psychology, 4*, 359–373.

Bandura, A. (2002). Social cognitive theory in cultural context. *Applied Psychology: An International Review, 51*, 269–290.

Beal, D. J., Cohen, R. R., Burke, M. J., & McLendon, C. L. (2003). Cohesion and performance in groups: A meta-analytic clarification of construct relations. *Journal of Applied Psychology, 88*, 989–1004.

Berkowitz, L. E., & Walster, E. E. (1976). Advances in experimental social psychology, Vol. 9, Equity theory: Toward a general theory of social interaction: Academic Press.

Berscheid, E., & Hatfield, E. (1969). *Interpersonal attraction*. MA: Addison-Wesley Reading.

Bhaskar-Shrinivas, P., Harrison, D. A., Shaffer, M. A., & Luk, D. M. (2005). Input-based and time-based models of international adjustment: Meta-analytic evidence and theoretical extensions. *Academy of Management Journal, 48*, 257–281.

Black, J. S., & Gregersen, H. B. (1991). Antecedents to cross-cultural adjustment for expatriates in Pacific Rim assignments. *Human Relations, 44*, 497–515.

Black, J. S., Mendenhall, M., & Oddou, G. (1991). Toward a comprehensive model of international adjustment: An integration of multiple theoretical perspectives. *Academy of Management Review, 16*, 291–317.

Boekholt, J.-O., Richter, N. F., & Ringle, C. M. (2019). Zur Erfolgsrelevanz von Teamgr¨oße und Diversit¨at: Eine Analyse am Beispiel von Führungsteams in der Luftfahrtindustrie. In M. Schr¨oder, & K. Wegner (Eds.), *Logistik im Wandel der Zeit: Von der Produktionssteuerung zu vernetzten Supply Chains* (pp. 733–746). Wiesbaden: Springer Gabler.

Bogilovic, S., & Skerlavaj, M. (2016). Metacognitive and motivational cultural intelligence: Superpowers for creativity in a culturally diverse environment. *Economic and Business Review, 18*, 55–76.

Bouncken, R., Brem, A., & Kraus, S. (2016). Multi-cultural teams as sources for creativity and innovation: The role of cultural diversity on team performance. *International Journal of Innovation Management, 20*, 1–34.

Bryant, S. M., Albring, S. M., & Murthy, U. (2009). The effects of reward structure, media richness and gender on virtual teams. *International Journal of Accounting Information Systems, 10*, 190–213.

Byrne, D. (1997). An overview (and underview) of research and theory within the attraction paradigm. *Journal of Social and Personal Relationships, 14*, 417–431.

Caputo, A., Ayoko, O. B., & Amoo, N. (2018). The moderating role of cultural intelligence in the relationship between cultural orientations and conflict management styles. *Journal of Business Research, 89*, 10–20.

Caputo, A., Ayoko, O. B., Amoo, N., & Menke, C. (2019). The relationship between cultural values, cultural intelligence and negotiation styles. *Journal of Business Research, 99*, 23–36.

Carte, T., & Chidambaram, L. (2004). A capabilities-based theory of technology deployment in diverse teams: Leapfrogging the pitfalls of diversity and leveraging its potential with collaborative technology. *Journal of the Association for Information Systems, 5*, 448–471.

Cartwright, D., & Zander, A. F. (1968). *Group dynamics: Research and theory* (3rd ed.). Harper and Row.

Chen, G., & Kanfer, R. (2006). Toward a systems theory of motivated behavior in work teams. *Research in Organizational Behavior, 27*, 223–267.

Chen, G., Kirkman, B. L., Kim, K., Farh, C. I. C., & Tangirala, S. (2010). When does cross-cultural motivation enhance expatriate effectiveness? A multilevel investigation of the moderating roles of subsidiary support and cultural distance. *Academy of Management Executive, 53*, 1110–1130.

Chen, M. L., & Lin, C. P. (2013). Assessing the effects of cultural intelligence on team knowledge sharing from a socio-cognitive perspective. *Human Resource Management, 52*, 675–695.

Chin, W. W. (1998). The partial least squares approach to structural equation modeling. In G. A. Marcoulides (Ed.), *Modern methods for business research* (pp. 295–336). Mahwah, NJ: Lawrence Erlbaum Associates Publishers.

Chua, R. Y. J., Morris, M. W., & Mor, S. (2012). Collaborating across cultures: Cultural metacognition and affect-based trust in creative collaboration. *Organizational Behavior and Human Decision Processes, 118*, 116–131.

Cordery, J., Soo, C., Kirkman, B., Rosen, B., & Mathieu, J. (2009). Leading parallel global virtual teams: Lessons from Alcoa. *Organizational Dynamics, 38*, 204–216.

Dawson, J. F. (2003). Do we have enough? The accuracy of incomplete data from small groups. *Paper presented at the Academy of Management Proceedings*.

Derven, M. (2016). Four drivers to enhance global virtual teams. *Industrial and Commercial Training, 48*, 1–8.

Dubé, L., & Paré, G. (2001). Global virtual teams. *Communications of the ACM, 44*, 71–73.

Dul, J. (2016). Necessary condition analysis (NCA): Logic and methodology of "necessary but not sufficient" causality. *Organizational Research Methods, 19*, 10–52.

Dul, J. (2018). Necessary condition analysis (NCA) with R (Version R Package Version 3.0). Retrieved from http://cran.r-project.org/web/packages/NCA/.

Dul, J. (2020). *Conducting necessary condition analysis*. London: Sage.

Dul, J., van der Laan, E., & Kuik, R. (2018). A statistical significance test for necessary condition analysis. *Organizational Research Methods, 23*, 385–395.

Earley, P. C., Ang, S., & Tan, J.-S. (2006). *CQ: Developing cultural intelligence at work*. Stanford University Press.

Ellemers, N., De Gilder, D., & Haslam, S. A. (2004). Motivating individuals and groups at work: A social identity perspective on leadership and group performance. *Academy of Management Review, 29*, 459–478.

Erez, M., Lisak, A., Harush, R., Glikson, E., Nouri, R., & Shokef, E. (2013). Going global: Developing management students' cultural intelligence and global identity in culturally diverse virtual teams. *Academy of Management Learning & Education, 12*, 330–355.

Fang, F., Schei, V., & Selart, M. (2018). Hype or hope? A new look at the research on cultural intelligence. *International Journal of Intercultural Relations, 66*, 148–171.

Ferrazzi, K. (2014). Getting virtual teams right. *Harvard Business Review, 12*, 120–123.

Fiss, P. C. (2011). Building better causal theories: A fuzzy set approach to typologies in organization research. *Academy of Management Journal, 54*, 393–420.

Flaherty, J. E. (2008). The effects of cultural intelligence on team member acceptance and integration in multinational teams. In S. Ang, & L. Van Dyne (Eds.), *Handbook of cultural intelligence: Theory, measurement, and applications* (pp. 192–205). Armonk: M. E. Sharpe.

Galbraith, J. R. (1973). *Designing complex organizations*. Reading: Addison-Wesley.

Goertz, G. (2017). *Multimethod research, causal mechanisms, and case studies: An integrated approach*. Princeton, New Jersey: Princeton University Press.

Groves, K. S., Feyerherm, A., & Gu, M. (2015). Examining cultural intelligence and cross-cultural negotiation effectiveness. *Journal of Management Education, 39*, 209–243.

Groves, K. S., & Feyerherm, A. E. (2011). Leader cultural intelligence in context: Testing the moderating effects of team cultural diversity on leader and team performance. *Group & Organization Management, 36*, 535–566.

Gunkel, M., Schlaegel, C., & Taras, V. (2016). Cultural values, emotional intelligence, and conflict handling styles: A global study. *Journal of World Business, 51*, 568–585.

Hair, J. F., Hult, G. T. M., Ringle, C. M., Sarstedt, M., Richter, N. F., & Hauff, S. (2017). *Partial Least Squares Strukturgleichungsmodellierung (PLS-SEM): Eine anwendungsorientierte Einführung*. München: Vahlen.

Hair, J. F., Hult, T. M., Ringle, C. M., & Sarstedt, M. (2017). *A primer on partial least squares structural equations modeling (PLS-SEM)* (2nd ed.). Thousand Oaks: Sage.

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review, 31*, 2–24.

Hair, J. F., Sarstedt, M., Pieper, T. M., & Ringle, C. M. (2012). The use of partial least squares structural equation modeling in strategic management research: A review of past practices and recommendations for future applications. *Long Range Planning, 45*, 320–340.

Hambley, L. A., O'Neill, T. A., & Kline, T. J. B. (2007). Virtual team leadership: The effects of leadership style and communication medium on team interaction styles and outcomes. *Organizational Behavior and Human Decision Processes, 103*, 1–20.

Harrison, D. A., Price, K. H., & Bell, M. P. (1998). Beyond relational demography: Time and the effects of surface- and deep-level diversity on work group cohesion. *Academy of Management, 41*, 96–107.

Harrison, D. A., Price, K. H., Gavin, J. H., & Florey, A. T. (2002). Time, Teams, and Task Performance: Changing Effects of Surface- and Deep-Level Diversity on Group Functioning. *The Academy of Management Journal, 45*, 1029–1045. https://doi.org/10.2307/3069328.

Harrison, D. A., Shaffer, M. A., & Bhaskar-Shrinivas, P. (2004). Going places: Roads more and less traveled in research on expatriate experiences. In Research in Personnel and Human Resources Management (Vol. 23, pp. 199-247): Emerald Group Publishing Limited.

Hauff, S., Guerci, M., Dul, J., & van Rhee, H. (2019). Exploring necessary conditions in HRM research: Fundamental issues and methodological implications. *Human Resource Management Journal*, 1–19. https://doi.org/10.1111/1748-8583.12231.

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science, 43*, 115–135.

Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. In R. R. Sinkovics, & P. N. Ghauri (Eds.), *Advances in International Marketing* (Vol. 20, pp. 277–320). Emerald: Bingley.

Hinds, P. J., & Weisband, S. P. (2003). Knowledge sharing and shared understanding in virtual teams. In C. B. Gibson, & S. G. Gohen (Eds.), *Virtual Teams that Work: Creating Conditions for Virtual Team Effectiveness* (pp. 21–36). San Francisco: Jossey-Bass.

Imai, L., & Gelfand, M. J. (2010). The culturally intelligent negotiator: The impact of cultural intelligence (CQ) on negotiation sequences and outcomes. *Organizational Behavior and Human Decision Processes, 112*, 83–98.

Jackson, S. E. (1992). Team composition in organizational settings: Issues in managing an increasingly diverse workforce. In S. Worchel, W. Wood, & J. A. Simpson (Eds.), *Group process and productivity* (pp. 138–173). Newbury Park, MA: Sage.

Jaiswal, A., & Dyaram, L. (2019). Towards well-being: Role of diversity and nature of work. *Employee Relations, 41*, 158–175.

Janis, I. L. (1982). *Groupthink*. Boston: Houghton Mifflin.

Jarvenpaa, S. L., & Leidner, D. E. (1999). Communication and trust in global virtual teams. *Organization Science, 10*, 791–815.

Jimenez, A., Boehe, D. M., Taras, V., & Caprar, D. V. (2017). Working across boundaries: Current and future perspectives on global virtual teams. *Journal of International Management, 23*, 341–349.

Joardar, A., Kostova, T., & Ravlin, E. C. (2007). An experimental study of the acceptance of a foreign newcomer into a workgroup. *Journal of International Management, 13*, 513–537.

Khani, A., Etebarian, A., & Abzari, M. (2011). The relationship between cultural intelligence and group effectiveness in Mobarakeh steel company. *African Journal of Business Management, 5*, 7507–7510.

Kilduff, M., Angelmar, R., & Mehra, A. (2000). Top management-team diversity and firm performance: Examining the role of cognitions. *Organization Science, 11*, 21–34.

Klein, K. J., & Kozlowski, S. W. (2000). *Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions*. Jossey-Bass.

Klitmøller, A., & Lauring, J. (2013). When global virtual teams share knowledge: Media richness, cultural difference and language commonality. *Journal of World Business, 48*, 398–406.

Kogut, B., & Singh, H. (1988). The effect of national culture on the choice of entry mode. *Journal of International Business Studies, 19*, 411–432.

Kurtzberg, T. R. (2014). *Virtual teams: Mastering communication and collaboration in the digital age*. Westport, CT: Praeger.

Lau, D. C., & Murnighan, J. K. (1998). Demographic diversity and faultlines: The compositional dynamics of organizational groups. *Academy of Management, 23*, 325–340.

Laughlin, P. R. (2011). *Group problem solving*. Princeton, New Jersey: Princeton University Press.

Layton, B. D., & Insko, C. A. (1974). Anticipated interaction and the similarity-attraction effect. *Sociometry, 37*, 149–162.

Leslie, L. M. (2017). A status-based multilevel model of ethnic diversity and work unit performance. *Journal of Management, 43*, 426–454.

Li, Y., Rau, P.-L. P., Li, H., & Maedche, A. (2017). Effects of a dyad's cultural intelligence on global virtual collaboration. *IEEE Transactions on Professional Communication, 60*, 56–75.

Locke, E. A., Motowidlo, S. J., & Bobko, P. (1986). Using self-efficacy theory to resolve the conflict between goal-setting theory and expectancy theory in organizational behavior and industrial/organizational psychology. *Journal of Social and Clinical Psychology, 4*, 328–338.

Magnusson, P., Schuster, A., & Taras, V. (2014). A process-based explanation of the psychic distance paradox: Evidence from global virtual teams. *Management International Review, 54*, 283–306.

Mannix, E., & Neale, M. A. (2005). What differences make a difference? The promise and reality of diverse teams in organizations. *Psychological Science in the Public Interest, 6*, 31–55.

Martins, L. L., & Schilpzand, M. C. (2011). Global virtual teams: Key developments, research gaps, and future directions. In A. Joshi, H. Liao, & J. J. Martocchio (Eds.), *Research in personnel and human resources management* (Vol. 30, pp. 1–72). Bingley: Emerald Group Publishing Limited.

May, A., & Carter, C. (2001). A case study of virtual team working in the European automotive industry. *International Journal of Industrial Ergonomics, 27*, 171–186.

Mayo, M., Kakarika, M., Mainemelis, C., & Deuschel, N. T. (2017). A metatheoretical framework of diversity in teams. *Human Relations, 70*, 911–939.

McGrath, J. E. (1984). *Groups: Interaction and performance* (Vol. 14). Englewood Cliffs, NJ: Prentice-Hall.

Moon, T. (2013). The effects of cultural intelligence on performance in multicultural teams. *Journal of Applied Social Psychology, 43*, 2414–2425.

Mor, S., Morris, M., & Joh, J. (2013). Identifying and training adaptive cross-cultural management skills: The crucial role of cultural metacognition. *Academy of Management Learning & Education, 12*, 453–475.

Morgeson, F. P., & Hofmann, D. A. (1999). The structure and function of collective constructs: Implications for multilevel research and theory development. *Academy of Management Review, 24*, 249–265.

Moynihan, D. P., & Pandey, S. K. (2007). Finding workable levers over work motivation: Comparing job satisfaction, job involvement, and organizational commitment. *Administration & Society, 39*, 803–832.

Moynihan, L. M., Peterson, R. S., & Earley, P. C. (2006). Cultural intelligence and the multinational team experience: Does the experience of working in a multinational team improve cultural intelligence?. In Y.-. R. Chen (Ed.), *National Culture and Groups (Research on Managing Groups and Teams)* (Vol. 9, pp. 299–323) Bingley: Emerald Group Publishing Limited.

Mullen, B., Johnson, D. A., & Drake, S. D. (1987). Organizational productivity as a function of group composition: A self-attention perspective. *The Journal of Social Psychology, 127*, 143–150.

Nakata, C., & Im, S. (2010). Spurring cross-functional integration for higher new product performance: A group effectiveness perspective. *Journal of Product Innovation Management, 27*, 554–571.

Nemiro, J. E. (2002). The creative process in virtual teams. *Creativity Research Journal, 14*, 69–83.

Ng, K. Y., & Van Dyne, L. (2005). Antecedents and performance consequences of helping behavior in work groups: A multilevel analysis. *Group & Organization Management, 30*, 514–540.

Nielsen, B. B., & Raswant, A. (2018). The selection, use, and reporting of control variables in international business research: A review and recommendations. *Journal of World Business, 53*, 958–968.

O'Reilly, C. A., III, Caldwell, D. F., & Barnett, W. P. (1989). Work group demography, social integration, and turnover. *Administrative Science Quarterly, 34*, 21–37.

Ott, D. L., & Michailova, S. (2018). Cultural intelligence: A review and new research avenues. *International Journal of Management Reviews, 20*, 99–119.

Phillips, K. W., & Loyd, D. L. (2006). When surface and deep-level diversity collide: The effects on dissenting group members. *Organizational Behavior and Human Decision Processes, 99*, 143–160.

Podsakoff, P. M., Mackenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*, 879–903.

Podsakoff, P. M., & Organ, D. W. (1986). Self reports in organizational research: Problems and prospects. *Journal of Management, 12*, 531–544.

Potter, R. E., & Balthazard, P. A. (2002). Understanding human interactions and performance in the virtual team. *Journal of Information Technology Theory and Application, 4*, 1–23.

Presbitero, A. (2020). Task performance in global virtual team: Examining the roles of perceived cultural dissimilarity and cultural intelligence of member and leader. *Personnel Review, 49*, 1091–1105.

Richter, N. F., Cepeda, G., Roldán, J. L., & Ringle, C. M. (2016). European management research using partial least squares structural equation modeling (PLS-SEM) (editorial). *European Management Journal, 34*, 589–597.

Richter, N. F., Schlaegel, C., van Bakel, M., & Engle, R. (2020). The expanded model of cultural intelligence and its explanatory power in the context of expatriation intention. *European Journal of International Management, 14*, 381–419.

Richter, N. F., Schubring, S., Hauff, S., Ringle, C. M., & Sarstedt, M. (2020). When predictors of outcomes are necessary: Guidelines for the combined use of PLS-SEM and NCA. *Industrial Management & Data Systems*.

Richter, N. F., Sinkovics, R. R., Ringle, C. M., & Schlaegel, C. (2016). A critical look at the use of SEM in International Business research. *International Marketing Review, 33*, 376–404.

Rigdon, E. E., Sarstedt, M., & Ringle, C. M. (2017). On comparing results from CB-SEM and PLS-SEM: Five perspectives and five recommendations. *Marketing ZFP, 39*, 4–16.

Ringle, C. M., Wende, S., & Becker, J.-M. (2015). *Smartpls 3*. Bönningstedt: SmartPLS. http://www.smartpls.com.

Roberge, M.-É., & Van Dick, R. (2010). Recognizing the benefits of diversity: When and how does diversity increase group performance? *Human Resource Management Review, 20*, 295–308.

Rockstuhl, T., & Ng, K.-Y. (2008). The effects of cultural intelligence on interpersonal trust in multicultural teams. In S. Ang, & L. Van Dyne (Eds.), *Handbook of cultural intelligence: Theory, measurement, and applications* (pp. 206–220). New York: M.S. Sharpe.

Rockstuhl, T., & Van Dyne, L. (2018). A bi-factor theory of the four-factor model of cultural intelligence: Meta-analysis and theoretical extensions. *Organizational Behavior and Human Decision Processes, 148*, 124–144.

Rosenauer, D., Homan, A. C., Horstmeier, C. A., & Voelpel, S. C. (2016). Managing nationality diversity: The interactive effect of leaders' cultural intelligence and task interdependence. *British Journal of Management, 27*, 628–645.

Ruben, B. D. (1976). Assessing communication competency for intercultural adaptation. *Group and Organization Studies, 1*, 334–354.

Rulke, D. L. (1996). Member selection strategy and team performance: Cognitive integration vs. social integration in cross-functional teams. *Academy of Management Best Papers Proceedings, 1996*, 424–428.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*, 68–78.

Schlaegel, C., Richter, N. F., & Taras, V. (2017). Cultural intelligence and work-related outcomes: A meta-analytic review. *Academy of Management Proceedings, 2017*. https://doi.org/10.5465/ambpp.2017.229.

Schlaegel, C., Richter, N. F., & Taras, V. (2020). Cultural intelligence and work-related outcomes: A meta-analytic examination of joint effects and incremental predictive validity. *Journal of World Business, 56*, 27p.

Schölmerich, F., Schermuly, C. C., & Deller, J. (2016). How leaders' diversity beliefs alter the impact of faultlines on team functioning. *Small Group Research, 47*, 177–206.

Shaw, M. E. (1981). *Group dynamics: The psychology of small group behavior*. McGraw-Hill College.

Shokef, E., & Erez, M. (2008). Cultural intelligence and global identity in multicultural teams. In S. Ang, & L. Van Dyne (Eds.), *Handbook of cultural intelligence: Theory, measurement, and applications* (pp. 177–191). Armonk: M. E. Sharpe.

Siegel, J., Dubrovsky, V., Kiesler, S., & McGuire, T. W. (1986). Group processes in computer-mediated communication. *Organizational Behavior and Human Decision Processes, 37*, 157–187.

Simon, H. A. (1978). Information-processing theory of human problem solving. In W. K. Estes (Ed.), *Handbook of learning and cognitive processes* (Vol. 5, pp. 271–295). Hillsdale, NJ: Lawrence Erlbaum Associates.

Small, F., Dowell, D., & Crawford, H. J. (2016). Servicing students: Understanding students' interactions with people and processes using online tools. *Services Marketing Quarterly, 37*, 209–224.

Stahl, G., Maznevski, M., Voigt, A., & Jonsen, K. (2010). Unraveling the effects of cultural diversity in teams: A meta-analysis of research on multicultural work groups. *Journal of International Business Studies, 41*, 690–709.

Stahl, G., & Tung, R. (2015). Towards a more balanced treatment of culture in international business studies: The need for positive cross-cultural scholarship. *Journal of International Business Studies, 46*, 391–414.

Staples, D. S., & Zhao, L. (2006). The effects of cultural diversity in virtual teams versus face-to-face teams. *Group Decision and Negotiation, 15*, 389–406.

Steiner, I. D. (1966). Models for inferring relationships between group size and potential group productivity. *Behavioral Science, 11*, 273–283.

Stewart, G. L. (2006). A meta-analytic review of relationships between team design features and team performance. *Journal of Management, 32*, 29–54.

Straus, S. G., & McGrath, J. E. (1994). Does the medium matter? The interaction of task type and technology on group performance and member reactions. *Journal of Applied Psychology, 79*, 87–97.

Tajfel, H. (1982). Social psychology of intergroup relations. *Annual Review of Psychology, 33*, 1–39.

Tajfel, H., Billig, M. G., Bundy, R. P., & Flament, C. (1971). Social categorization and intergroup behaviour. *European Journal of Social Psychology, 1*, 149–178.

Taras, V. (2020). Conceptualizing and measuring cultural intelligence: Important unanswered questions. *European Journal of International Management, 14*, 273–292.

Taras, V., Baak, D., Caprar, D., Dow, D., Froese, F., Jimenez, A., & Magnusson, P. (2019). Diverse effects of diversity: Disaggregating effects of diversity in global virtual teams. *Journal of International Management, 25*, 1–15.

Tushman, M. L., & Nadler, D. A. (1978). Information processing as an integrating concept in organizational design. *Academy of Management Review, 3*, 613–624.

Van Dyne, L., Ang, S., Ng, K.-Y., Rockstuhl, T., Tan, M., & Koh, C. (2012). Sub-dimensions of the four factor model of cultural intelligence: Expanding the conceptualization and measurement of cultural intelligence. *Social and Personality Psychology Compass, 6*, 295–313.

van Knippenberg, D., Dawson, J. F., West, M. A., & Homan, A. C. (2010). Diversity faultlines, shared objectives, and top management team performance. *Human Relations, 64*, 307–336.

Van Knippenberg, D., De Dreu, C. K., & Homan, A. C. (2004). Work group diversity and group performance: An integrative model and research agenda. *Journal of Applied Psychology, 89*, 1008–1022.

Watson, W. E., Kumar, K., & Michaelsen, L. K. (1993). Cultural diversity's impact on interaction process and performance: Comparing homogeneous and diverse task groups. *Academy of Management, 36*, 590–602.

Weisband, S. P. (1992). Group discussion and first advocacy effects in computer-mediated and face-to-face decision making groups. *Organizational Behavior and Human Decision Processes, 53*, 352–380.

Wiersema, M. F., & Bantel, K. A. (1992). Top management team demography and corporate strategic change. *Academy of Management Journal, 35*, 91–122.

Yari, N., Lankut, E., Alon, I., & Richter, N. F. (2020). Cultural intelligence, global mindset, and cross-cultural competencies: A systematic review using bibliometric methods. *European Journal of International Management, 14*, 210–250.

Yoo, B., Donthu, N., & Lenartowicz, T. (2011). Measuring Hofstede's five dimensions of cultural values at the individual level: Development and validation of CVSCALE. *Journal of International Consumer Marketing, 23*, 193–210.

Zaccaro, S. J. (1991). Nonequivalent associations between forms of cohesiveness and group-related outcomes: Evidence for multidimensionality. *The Journal of Social Psychology, 131*, 387–399.

Nicole Franziska Richter is Associate Professor of International Business at the University of Southern Denmark. She received her PhD from the University of Hamburg in 2009 and her habilitation (state doctorate) from TU Hamburg in 2015. Her research focus is on strategic and international management with specific emphasis on cross-cultural aspects. Her research was published in journals, such as Journal of World Business, Journal of International Management, International Business Review, and The International Journal of Human Resource Management. She is a senior editor of the European Journal of International Management.

Jonathan Martin is a recent master graduates in economics and business administration from the University of Southern Denmark in Odense. Since graduating he has conducted research in cooperation with researchers across Europe in the areas of international business, cross-cultural competence and global virtual teams, and has amongst others presented his work at the X-Culture Xackathon in Odense. His research has further been presented at the AoM in 2019.

Sofie Vinther Hansen is a recent master graduates in economics and business administration from the University of Southern Denmark in Odense. Since graduating she has conducted research in cooperation with researchers across Europe in the areas of international business, cross-cultural competence and global virtual teams, and has amongst others presented her work at the X-Culture Xackathon in Odense. Her research has further been presented at the AoM in 2019.

Dr. Vas Taras is an Associate Professor of International Business at the University of North Carolina at Greensboro. He received his PhD in International Human Resources and Organizational Dynamics from the University of Calgary, Canada. He is the Founder of the X-Culture Project (www.X-Culture.org). His research and work revolve around cross-cultural and global virtual teams and experiential approaches to international business education and development. He is an Associate Editor of the Journal of International Management, the International Journal of Cross-Cultural Management and Cross-Cultural Strategic Management.

Ilan Alon is Professor of Strategy and International Marketing at the School of Business and Law at the University of Agder. He holds a Ph.D. from Kent State University (USA). Alon is a researcher in the field of international business with a focus on internationalization, modes of entry, political risk, cultural intelligence and emerging markets. His publications have appeared in journals, such as Harvard Business Review, Management International Review, International Business Review, Journal of International Marketing. He is Editor-in-Chief of the International Journal of Emerging Markets and the European Journal of International Management.