

Beyond borders, beyond assumptions: new empirical insights into global virtual team dynamics

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Abstract

Purpose – This study examines how participants in global virtual teams (GVTs) perceive collaboration challenges and success factors, rather than assuming cultural diversity is inherently disruptive. By focusing on participants' interpretations of cultural differences and contrasting established theoretical barriers with the retrospective reflections of early career participants for whom virtual collaboration tools are familiar rather than novel, this study aims to determine if operational and adaptive skills outweigh national cultural differences in shaping collaboration outcomes and competency development.

Design/methodology/approach – Survey data from 81 participants were analyzed using an exploratory mixed-methods approach. Quantitative analysis and thematic coding examined participant reflections on their teamwork experience.

Findings – The findings of this study indicate that participants' interpretations of GVT collaboration diverge from commonly cited assumptions in the literature. Cultural differences were not widely reported as major sources of disruption. Communication emerged as the most critical factor associated with perceived team effectiveness, followed by shared goals and a positive team attitude. Participants also reported perceived growth in intercultural communication, adaptability and cross-cultural collaboration skills. This study offers insight into how participants interpret GVT collaboration, emphasizing the importance of team processes and individual adaptability.

Research limitations/implications – Self-report surveys are appropriate for capturing personal reflections, yet they may introduce interpretation and survey-related biases. While the sample consists of university students, participants engaged in an authentic global virtual collaboration context around real business problems, offering a setting that captures important features of global virtual teamwork. Future research is encouraged to explore a variety of measurement approaches and examine similar dynamics across varied organizational settings.

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Practical implications – Managers should prioritize training and support in the areas that emerged as key perceived enablers of collaboration and competency development: communication, coordination strategies, informal trust-building and goal alignment.

Originality/value – This study offers a nuanced, perception-based understanding of GVT experiences through the voices of participants. This study emphasizes team processes and offers theme-driven insights into how early-career, digitally fluent individuals experience virtual collaboration.

Keywords Global virtual teams, Intercultural collaboration, Digital natives, International business, Cross-cultural communication

Paper type Research paper

1. Introduction

In a rapidly changing global business landscape, organizations increasingly rely on global virtual teams (GVTs) to collaborate across cultures, time zones and languages. Enabled by digital communication tools, GVTs offer strategic advantages such as cost-effective problem-solving, resource optimization and access to diverse talent pools (Anderson *et al.*, 2007; Hertel *et al.*, 2005; Powell *et al.*, 2004; Rezgui, 2007). Their effectiveness, however, depends on not only technological infrastructure but also human factors such as collaboration, teamwork, trust, leadership and intercultural competence (Gheni *et al.*, 2016; Zakaria *et al.*, 2004). As GVTs become standard practice in multinational enterprises (Zander *et al.*, 2012), success increasingly hinges on adaptive communication strategies and collaborative fluency (Gibson *et al.*, 2014; Taras, 2022). While the advantages of GVTs, such as innovation through diversity and around-the-clock productivity, are well-established, the literature also documents a range of commonly cited challenges, including cultural misunderstandings, coordination complexity, trust deficits and communication breakdowns (Jarvenpaa and Leidner, 1999; Jimenez *et al.*, 2017; Saafein and Shaykhian, 2014; Shenkar, 2001). Importantly, however, empirical evidence suggests that the effects of these challenges are heterogeneous and contingent, rather than uniform across teams and contexts.

Empirical studies have expanded our understanding of GVTs over the past two decades by using quantitative analyses of survey, archival and publicly available data (Taras, 2025; Taras *et al.*, 2019). While this work has generated important generalizable insights, relatively fewer studies explore how GVT members themselves make sense of the challenges and success factors they described through open-ended reflections (Velez-Calle *et al.*, 2020). This opportunity, together with the explicit call for richer, mixed-methods evidence in the recent systematic review by Froese *et al.* (2025), motivates our approach. From a theoretical perspective, this study contributes by focusing on how GVT participants interpret cultural differences and collaboration processes, rather than treating cultural differences as an *a priori* explanatory driver of collaboration outcomes. In this way, the study connects GVT theories with participants' own experiences and interpretations, providing a theoretically grounded view of how collaboration challenges and success factors are viewed in practice in GVTs. Responding to that agenda, we adopt a mixed-method design that combines survey measures with open-ended reflections to examine participants' experiences in GVTs. By integrating quantitative responses with qualitative reflections, this study offers perception-based insights into how team members perceived collaboration dynamics, challenges, success factors and competency development.

The majority of participants in this study are digital natives, individuals who have grown up immersed in digital technologies and are often presumed to possess a natural fluency in virtual environments (Smola and Sutton, 2002). Rather than treating this familiarity as an inherent advantage or determinant of collaboration outcomes, their reflections offer an

informative lens on how participants interpret and navigate challenges and success factors in GVTs. Existing studies on digital natives have primarily focused on educational contexts, emphasizing traits such as comfort with digital tools, collaborative learning preferences and multitasking abilities (Lawter and Garnjost, 2021; Vitvitskaya *et al.*, 2022). Bibliometric analyses confirm that this literature is concentrated in education and computer science, with limited attention to business and organizational settings (Dastane and Haba, 2023).

This gap is particularly relevant given the normalization of virtual teamwork across industries, where familiarity with technology is increasingly a background condition rather than a differentiating capability. While younger generations may possess intuitive technological fluency, their effectiveness in navigating cross-cultural dynamics, team coordination and interpersonal challenges in GVTs remains poorly understood. Emerging scholarship suggests that digital proficiency alone does not guarantee successful collaboration, especially when cultural intelligence and adaptive communication are required (Froese *et al.*, 2025; Velez-Calle *et al.*, 2020). Accordingly, existing research points to the need for greater empirical attention to how GVT participants perceive, prioritize and make sense of commonly cited collaboration challenges and success factors in practice. Specifically, research has yet to examine how pre- and early-career individuals' experiences in digitally mediated contexts shape perceptions of team processes and outcomes in global virtual work.

Grounded in established GVT literature, this study offers empirical insights into the dynamics of short-term, self-managed GVTs. It emphasizes the role of individual competencies and team processes in shaping outcomes. Responding to long-standing calls for more empirical research on rich post-project accounts of challenges and success factors of multicultural virtual collaboration (Lynden, 2024; Morrison-Smith and Ruiz, 2020; Swart *et al.*, 2022), this study draws on survey responses from 81 GVT participants to explore how anticipated challenges manifest in practice, what factors contribute to team success and how GVT participation fosters professional competencies and personal growth. To further examine how participants experience and interpret commonly cited GVT challenges, this study focuses on whether participants perceive cultural differences as a salient source of disruption, rather than assuming their influence *a priori* based on national cultural frameworks.

This study investigates three interrelated research questions:

- RQ1. To what extent do the challenges predicted by global virtual teams literature (e.g. cultural barriers, time zones and communication breakdowns) align with participants' actual experiences?
- RQ2. What factors do participants identify as most critical to global virtual teams success?
- RQ3. How does participation in global virtual teams relate to the development of competencies that enable effective cross-cultural collaboration?

By examining participant reflections through both quantitative and qualitative lenses, this research offers fresh insights into how anticipated challenges materialize in practice and identifies the competencies that support effective teamwork in multicultural virtual contexts.

2. Literature review

To contextualize the relevance of GVTs within the broader field of international business, it is important to examine how GVTs are positioned in current IB scholarship. This section explores the strategic significance, evolving roles and unique challenges of GVTs in international business environments.

2.1 *Global virtual teams in international business*

As organizations implement globally integrated frameworks and strategies, GVTs have become central to cross-border and multinational operations (Taras, 2022; Zander *et al.*, 2012), as technological advancement and global integration demand flexible, cross-border collaboration. Powell *et al.* (2004, p. 7) define virtual teams as “groups of geographically, organizationally, and/or time dispersed workers brought together by information technologies to accomplish one or more organizational tasks.” GVTs are typically composed of individuals from diverse national, cultural and linguistic backgrounds who collaborate across time zones and organizational boundaries (Zander *et al.*, 2012). Core features include task interdependence, geographic dispersion and reliance on technology-mediated communication (Cohen and Gibson, 2003; Zakaria *et al.*, 2004). Jarvenpaa and Leidner (1999) emphasize that virtuality encompasses not only spatial separation but also cultural and linguistic diversity, which necessitates intentional strategies to foster trust and shared understanding (Gibson *et al.*, 2014; Zakaria *et al.*, 2004). Enabled by digital infrastructure, GVTs support geographically dispersed teamwork, cost-effective problem-solving, resource optimization and continuous knowledge exchange (Anderson *et al.*, 2007; Hertel *et al.*, 2005; Powell *et al.*, 2004; Rezgui, 2007). While there are different commitment timelines in GVT arrangements, the present study focuses on short-term, self-managed teams. Despite their growing prevalence, GVTs continue to face challenges that require adaptive communication strategies and continuous learning capacities (Gibson *et al.*, 2014).

2.2 *Reframing the global virtual teams challenge of cultural diversity*

To date, the literature has emphasized a range of anticipated challenges in GVTs, including cultural barriers, time zone coordination, trust deficits, technological adaptation and free-riding behaviors (Jarvenpaa and Leidner, 1999; Jimenez *et al.*, 2017; Saafein and Shaykhian, 2014; Shenkar, 2001). These challenges are often framed as potential liabilities of virtual collaboration. However, empirical evidence points to heterogeneous and context-dependent effects, such that different forms of distance or diversity may differently influence task-related and psychological outcomes (Taras *et al.*, 2019). In line with this evidence, recent studies indicate that some commonly assumed liabilities, particularly cultural differences, may be overstated when examined in isolation from team processes and contextual factors. Recent work on the digital transformation of teams similarly suggests that challenges commonly attributed to cultural or geographic dispersion often stem from changes in communication, learning and coordination processes rather than from cultural distance alone (Vuchkovski *et al.*, 2023). For example, Taras (2022), Taras (2025) and Velez-Calle *et al.* (2020) argue that technical and interpersonal factors, such as digital fluency, leadership style and team design, may play a more prominent role in shaping outcomes than cultural differences alone. These insights reflect a broader reevaluation of cultural determinism in international collaboration, calling for more context-sensitive approaches (Kramer *et al.*, 2017; Shenkar, 2001).

Foundational models such as Hofstede’s cultural dimensions (Hofstede, 1980), the GLOBE project (House, 1998) and other frameworks (Meyer, 2014; Schwartz, 1992; Trompenaars and Hampden-Turner, 2020; Tsui *et al.*, 2007) have long shaped how scholars and practitioners understand cross-cultural collaboration. While these models offer useful heuristic frameworks, they have also been critiqued for potentially essentializing national cultures and overlooking intra-cultural variation and the dynamic nature of cultural identity (Kramer *et al.*, 2017; Shenkar, 2001). More recent scholarship suggests that many challenges attributed to cultural differences in GVTs may instead emerge through interactional, linguistic or process-related mechanisms, such as digital literacy, personality traits, language

proficiency and team-level dynamics (Taras, 2022; Velez-Calle *et al.*, 2020). Large-scale meta-analytic evidence suggests that widely used cross-cultural models explain a relatively modest proportion of variance in organizational outcomes, typically on the order of 5%–7% when assessed as moderators, with individual cultural dimensions explaining substantially less (Field *et al.*, 2021). Consistent with this critique, Stahl and Tung (2015) demonstrate that research in international business has disproportionately emphasized the adverse consequences of cultural differences, often overlooking the conditions under which cultural diversity may function as a resource rather than a liability. These critiques suggest a need to refocus attention on actionable and context-sensitive factors that shape GVT collaboration outcomes. Rather than viewing cultural differences as fixed liabilities, recent scholarship encourages a more dynamic, developmental perspective that emphasizes the interpersonal, structural and individual competencies that enable effective collaboration across boundaries, as experienced and interpreted by team members in practice. Against this background, we propose the following hypothesis:

- H1. Cultural differences, while frequently cited in the literature as a major barrier to global virtual team effectiveness, are not perceived by participants as a major disruptive element in practice.

2.3 Team-level dynamics and challenges in global virtual teams

Team dynamics in GVTs are shaped by a complex interplay of behavioral, relational and contextual factors. As virtual collaboration limits traditional cues and interactions, challenges such as trust-building, coordination and accountability become especially pronounced. Importantly, however, the ways in which these challenges are experienced and managed often depend on team-level processes and interaction patterns, rather than on structural conditions alone. The following sections explore these dynamics, beginning with the foundational issue of trust.

2.3.1 Trust and swift trust in global virtual teams. Trust is essential for effective collaboration in GVTs; however, it is often challenging to establish in virtual contexts. Communication facilitates not only the exchange of information but also the development of relationships and trust (Jimenez *et al.*, 2017). In face-to-face teams, nonverbal cues such as body language convey commitment and cohesion, signals largely absent in virtual environments. The lack of casual socializing and limited visibility into teammates' efforts further complicates trust-building (Taras, 2022). Jarvenpaa and Leidner (1999) emphasize that trust bridges the psychological and organizational distance inherent in virtual teams. From this perspective, trust in GVTs is best understood as a dynamic, interaction-based process rather than a static team characteristic. In this context, swift trust becomes particularly relevant. Introduced by Meyerson *et al.* (1996), swift trust refers to the dynamics of trust within temporary teams formed around specific tasks with limited duration. Because of time constraints, members often rely on generalized trust expectations rather than firsthand experiences in developing relationships. While swift trust enables initial collaboration, it is inherently fragile and contingent on ongoing interactional cues, particularly in virtual settings. Disruptions related to time zones, cultural differences and organizational boundaries can quickly erode trust when they are perceived as signals of unreliability, disengagement or misalignment (Morrison-Smith and Ruiz, 2020). As a result, trust in GVTs must be continually reinforced through communication practices and coordinated action, making intentional trust-building strategies essential for effective collaboration throughout the project.

2.3.2 Temporal and logistical coordination challenges in global virtual teams. Time-related challenges persist as a significant source of friction in GVTs. Time zone differences often delay communication and can lead to misinterpretations of responsiveness. For instance, an afternoon email from a team member in Canada may not be seen by a colleague in Italy until the following day, which can be perceived as disengagement (Jimenez *et al.*, 2017). These delays, coupled with limited visibility into others' work, may lead individuals to overestimate their own contributions and undervalue their teammates' contributions (Taras, 2022). Calendar mismatches, such as differing national holidays, can further disrupt coordination, especially when deadlines coincide with regional non-working days. While often overlooked, these logistical mismatches require proactive planning to sustain effective coordination throughout the project.

In addition to logistical barriers, temporal diversity also includes individual chronotypes, biological patterns of energy and alertness that vary across team members. The interplay between time zones and chronotypes can either exacerbate or mitigate coordination challenges, depending on how team members interpret, accommodate and adapt to these temporal differences (Taras *et al.*, 2019). Differences in GVT members' perceptions of time, or *time visions*, also subtly influence team dynamics and performance (Saunders *et al.*, 2004). These variations shape expectations around urgency, pacing and responsiveness, often in ways that are culturally embedded and situationally enacted rather than uniformly experienced. Asynchronous communication needs in GVTs introduce patterned temporal behaviors that shape collaboration in subtle but significant ways. Massey *et al.* (2003) emphasize the importance of understanding how virtual team behavior is temporally structured, as these patterns affect coordination, decision-making and momentum in project-based work.

2.3.3 Free-riding and social loafing in global virtual teams. Free-riding refers to the tendency of individuals to reduce effort or abstain from contributing to collective tasks (Taras *et al.*, 2018). In GVTs, geographic dispersion and asynchronous work patterns weaken the social norms and visibility that typically discourage such behavior. Differences in team members' *time visions* may also subtly influence perceptions, engagement and expectations around effort and responsiveness (Saunders *et al.*, 2004). Studies suggest that approximately 30% of individuals in corporate GVTs engage in free-riding behavior (Taras, 2022), highlighting the prevalence of this challenge across organizational settings. Cultural and organizational diversity can further dilute team identity, particularly in short-term, self-managed teams, increasing the likelihood that uneven participation will be noticed and interpreted as disengagement (Taras, 2022). Importantly, however, instances of perceived free-riding vary in salience and impact, often depending on how teams communicate expectations, allocate responsibilities and respond to uneven contributions. The consequences of free-riding include disrupted workflows, missed deadlines and increased coordination burdens, with members contributing less than expected, often triggering a "rotten apple" effect that undermines team morale. While free-riding can pose substantive challenges for coordination and task completion, evidence suggests that its effects in GVTs are frequently managed through adaptive team processes, rather than uniformly undermining collaboration.

2.3.4 Leadership dynamics and structural supports. Leadership in GVTs is often distributed, with team members sharing responsibility for coordination, motivation and decision-making. Effective leadership supports goal alignment, feedback and conflict resolution (DeRue, 2011; Gheni *et al.*, 2016; Thommes *et al.*, 2024). Leadership functions as a team-level dynamic that influences collective performance; however, the concept and enactment of leadership vary across cultures, influencing how leaders are designated and what behaviors are expected (Zakaria *et al.*, 2004). In virtual contexts, these variations are often amplified, as the novelty of virtual collaboration, language barriers and cultural values

such as modesty can inhibit individuals from assuming leadership roles. A lack of an agreed-upon leadership structure can result in unclear role expectations, conflicting authorities and ineffective delegation (Taras, 2022).

Team charters, formal agreements outlining goals, norms and responsibilities, can enhance early-stage clarity and motivation (Aaron *et al.*, 2014; Johnson *et al.*, 2022; Knapp *et al.*, 2020) and can be especially useful in highly diverse teams, where they help mitigate cultural and functional differences (Behfar *et al.*, 2008; Dönmez *et al.*, 2016; Grote *et al.*, 2018). As coordination tools, team charters are particularly valuable during the early phases of GVT formation. However, their long-term impact may be limited as informal norms and emergent practices begin to shape team behavior (Johnson *et al.*, 2022).

Collectively, this literature suggests that understanding GVT effectiveness requires moving beyond viewing cultures as fixed factors and instead examining team-level processes and interactional dynamics as they are experienced and interpreted by participants. We, thus, propose the following hypotheses:

- H2a. Clear and consistent communication is positively associated with perceived global virtual team effectiveness.
- H2b. Shared goals are positively associated with perceived global virtual team effectiveness.
- H2c. A positive team attitude is positively associated with perceived global virtual team effectiveness.

2.4 Individual-level factors for global virtual teams success

2.4.1 Cross-cultural competencies. Among individual-level factors, Cultural Intelligence (CQ), the capability to understand and adapt effectively across diverse cultural contexts, has emerged as a key predictor of collaborative effectiveness in international business and management research (Ang and Van Dyne, 2015; Earley and Ang, 2003; Kirkman *et al.*, 2016; Yari *et al.*, 2020), with evidence suggesting that culturally intelligent teams facilitate “fusion teamwork” and improved outcomes (Kirkman *et al.*, 2016). Several related constructs further illuminate how individuals navigate cultural complexity in global work contexts. Global Mindset (GM) reflects a strategic orientation that integrates global and local perspectives (Gupta and Govindarajan, 2002), while Cultural Agility (CA) emphasizes behavioral flexibility and real-time adaptation in multicultural settings (Caligiuri, 2012). Cross-Cultural Competence (CC) focuses on the knowledge, skills and attitudes required for effective intercultural interaction (Dolan and Kawamura, 2015; Johnson *et al.*, 2006), and Cross-Cultural Psychological Capital (CC PsyCap) builds on the broader construct of Psychological Capital (PsyCap) to highlight positive psychological resources (e.g. confidence, resilience and optimism) that support cross-cultural engagement (Cotter and Reichard, 2019; Dollwet and Reichard, 2014; Luthans and Youssef-Morgan, 2017). These frameworks and competencies, while conceptually distinct, share a common goal: supporting individuals’ ability to communicate, adapt and engage effectively in global and multicultural environments. Such competencies are widely understood as developable, shaped through experience, targeted training and developmental interventions. A comparative summary of these constructs is presented in Table 1.

2.4.2 Communication processes and language proficiency. Clear and consistent communication is widely recognized as a critical enabler of GVT effectiveness (Gibson and Gibbs, 2006; Martins and Schilpzand, 2021). Swift trust, developed through early and

Table 1. Comparison of key cross-cultural constructs

Concept	Emphasis	Core attributes
Cultural intelligence (CQ)	Measurable capabilities across cultures	Adaptability in diverse cultural contexts
Global mindset (GM)	Strategic and cognitive orientation	Integrative global-local thinking
Cultural agility (CA)	Behavioral flexibility in real-time	Quick adaptation in multicultural settings
Cross-cultural competence (CC)	Knowledge, skills, and attitudes for effective intercultural interaction	Interpersonal effectiveness across cultures
Cross-cultural psychological capital (CC PsyCap)	Positive psychological resources in cross-cultural contexts	Confidence, resilience, optimism, adaptability
Source(s): Authors' own work		

frequent interaction, supports psychological safety and team cohesion (Crisp and Jarvenpaa, 2013; Meyerson *et al.*, 1996; Zakaria and Yusof, 2020). Informal social interactions also foster interpersonal connections and motivation. Mohd Yusof and Zakaria (2025) emphasize that misaligned expectations, divergent working styles and coordination gaps can undermine team performance, yet such barriers are often mitigated through trust-building, transparent communication and shared goals. This perspective aligns with Gibson and Gibbs (2006) and Martins and Schilpzand (2021), who likewise stress that communication and trust function as not only structural supports but also relational processes that sustain cohesion in virtual teams. Taken together, these insights suggest that GVT effectiveness may be shaped less by fixed cultural or technological constraints than by the team's ability to establish and maintain adaptive interactional norms.

Hence, effective communication remains a cornerstone of successful collaboration in GVTs. In particular, language proficiency and digital fluency play pivotal roles in shaping team participation and performance as they are experienced by team members. In GVTs, varying levels of language proficiency can be a barrier to effective collaboration. Team members may hesitate to contribute because of a fear of being misunderstood, which can negatively impact communication quality and team performance (Jimenez *et al.*, 2017). Miscommunication can lead to delays, errors and incomplete tasks, while limited language skills may hinder the expression of complex ideas and contribute to exclusion or isolation. Language barriers also impede the interpretation of cultural nuances, increasing the risk of misunderstandings in diverse teams. These challenges are intensified in virtual settings, where the absence of nonverbal cues complicates trust-building and conflict resolution.

Beyond basic skills, language challenges include heavy accents and the use of slang or acronyms, which can confuse even fluent speakers. Even with a common language like English, misunderstandings persist, especially when it is not the native language of most team members. Disparities in proficiency affect communication frequency, knowledge sharing and participation in decision-making (Jimenez *et al.*, 2017). Such gaps often lead to social categorization, bias and exclusion of less fluent members. When some team members are highly proficient in the working language and others are not, team cohesion and performance may weaken depending on how teams adapt interactional practices and manage inclusion (Taras, 2022).

2.4.3 Digital fluency and media use. Digital fluency, the ability to effectively navigate and integrate digital tools, is increasingly relevant for GVTs. According to Media Richness Theory (Daft and Lengel, 1986), richer media such as video conferencing support trust-building and ambiguity reduction, while leaner, asynchronous tools (e.g. email, shared

documents) offer flexibility and traceability. Many GVT participants, particularly digital natives, are familiar with virtual environments because of early and continuous exposure to technology (Bencsik *et al.*, 2016; Froese *et al.*, 2025; Smola and Sutton, 2002; Stroe, 2019). This familiarity may shape how collaboration challenges are experienced, potentially reducing barriers related to technology, language and coordination. However, digital proficiency alone does not ensure effective collaboration; interpersonal and intercultural competencies remain essential mediating factors (Velez-Calle *et al.*, 2020).

Access to technology and infrastructure also presents challenges. In some regions, limited connectivity, outdated hardware and software and incompatible systems hinder participation (Gheni *et al.*, 2016). Even in well-connected areas, technical glitches can disrupt communication and cause discomfort among team members who rely on remote tools (Taras, 2022). Beyond infrastructure, digital fluency may influence how effectively teams select, combine and adapt communication media. Competence with digital tools varies by not only generation but also familiarity with specific platforms. For instance, proficiency in social media does not necessarily translate to competence with project management or collaboration tools. Distinguishing between general digital familiarity and task-specific tool aptitude is essential when evaluating team readiness and performance in practice. Building on participants' reflections regarding communication, adaptation and learning in digitally mediated collaboration, we examine whether participation in GVTs is associated with perceived development of relevant cross-cultural and collaborative competencies. We, thus, propose the following hypotheses:

- H3a. Participation in global virtual teams is associated with individuals' self-reported intercultural communication skills.
- H3a. Participation in global virtual teams is associated with individuals' self-reported adaptability in cross-cultural contexts.
- H3c. Participation in global virtual teams is associated with individuals' self-reported cross-cultural competencies.

3. Methodology

To address the research questions and test the proposed hypotheses, this study used a mixed-methods design (Creswell *et al.*, 2003), integrating both quantitative and qualitative data to capture the complexity of collaboration in GVTs. The following section outlines the research context, participant demographics, instrument design and analytical procedures.

3.1 Research context

Data were collected within the X-Culture Project (www.X-Culture.org), a global experiential learning and consulting initiative that provides a natural laboratory for studying GVTs. Since its inception in 2010, X-Culture has engaged more than 130,000 participants from over 500 universities in 70+ countries. Each year, approximately 10,000 individuals, primarily advanced undergraduate, MBA and EMBA students, as well as professional coaches and mentors, take part in the program, offering an exceptionally diverse and recurrent sample for empirical inquiry. Participants are randomly assigned to multicultural, short-term GVTs, typically consisting of five to seven members, each located in a different country and enrolled at a different institution. Teams are tasked with developing international business solutions for real client companies under time-bounded, project-based conditions. Projects often involve analyzing global market potential, assessing industry competition and

recommending strategies in areas such as pricing, promotion, human resources, logistics and product adaptation. Clients range from large multinationals (e.g. Mercedes-Benz, Louis Vuitton, YKK and Alibaba) to small- and medium-sized organizations and entrepreneurial ventures, ensuring tasks are organizationally authentic and consequential to participants.

The collaboration process spans approximately eight to nine weeks of intensive teamwork. Preparation begins with onboarding and training in online collaboration, intercultural communication and conflict management, after which teams begin work directly with client briefs. Teams rely on a range of digital communication tools common in professional practice, including email, Slack, WhatsApp, Microsoft Teams, Zoom and Google Docs. Teams enjoy a high degree of autonomy in determining which tools to use, how to coordinate and how to structure leadership and task allocation, closely mirroring organizational GVTs and foregrounding challenges such as communication, trust development and accountability. The program attracts a participant population heavily composed of digital natives, with an average age of 23, and the vast majority reporting extensive prior use of digital collaboration platforms. Demographics are broad: participants have represented over 70 countries, about 80% report prior work experience (average 5.5 years), and over one-third have held managerial positions. Many are employed while enrolled, making this setting a high-engagement, practice-oriented context that reflects important features of organizational GVTs rather than a purely academic project.

3.2 Participants

The sample consisted of 81 individuals who had recently participated in the two-month GVT business consulting project. Participants included individuals from diverse national and cultural backgrounds, as well as trained coaches who supported and observed the GVT teams. Moreover, approximately 78% had prior work experience, and 43% were employed at the time they participated in X-Culture. The sample comprised 25 countries, with an average age of approximately 23 years. The ages ranged from 17 to 45 years, with the majority (75.3%) falling between 21 and 30 years old. Respondents included 35 men (43.2%), 44 women (54.3%) and 2 individuals (2.5%) who either preferred not to answer or identified as other. By country of residence, the top five were the USA, Taiwan, India, Ghana and Germany. The remaining countries represented in the data set were Argentina, Brazil, Canada, China, Colombia, Egypt, France, Italy, Japan, Kenya, Mexico, Nigeria, Pakistan, Peru, Philippines, South Korea, Spain, Turkey and the UK ([Appendix 1](#)).

The majority of participants (63%) were university students, while approximately a third (37%) were project coaches or administrators. This dual-cohort approach, students and coaches, was designed to capture a broad spectrum of perspectives that could provide a rich basis for analyzing collaboration within the GVT environment. Although the sample included both students and coaches, analyses were conducted at the full-sample level and were interpreted as perception-based summaries rather than comparative claims across cohorts. We report the composition transparently and note that future work could examine cohort differences directly. The survey was distributed via Qualtrics, and participation was voluntary for both students and coaches. A total of 84 individuals received the survey invitation, and 81 completed it, resulting in a 96.4% response rate.

Student samples are often viewed as a limitation in organizational research, particularly when “global” or “virtual” dimensions are simulated, tasks are short or artificial or incentives are weak. However, the X-Culture context mitigates many of these common concerns. Participants in this study worked in fully international, geographically dispersed virtual teams that faced real cultural, time-zone, language and institutional differences, using collaboration tools common in organizational settings (e.g. email, videoconferencing and shared

documents). The project involved a real client-based consulting task conducted over multiple months, closely resembling the structure and coordination demands of temporary corporate project teams. Importantly, participation carried substantial stakes: the project typically accounted for a major portion of the course grade, and strong performance was associated with tangible professional outcomes such as certificates, recommendation letters, symposium invitations and, in some cases, internship or job opportunities. Thus, rather than serving as simplistic proxies for employees, participants can be understood as early-career global virtual collaborators operating in a high-fidelity, high-engagement setting. From a practical perspective, because GVTs are notoriously difficult to study at scale within comparable organizations, the X-Culture platform offers a rare opportunity to observe a large number of reasonably matched teams working on similar tasks, providing methodological advantages that complement the inevitable boundary conditions of any single research setting.

3.3 Instrument design

The survey instrument was developed through a theory-informed and empirically grounded process, drawing on established literature on GVTs, intercultural competence and virtual collaboration (Gibson and Gibbs, 2006; Kirkman *et al.*, 2016; Taras, 2022). All responses were anonymous, and participants were informed that their data would be used solely for research purposes. Closed-ended items used Likert-type scales to measure constructs such as leadership quality, communication effectiveness, cultural dynamics, shared goals, language proficiency, time zone coordination and the prevalence of free-riding or unequal participation as perceived by respondents. The qualitative data consist of open-ended survey responses (Appendix 2). These questions invited participants to reflect on team challenges, personal growth and their perceived outcomes of the GVT experience. These qualitative responses added contextual depth and helped identify emergent themes.

To enhance content validity, survey items were informed by prior empirical studies and refined through expert review. The instrument was pilot-tested for clarity and relevance before full-scale deployment.

3.4 Data analysis

Quantitative data were analyzed using descriptive statistics to identify patterns in perceived challenges and success factors. Qualitative data were analyzed using thematic analysis, which identified recurring themes related to team dynamics, intercultural collaboration and participants' perceived development of individual competencies.

4. Results

This section presents findings from the mixed-methods analysis, organized around this study's three hypotheses. Quantitative and qualitative data were integrated to explore participants' experiences with GVTs, supported by illustrative quotations drawn from participants' open-ended responses (Appendix 2) to exemplify and salient recurring themes.

4.1 Cultural differences as a disruptive element

Addressing RQ1, H1 posited that, while cultural differences are frequently cited in the literature as barriers to GVT effectiveness, participants do not perceive them as major disruptive elements in practice. Participants' responses are consistent with this hypothesis.

Among 81 responses, only 25 participants (30.86%) reported that cultural differences had a noticeable impact on collaboration. The majority (69.14%) either did not perceive cultural

differences as disruptive or described them as manageable, enriching or neutral. Participants who did report cultural challenges cited issues such as differing approaches to delegation and leadership, difficulty understanding accents or written communication, tone differences, varied perceptions of deadlines and work ethic and language barriers:

“Some [team members] were more formal than I would be in a group project.” (Participant 16).

“Certain cultures just have certain ways they do work. Some are more controlling and some are more laid back. Also, expectations on maybe the quality or quantity of work differed in each culture.” (Participant 52).

“It impacted us more with how we got our research and how the report was written. This was because we had two members where English is not their first language and made it difficult for them. Luckily we had someone who could speak both English and Spanish and therefore could translate their work well.” (Participant 18).

“The most cultural difference that impacted my work as a GVT was the language. During the X-Culture experience, one of the members of the team didn’t speak English. During the meeting, she never spoke or took part in our project and it was really complicated to understand her.” (Participant 42).

However, closer analysis suggests that many of these challenges were not strictly cultural but stemmed from operational or interpersonal factors, such as unequal engagement, poor coordination or mismatched expectations. These dynamics, while sometimes aligned with cultural backgrounds, were more often driven by language proficiency, personality or external circumstances. In contrast, many participants and coaches emphasized the benefits of cultural diversity:

“Cultural differences in the global virtual team influenced our work by bringing diverse perspectives. We learned to appreciate and adapt to various working styles, it enriched our collaboration, making us more effective as a team.” (Coach 20).

“I wouldn’t say that impacted our work as a GVT negatively. Instead, it was a positive impact, those differences helped us come up with more creative ideas and we got to see things from a whole different perspective.” (Coach 19).

“Yes. Understanding other holidays in other cultures was new, exciting, and fun.” (Coach 24).

These reflections align with literature suggesting that cultural diversity, when well-managed, enhances team creativity, perspective-taking and interpersonal learning (Taras *et al.*, 2013; Velez-Calle *et al.*, 2020). While cultural differences were present and acknowledged, they were rarely described as major impediments. Instead, participants described their teams as leveraging diversity as a resource to encourage mutual learning and innovation.

Several further recurring themes related to collaboration challenges emerged from participants’ reflections, offering insight into the direct experiences of GVT collaboration beyond cultural differences alone.

4.1.1 Time zone differences. Of 73 responses, 40 participants reported notable challenges because of time zone differences. These included: inadequate communication and delayed feedback, difficulty scheduling meetings across time zones, early or late meeting times disrupting sleep or other commitments and completing tasks well in advance to accommodate asynchronous contributions:

“You have to have patience as everyone is on different time zones [...] you cannot expect a text right then and there.” (Participant 10).

“I learned to be patient and understanding being a part of a GVT team [...] people also have private lives and outside factors that could affect work.” (Participant 43).

4.1.2 Free-riding. Nearly half (43%) of the participants experienced free-riding. While disruptive, most teams managed to complete their work successfully, suggesting that the issue is often navigable when it does not dominate team dynamics. Evidence showed that free-riding did not derail projects; instead, teams adapted through informal leadership. This suggests free-riding is not always fatal in short-term GVTs, but rather a test of adaptive team processes and collective problem-solving:

“We just had one team member who rarely replied or showed up in our meetings but we managed to successfully complete the project anyways.” (Coach 23).

“At the end of the program [...] one of the members was acting as a free rider [...] we used the backup person for that task to complete it.” (Coach 02).

4.1.3 Cultural events and holidays. Participants noted that differing cultural calendars affected coordination and deadlines. While not always disruptive, these differences required planning and flexibility and were frequently managed through anticipatory coordination:

“Understanding other holidays in other cultures was new, exciting, and fun.” (Coach 24).

“Different cultural events and festivities slowed the process.” (Participant summary)

4.2 Factors contributing to perceived global virtual team effectiveness

Addressing RQ2, H2 proposed that clear and consistent communication (H2a), shared goals (H2b) and a positive team attitude (H2c) are positively associated with perceived GVT effectiveness. The empirical evidence is consistent with this hypothesis and its sub-hypotheses.

4.2.1 Communication as a central success factor. Communication emerged as the most emphasized factor across the data set. In all, 96% of respondents rated it as important or very important to their team’s success. Participants described communication as not only a tool for task execution but also a mechanism for building trust, clarifying expectations and sustaining motivation across distance:

“Communication. In my opinion, this is the most important part of working in any GVT. Communication about the problems that might affect a team’s work [...]” (Participant summary).

“Communication outside of the main task to become actual friends with the teammates are essential for achieving success in GVTs.” (Coach 17).

“Working together, communicating openly, address differences and find a way to work through them!” (Participant 01).

“Communication is a huge part of GVT’s success, I wish we would’ve video chatted to get to know each other better before the project.” (Participant 16).

“Communication, and weekly meetings. Just see each other face to face once per week.” (Participant 20).

Technology played a key role in facilitating communication. Document-sharing tools (e.g. Google Docs and Dropbox) were used by 98.2% of participants, followed by instant messaging platforms (85.7%), video conferencing tools (75%) and email (64.3%). Project management tools were least used (28.6%). These patterns suggest that while asynchronous tools were dominant, synchronous platforms were valued for interpersonal connection, particularly for relationship-building and trust development, as illustrated in [Table 2](#).

Table 2. Use of technical media

Tool category	No. of users	%
Instant messaging (IM) tools (WhatsApp, GroupMe, WeChat)	48	85.7
Video conferencing tools (Zoom, Google Meet, Teams)	42	75.0
Email	36	64.3
Document sharing tools (Google Docs, Dropbox)	55	98.2
Project management (PM) tools (Slack, Trello)	16	28.6

Source(s): Authors' own work

4.2.2 Shared goals and team alignment. Shared goals were frequently cited as essential to team effectiveness. Teams that explicitly discussed and aligned around a common objective reported higher engagement and smoother workflows. In contrast, teams lacking shared purpose described drift, disengagement or miscommunication:

“Communication and understanding. If everyone is going towards the same goal and taking the same steps the project will be successful.” (Participant 47).

“A successful Global Virtual Team (GVT) project hinges on effective communication, cultural awareness, the right technology, defined roles, flexibility, established processes, regular check-ins, shared goals, building trust, and ongoing evaluation and feedback.” (Coach 20).

4.2.3 Team attitude and managing free-riding. Team attitude played a significant role in navigating challenges such as free-riding. While 45.6% of participants reported having a team member who contributed significantly less, many described how empathy and proactive engagement helped resolve these issues without escalating conflict or undermining task completion:

“In the beginning of the program, everyone was active and did their task genuinely and with full motivation. At the end of program (video presentation) one of the members was acting as a free rider [...] we used the backup person for that task to complete it.” (Coach 2).

“We just had one team member who rarely replied or showed up in our meetings but we managed to successfully complete the project anyways.” (Coach 23).

These examples reflect a cooperative team attitude, where flexibility and shared responsibility were practiced even in the absence of formal structures.

4.2.4 Other influential factors. Language proficiency was prioritized by 68% of participants, though 14% viewed it as less critical. Team charters received mixed evaluations: 52% considered them important, while nearly a third (30%) assigned low importance scores. This suggests that formal agreements may be underused or perceived as less relevant in short-term or informally managed teams. Leadership was mentioned by 76% of respondents as important, though few framed it as decisive. Instead, leadership was often understood in distributed terms, with all team members contributing to goal alignment and motivation, as illustrated in [Table 3](#).

In conclusion, participants' responses support *H2*. GVT effectiveness is driven less by formal structures and more by consistent communication, shared goals and a cooperative team attitude. These elements form the backbone of successful virtual collaboration.

4.3 Development of cross-cultural collaboration competencies

Addressing *RQ3*, *H3* proposed that participation in GVTs is associated with individuals' self-reported intercultural communication skills (*H3a*), adaptability in cross-cultural contexts

Table 3. Perceived importance of specific global virtual teams collaboration aspects

Scale/item	1 (not important)	2	3	4	5 (very important)	Average
Having a leader	0	4	14	27	33	4.14
Communication	0	1	0	6	71	4.88
Language proficiency	0	3	13	37	25	4.08
Team charter	0	4	27	29	18	3.78

Source(s): Authors' own work

(H3b) and cross-cultural competencies (H3c). The empirical evidence is consistent with this hypothesis and its sub-hypotheses.

4.3.1 Self-reported competency development. Participants consistently reported perceived personal and professional growth resulting from their GVT experience.

Participants described perceived improvements in communication skills, cross-cultural competencies and adaptability, competencies considered essential for navigating multicultural environments and enhancing career readiness:

“Working in a GVT has significant potential benefits for my future career. It has equipped me with valuable skills in communication, adaptability, and collaboration across diverse cultural backgrounds.” (Coach 20).

“Definitely X-Culture changed my professional and academic career in an unprecedented and unexpected way. Now I feel more confident in being able to collaborate in an international environment with people coming from different parts of the world and with so many different ideas.” (Coach 10).

“The coaching experience helped me learn how to deal with the most common problems in GVTs [...] It definitely helped me get a better idea of how different goals and attitudes toward work of different team members affect a team.” (Coach 17).

Among 81 respondents, 62 indicated that the GVT experience could positively benefit their careers. Through content analysis and clustering, participants identified a range of competencies they reported developing, including teamwork, patience, time management, research skills, business planning, remote collaboration, language proficiency and organizational skills.

4.3.2 Emergent competencies: Patience and tolerance. Two competencies, patience and tolerance, emerged consistently across responses, despite not being initially theorized. Patience was described as a situational skill for managing asynchronous work, time zone differences and delayed responses:

“You have to have patience as everyone is on different time zones [...] you cannot expect a text right then and there.” (Participant 10).

“I learned to be patient and understanding being a part of a GVT team [...] people also have private lives and outside factors that could affect work.” (Participant 43).

Tolerance referred to a broader, value-based capacity to accept different work styles, communication norms and cultural expectations without judgment:

“We need to be open, inclusive, and tolerant while working with people from different cultural backgrounds.” (Coach 2).

“Working with people from different parts of the world [...] teaches tolerance and allows students to see the world from different perspectives.” (Participant 04).

Figure 1 summarizes the key factors identified by respondents as critical for effective GVT collaboration as perceived by participants. Communication emerged as the most important element, enabling teams to address challenges and manage diverse working styles. Shared goals and a positive attitude were also emphasized as essential for aligning efforts and minimizing conflict. In addition, respondents highlighted patience, tolerance, adaptability, mutual respect, trust and relationship-building as necessary for promoting an inclusive environment and sustaining successful collaboration.

The findings presented above reveal a nuanced picture of GVT collaboration. While some anticipated challenges, such as time zone coordination and free-riding, were commonly reported, others, including cultural differences and leadership ambiguity, proved less disruptive than expected. Communication consistently emerged as the most critical success factor, reinforcing its foundational role in virtual teamwork. These results suggest that many difficulties traditionally attributed to cultural distance may instead stem from operational or interpersonal dynamics as experienced within teams. The following discussion interprets these findings in relation to existing literature, highlighting key themes that inform both theoretical understanding and managerial practice.

5. Discussion

Drawing from both quantitative and qualitative data, four key themes emerged: Rethinking Cultural Challenges, Communication as Core Infrastructure, Competency Development through Experience and Navigating Structural Frictions. These themes offer a nuanced understanding of how GVTs function in practice, as experienced and interpreted by participants, and contribute to both team effectiveness and individual development.

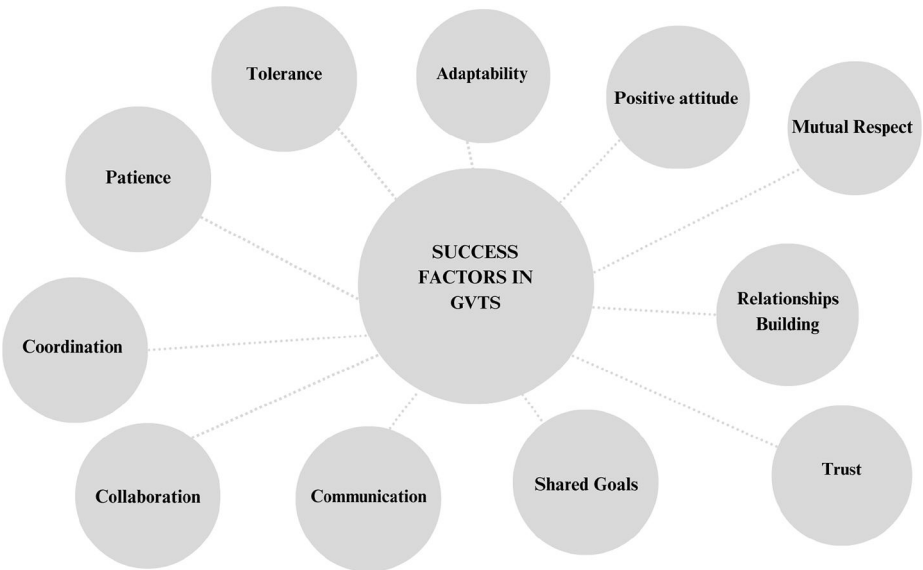


Figure 1. Key success factors noted by participants
Source: Authors' own work

5.1 Rethinking cultural challenges

Participants' reported experiences suggest a more nuanced picture than commonly held assumption that cultural differences are the primary barrier to GVT effectiveness. While cultural diversity was acknowledged, it was rarely cited as a major source of disruption. Instead, many challenges attributed to "culture" were more accurately linked to operational or interpersonal factors such as language proficiency, personality traits and coordination gaps as experienced within teams. This supports critiques of cultural determinism in the international business literature (Kramer *et al.*, 2017; Shenkar, 2001) and aligns with recent empirical work suggesting that cultural barriers may be overstated when compared to other team-level dynamics (Taras, 2022; Velez-Calle *et al.*, 2020).

This study reinforces the view that culture should be treated as a fluid, situational and context-dependent construct. These findings align with ongoing discussions in the literature that call for greater attention to interactional and situational factors alongside national cultural frameworks, particularly when interpreting participants' perceptions of collaboration in practice.

5.2 Communication as core infrastructure

Communication emerged as the most consistently cited factor associated with GVT success, with 96% of participants rating it as important or very important. This finding reinforces Media Richness Theory (Daft and Lengel, 1986) and highlights the importance of media competence, including knowing when and how to use synchronous and asynchronous tools effectively. Document-sharing platforms were nearly universally adopted (98.2%), while project management tools were underused (28.6%), suggesting a need for better training and integration of collaborative technologies.

Consistent with Taras's (2025) evidence that lack of informal communication is a key barrier to trust and cohesion, our results confirm that communication is not merely a technical enabler but also a relational infrastructure. It facilitates trust-building, role clarity and motivation, particularly in asynchronous and diverse environments (Gibson and Gibbs, 2006; Martins and Schilpzand, 2021). These insights suggest that organizations should invest in communication training and platform fluency, especially for teams operating across time zones, institutional contexts and cultural boundaries. This emphasis is consistent with research on the digital transformation of teams, showing that many challenges of virtual collaboration arise from shifts in communication routines and learning processes rather than from cultural distance alone (Vuchkovski *et al.*, 2023).

This study also supports the argument that communication is not merely a technical function but a relational one. It facilitates trust-building, role clarity and motivation, particularly in asynchronous and culturally diverse environments (Gibson and Gibbs, 2006; Martins and Schilpzand, 2021). Further reinforcing this interpretation, Mohd Yusof and Zakaria (2025) show that swift trust in GVTs is often developed through transparent communication and shared expectations, which help teams overcome initial uncertainties and diverse working styles. This convergence of evidence underscores the central role of communicative processes in bridging structural and cultural divides in virtual collaboration contexts. These insights reinforce existing evidence that communicative processes play an important role in helping teams navigate structural and interpersonal differences in virtual collaboration.

5.3 Competency development through experience

When participants referenced "Cultural Intelligence" in their reflections, deeper analysis of open-ended responses revealed that they were often describing elements spanning multiple frameworks, including Cultural Intelligence (CQ), Global Mindset (GM), Cultural Agility

(CA), Cross-Cultural Competence (CC) and Cross-Cultural Psychological Capital (CC PsyCap). These reflections (e.g. emergence of flexibility, patience and tolerance as recurring themes) suggest a self-perceived, experience-based development of numerous cross-cultural competencies (Figure 2). While some participants explicitly mentioned gains in CQ, it is important to note that this study did not include pre- and post-assessments of CQ or related constructs. Accordingly, these insights are based on self-reported perceptions. Nevertheless, the consistency of participant narratives regarding their GVT experiences provides rich qualitative evidence of perceived learning processes across these domains (Andresen and Bergdolt, 2017; Yari *et al.*, 2020).

5.4 Navigating structural frictions

Structural challenges such as temporal coordination, free-riding and leadership ambiguity were frequently cited but generally manageable. Time-zone differences were the most consistently reported challenge, affecting scheduling, responsiveness and perceived engagement; however, as Taras (2025) shows, these “obvious suspects” are often less problematic than assumed; instead, issues like lack of effort, unclear guidelines and competing commitments prove more disruptive. In line with these insights, many participants reported developing adaptive strategies, such as early task completion and asynchronous coordination. Similarly, while free-riding was a common concern, it was often contained or resolved through peer accountability and informal leadership. These findings suggest that short-term, self-managed GVTs can develop resilience mechanisms, particularly when participants are motivated and supported by clear expectations.

Despite the structural conditions in virtual environments that may enable free-riding, especially reduced visibility and accountability, findings from this study indicate that most teams adapted effectively. While instances of disengagement were reported and often perceived as frustrating, they were generally limited in scope. Teams demonstrated resilience and self-regulation through open communication, proactive engagement and task redistribution when necessary. These strategies helped mitigate the impact of free-riding and maintain overall team performance throughout the project, even in the absence of traditional oversight mechanisms.

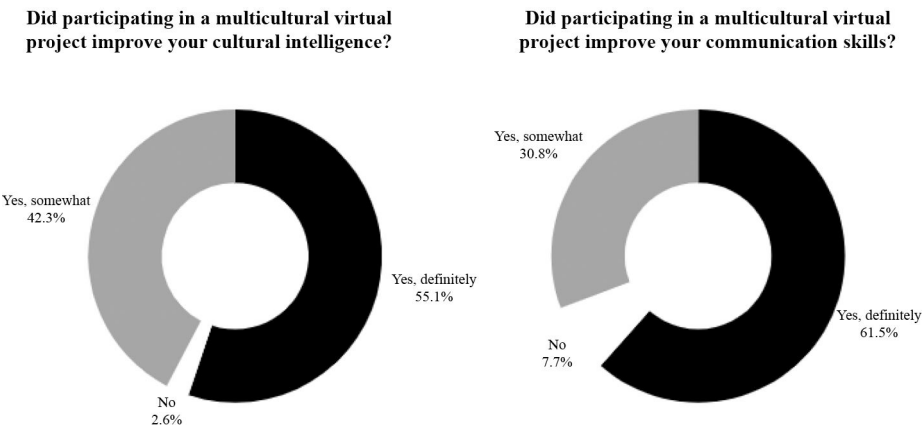


Figure 2. Self-reported communication and CQ improvements
Source: Authors' own work

Leadership was valued (76% rated it important), but often understood in distributed terms. This aligns with literature on shared leadership in virtual teams (Gibson *et al.*, 2014; Zakaria *et al.*, 2004), suggesting that effective GVTs rely more on collective responsibility than hierarchical control. Language proficiency was also prioritized, though team charters received mixed evaluations, indicating that formal structures may be less impactful than informal norms and emergent practices in short-term, self-managed teams.

5.5 Theoretical contributions

This study contributes to GVT theory by encouraging greater attention to how team members interpret cultural differences in relation to GVT dynamics and perceived learning outcomes. It does so in several ways.

First, this research advances critiques of cultural determinism in International Business by providing evidence that participants frequently attributed collaboration challenges to operational or interpersonal factors rather than to national cultural distance. By focusing on participant interpretations, we demonstrate that many challenges historically labeled as “cultural” are, in fact, operational or linguistic frictions that can be mitigated through adaptive team processes. These patterns resonate with emerging perspectives that view GVT effectiveness as shaped by dynamic, interactional mechanisms rather than fixed structural factors. In this sense, our findings respond directly to calls for a more balanced treatment of culture in international business research by shifting attention from culture as a presumed barrier toward the processes, capabilities and contextual conditions through which cultural differences are enacted and interpreted in practice (Stahl and Tung, 2015).

Second, this study contributes to ongoing generational discussions within GVT research. Most GVT models are built on the assumption that virtuality is a “disruption” to be overcome. In contrast, we did not specifically compare digital natives to older generations. The majority of respondents fall within the “digital natives” cohort, and in this sample, many participants described virtual collaboration as familiar and intuitive, which may reflect their extensive experience with digital tools rather than generational differences *per se*. Participants’ descriptions suggest that technological fluency may have shaped which challenges felt most salient to them, such as geographic dispersion and asynchronous tool use, which were once considered major liabilities.

In this sample, participants often described collaborative fluency and interpersonal sensitivity as important aspects of their teamwork experience, although future research is needed to examine how these perceptions may vary across different populations. These reflections suggest that, for many participants who are highly comfortable with digital tools, virtual collaboration was perceived less as a barrier to overcome and more as a familiar work environment in which effective communication and coordination remained central. These findings contribute to GVT scholarship by clarifying how participants themselves make sense of collaboration challenges and enablers, complementing existing theory with perception-based evidence.

Third, this study highlights the importance of reprioritizing process over structure and pointing out the changing balance between hygiene factors and success drivers.

Participants often described structural variables, such as time zones and access to technology, as “hygiene factors,” noting that they tended to become salient primarily when dysfunctional. In contrast, participants frequently emphasized relational processes as central to effective collaboration, including consistent communication, shared goal alignment and a cooperative team attitude. By providing rich evidence, we confirm that even in short-term, self-managed GVTs, the development of swift trust and distributed leadership is more decisive for perceived success than any formal organizational structure. This perspective

aligns with emerging discussions in GVT research that emphasize human-centric adaptability, and it is consistent with prior work highlighting the practical importance of communication, shared expectations and adaptive behaviors in shaping participants' experiences of teamwork, particularly in short-term virtual projects.

By focusing on participants' interpretations, this study helps explain why similar GVT conditions may be experienced differently across teams.

The findings offer points of convergence with, and nuance relative to, prevailing theories, providing additional insight into the evolving nature of virtual collaboration. Specifically, this study supports a shift toward dynamic, interactional frameworks that account for individual agency, technological fluency and experiential learning. The consistency and depth of participants' reflections suggest that short-term engagement in GVT projects is associated with self-reported personal and professional growth across multiple competencies, with potential relevance across industries.

Our findings help clarify how participants described "cultural challenges" in practice. Participants rarely described national culture as a direct driver of breakdowns. Instead, perceived problems typically clustered around language proficiency, divergent work styles, unclear expectations and uneven effort, factors that are often labeled as "cultural" but are more accurately theorized as process and logistics mechanisms. This implies that future GVT theory and research should model cultural effects through specific interactional pathways (e.g. communication clarity, norm formation and accountability practices) rather than treating national cultural distance as a stand-alone causal force.

Many of the difficulties traditionally attributed to cultural differences, such as miscommunication, disengagement or coordination breakdowns, were more accurately explained by behavioral, circumstantial or logistical factors, including language barriers, divergent work styles and differences in professional norms. These perceptions highlight the centrality of communication and suggest that structural challenges often feel more manageable when teams adopt adaptive strategies, informal leadership or shared responsibility. The findings suggest that successful collaboration depends on a constellation of factors, including openness to diversity, adaptability and interpersonal sensitivity, rather than cultural similarity or formal structure alone.

This study also adds boundary-condition evidence relevant to contemporary global virtual work. In our context, most participants were early-career and technologically fluent, and their reflections suggest that technology barriers were less salient than commonly assumed. We treat this as a plausible contextual explanation rather than a tested mechanism, and we encourage future work to explicitly compare cohorts differing in work experience and digital fluency to assess when and for whom cultural and technological barriers become more disruptive.

5.6 Practical implications

This study offers several actionable implications for organizations and educators designing and supporting GVTs. Across respondents' reflections, challenges were less often attributed to national cultural differences *per se* and more frequently linked to proximal, day-to-day coordination and communication processes. Accordingly, managerial interventions may be most effective when they target team processes rather than treating "culture" as the primary obstacle.

First, organizations should prioritize communication capability over technology provision alone. Participants consistently emphasized clarity, responsiveness and the ability to manage ambiguity across synchronous and asynchronous channels. Training should, therefore, focus on communication routines, expectation-setting and effective use of collaboration platforms in context, rather than assuming tools will solve coordination problems.

Second, early relationship-building remains critical in short-term virtual collaborations. Respondents highlighted the value of informal check-ins and non-task interaction for developing swift trust and cohesion early in the project lifecycle. Simple practices such as brief introductory meetings or peer mentoring can humanize remote collaboration and reduce disengagement.

Third, teams benefit from flexible, distributed leadership and clear accountability. Participants identified uneven effort and breakdowns in coordination as persistent challenges, underscoring the importance of shared responsibility, visible task ownership and informal leadership behaviors that emerge within the team. Coaching or light-touch facilitation may help teams remain self-directed while preventing free-riding and unresolved conflict.

Finally, managers should interpret many “cultural” difficulties through specific mechanisms such as language proficiency, divergent work norms and communication breakdowns. Addressing these directly through explicit norms, inclusive communication practices and adaptive coordination strategies may be more productive than relying on broad cultural similarity or cultural stereotyping.

Together, these implications suggest that effective GVT support depends less on reducing cultural distance and more on strengthening communication, accountability and interpersonal adaptability within digitally mediated collaboration.

5.7 Limitations and future research

While this study offers valuable insights into the functioning of GVTs, several limitations should be acknowledged, each of which opens opportunities for future research. Because data were collected via an end-of-project survey that included open-ended reflections, responses reflect retrospective accounts rather than experiences as they unfolded. Post-project reflections are subject to recall bias and outcome rationalization, as participants may reinterpret earlier challenges in light of perceived team performance or outcomes. First, although methodologically sound, the data were collected through retrospective self-report surveys, which may introduce biases (e.g. social desirability and interpretation bias). Retrospective self-reports may reflect outcome-based sensemaking. To mitigate these risks, the instrument was developed and reviewed in multiple rounds to ensure clarity, validity and reliability. Because the survey was embedded in a graded course context, course incentives may have shaped how participants framed their responses, potentially encouraging more coherent or positively aligned narratives of the experience. The survey was administered anonymously and included a variety of question types (e.g. Likert and sliding scales, short-answer and open-ended items) to yield context-rich insights. Accordingly, we do not claim to identify causal mechanisms linking specific team processes to perceived outcomes. Rather, our findings represent participants’ interpretations of what mattered after project completion. While self-reporting is appropriate for capturing personal reflections, future studies incorporating observational methods or pre- and post-project assessments would strengthen claims of developmental change.

Although participants reported using various digital tools during collaboration, the data did not capture how these tools were used (e.g. frequency and purpose), limiting insights into media richness. Future studies should explore this dimension where the research context allows.

The sample was drawn from the X-Culture global virtual collaboration project, which, as a university-based setting, differs from corporate GVTs in important respects and should be considered a form of convenience student sample. As such, generalizability beyond this context must be interpreted with appropriate caution. The X-Culture environment indeed mitigates several common limitations of student-based research, such as the facts that

participants worked in fully international, geographically dispersed virtual teams on real client-sponsored consulting projects that required sustained coordination over multiple months and teams faced authentic challenges typical of workplace GVTs, including asynchronous collaboration across time zones, language barriers, diverse work norms and reliance on widely used digital communication platforms. Importantly, participation carried substantial incentives and accountability. The project accounted for a major component of the course grade, and strong performance was associated with professional outcomes, including certificates, letters of recommendation, symposium invitations and, in some cases, internship or job opportunities. Thus, rather than constituting a low-stakes classroom simulation, the setting represents a high-engagement form of early-career global virtual collaboration.

Nevertheless, the threat to the generalizability of the findings remains. The sample comprises young, technologically fluent participants (average age 23 years), which may shape the salience of certain challenges in virtual teamwork. Although respondents represented 25 countries, a sizable proportion came from the USA and other WEIRD societies, which may further limit generalizability (Arnett, 2008; Henrich *et al.*, 2010). Nevertheless, the platform provides a rare opportunity to study a relatively large number of culturally diverse teams working under comparable conditions, a level of access and standardization that is difficult to achieve in organizational field settings. Future research across a broader range of organizational and cultural contexts would be valuable for extending and validating these findings.

Future studies are also encouraged to explore the distinct experiences of digital natives in GVTs, particularly how their technological fluency and generational values influence collaboration. This study did not include pre- and post-assessments for Cultural Intelligence or competencies such as Cultural Agility. Although participants reported perceived growth, the absence of longitudinal data limits the ability to confirm measurable development over time. Future research should address this gap by incorporating longitudinal assessments and behavioral data to deepen understanding of how these competencies evolve in GVT contexts.

Also, our findings should be interpreted as reflecting the perceptions and experiences of survey respondents rather than as population-level estimates of the prevalence or severity of cultural challenges across all participants in GVTs. The data are based on voluntary self-reports collected at the end of the project. As with most post-project survey designs, some degree of self-selection and nonresponse bias cannot be entirely ruled out, as individuals who chose not to participate may have differed systematically in their experiences. We, therefore, caution against overgeneralizing the magnitude of the observed patterns and encourage future research to replicate these findings using designs that further reduce nonresponse concerns, such as longitudinal data collection or experience-based sampling during the collaboration process.

6. Conclusion

This study contributes to the GVT literature stream by offering empirical insights into how anticipated challenges align with, or diverge from, participants' reported project experiences. Participants' reported experiences suggest a more nuanced picture than the assumption that cultural differences are the primary barrier to GVT effectiveness. Instead, they highlight the central role of communication, coordination and individual adaptability in shaping team outcomes as experienced in practice. While structural challenges such as time zone differences and free-riding persist, they are often manageable through proactive team processes, informal leadership and mutual support. Participants reported perceived growth in cross-cultural communication, collaboration and related skills, reflecting how

they interpreted the learning value of their GVT experience. These perceptions were frequently reported in our sample, which was mostly composed of younger participants likely familiar with digital tools. However, we did not test whether “digital nativeness” was associated with differences in perceived cultural distance effects. This remains an opportunity for future research.

Theoretically, this study calls for the continued development of more nuanced understandings of culture in virtual teamwork, moving beyond deterministic models and recognizing the interplay among individual, contextual and technological factors. In practice, it offers guidance to organizations seeking to design and support effective GVTs in an increasingly digital and globalized world. GVTs can transcend anticipated barriers and become powerful engines of innovation, learning and global competence. By reframing cultural challenges as opportunities for growth and emphasizing the human dimensions of virtual teamwork, especially communication, trust and adaptability, this research contributes to a more pragmatic and hopeful vision of international collaboration in the digital age.

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Appendix 1

Table A1. Demographic characteristics of survey respondents

Variables	Frequency	%
<i>Country of residence (Top five)</i>		
The USA	52	64.2
Taiwan	3	3.7
India	3	3.7
Ghana	2	2.5
Germany	2	2.5
Other (12 countries)	19	23.4
<i>Country of origin (Top five)</i>		
American (incl. "United States")	33	40.7
German	5	6.2
French	4	4.9
Ghanaian	4	4.9
Taiwanese	4	4.9
Other (20 origins)	31	38.3
<i>Gender</i>		
Female	44	54.3
Male	35	43.2
Prefer not to answer / other	2	2.5
<i>Age</i>		
Under 20 years	5	6.2
21–30 years	61	75.3
31–40 years	10	12.3
41–50 years	3	3.7
51+ years	2	2.5
Source(s): Authors' own work		

Appendix 2. Survey instrument

Gender

Female

Male

Not listed:

Prefer not to answer

Please note your role.

Your age:

What is your nationality?

Where do you live (country)?

(continued)

When working in your Global Virtual Team (GVT) what communication tools did you use?

	Yes	No
Instant messenger (such as WhatsApp, groupme, WeChat)	☐	☐
Video conferencing (i.e., zoom, google meet, teams)	☐	☐
Email	☐	☐
Project Management (i.e., slack, trello)	☐	☐
Document sharing (i.e., google docs, dropbox)	☐	☐

Overall, was your experience positive or negative?

Did you face challenges due to different time zones? Please explain your experience with time zone dispersion/variables. This can be a few words or as much as you would like to write.

Were there any instances of free-riding? Please explain your experience with free riding. This can be a few words or as much as you would like to write.

Do you feel “cultural differences” impacted your work as a GVT?

Yes

No

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If yes, would you describe how "cultural differences" impacted your work as a GVT? This can be a few words or as much as you would like to write.

On a scale of 1 to 5, how important do you think:

	1 (not important)	2	3	4	5 (very important)
having a leader is on GVT?	☐	☐	☐	☐	☐
communication is GVT?	☐	☐	☐	☐	☐
language proficiency is on a GVT?	☐	☐	☐	☐	☐
a team charter is for a GVT?	☐	☐	☐	☐	☐

Did you develop connections with your GV teammates (one or more persons) beyond the main task?

Yes

No

In case of conflict on your GVT, do you tend to wait for it to resolve, or take action sooner?

I typically address it right away

Eventually but usually I wait a bit for it to work out

I really don't like to deal with conflicts so I tend to just wait for others to address it, or work around it as best I can

Did participating in a multicultural virtual project improve your cultural intelligence?

Yes, definitely

Yes, somewhat

No

Did participating in a multicultural virtual project improve your communication skills?

Yes, definitely

Yes, somewhat

No

What do you think makes a GVT project successful? This can be a few words or as much as you would like to write.

Do you think it could benefit your future career? Do you think it prepared you to work in a multicultural environment in the future? This can be a few words or as much as you would like to write.

What have you learned from participating on a GVT? This can be a few words or as much as you would like to write.

Anything else you would like to add or ask? General comments?

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Source: Authors' own work

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