



Crossing digital frontiers with cultural intelligence - a new paradigm for project managers

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ARTICLE INFO

Keywords:

Cultural intelligence
International project management
Global project management
Global virtual teams
Cross-cultural competencies
Cross-cultural capabilities
Cultural competencies
Multiculturalism
Cross-culturalism
Pandemic
COVID-19

ABSTRACT

The evolution of the international business environment during the past twenty years due to globalization and the recent pandemic determined an increase in international projects requiring new organizational and individual capabilities to ensure project success. Cross-cultural competencies have been analyzed within the cross-cultural management field and organizational behavioral studies, with limited research available in the international project management field.

Through a comprehensive literature review, the current research outlines the gap within the project management domain concerning the need triggered by the pandemic to acquire cross-cultural and digital abilities among project professionals. We disclose how the existent globalized virtual environment differs from the new one triggered by the pandemic due to the forced shift to the digital setting with a strong impact on in-person interactions, verbal and non-verbal communication.

The originality of this work resides in the development of a novel project professional ability framework, including digital and cross-cultural components that emerged during the pandemic. Secondly, we propose the application of the identified cross-cultural and digital abilities within the project process group of the life cycle based on their scope and outputs.

1. Introduction

1.1. The context

In an increasingly globalized world, international projects are becoming commonplace, characterized by multicultural teams and intricate digital technologies. These elements pose considerable challenges to project managers who grapple with cultural, religious, linguistic, and mindset variations, along with differences in political and legislative systems (Binder, 2016; Chua et al., 2012; Oertig & Buergi, 2006; Orr, 2005; Panina, 2021). The COVID-19 pandemic added another layer of complexity, forcing a rapid shift to digital and remote working and accentuating issues of trust, role clarity, communication, and collaboration (Bartik et al., 2020; Coenen & Kok, 2014; Harrison & Klein, 2007; Klein & Todesco, 2021; Liguori & Winkler, 2020; Mangla, 2021; Newman & Ford, 2021). Consequently, the importance of addressing these challenges cannot be overstated, particularly in this era

of profound change and digital transformation.

Existing research offers extensive insights into multiculturalism and remote work within international business and project management (Dulebohn & Hoch, 2017; Konanahalli et al., 2014; Pheng & Leong, 2000; Presbitero, 2019, 2020; A. 2021; Alfred Presbitero & Lemuel S. Toledano, 2018a, 2018b; Shokef & Erez, 2015). However, there is a notable gap in understanding the interplay between cultural and digital abilities in projects, particularly where effective communication, leadership, and collaboration tools are critical. This knowledge gap has significant implications for project performance and management, particularly as the landscape of work continues to evolve rapidly due to factors emerged during pandemic.

Addressing this gap is crucial because it would provide valuable insights into how project management can adapt to this evolving digital and multicultural environment, fostering better project outcomes and more robust and resilient project teams. We aim to bridge this gap by exploring the abilities required for project professionals to navigate this

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new landscape. We utilize Cultural Intelligence (CQ) theories (Livermore, 2009; Livermore & Soon, 2015; Van Dyne et al., 2010) to understand how individuals can enhance their cross-cultural abilities, thereby improving team performance and mitigating project risks in these complex digital environments.

To refine readability and bring a clearer understanding of the terminology adopted, we adhere to Livermore’s model, which characterizes competencies as a sophisticated level of capabilities. Additionally, we employ the term ‘abilities’ in alignment with the abilities model proposed by Pennetta et al. (2023), using it as a broad reference to both capabilities and competencies. Academic researchers suggest that abilities are derived from knowledge acquired via training courses and educational programs, which are categorized as skills. When these skills are applied within an industry context - such as marketing, management, manufacturing, or robotics - they evolve into capabilities. Depending on their level of utilization - whether low, intermediate, or high - these capabilities can subsequently be elevated to competencies.

1.2. Research aim

While the concept of working remotely in a multicultural setting has been explored in international business and management fields, there is a gap in understanding the effects of diversity in projects characterized by high levels of multiculturalism and digital technology reliance. This research aims to address this gap by investigating the following research questions.

RQ1: Which abilities are necessary for project managers to deliver international projects in the new digital work environment that emerged during the pandemic?

RQ2: How are these abilities connected to the process groups of the project life cycle?

To answer these research questions, we apply cultural intelligence (CQ) theories and models to the international project management domain and project life cycle, adopting the Livermore et al. (2012) approach which includes aspects related to the awareness of cultural diversity but also behavioral strategies for individuals to improve their effectiveness during cross-cultural interactions. CQ includes knowledge about individuals’ identities, differences, biases, global issues, and opposing values. CQ theories show that individuals such as leaders and managers can be extremely knowledgeable due to their experiences but still hold a low level of CQ. However, managers and leaders can implement Livermore’s CQ theory to overcome their lack of knowledge about diversity (Ang et al., 2020; Austin, 2006; Earley & Ang, 2003; Groves & Feyherm, 2011). This being because the model goes beyond cultural awareness and any notion of national culture, also addressing conscious and unconscious bias to overcome stereotypes when evaluating every situation (Livermore, 2011, 2022; Livermore & Soon, 2015).

Livermore (2009) proposes four types of capabilities needed by individuals to measure their level of CQ, including CQ drive (motivation to learn and respond to different cultures), CQ knowledge (awareness of differences in cultural aspects and understanding of their impact), CQ strategy (ability to apply cultural awareness effectively in a multicultural setting), and CQ action (capability to adapt and use an appropriate behavior when responding to different situations in a multicultural context). Because such capabilities can be measured through a CQ model assessment (Livermore & Van Dyne, 2015), individuals need all four capabilities to become CQ competent. The reason behind choosing Livermore’s model lies in the model itself since it overcomes any form of national culture that was the predominant focus of Hofstede (1984, 1996, 2001) investigations. Livermore (2009) CQ model focuses more on the individual level with the additional value of proposing strategies to overcome diversity in a multicultural context. This model also allows individuals to quickly adapt to the volatile, uncertain, complex, and ambiguous (VUCA) (Rings & Rasinger, 2020) work environment that has emerged from the pandemic and is similar to the context of international projects and global virtual teams.

1.3. Research contribution

The rationale underlying this investigation contributes to knowledge by providing a critical review of the extant literature as it delves in using a constructive approach to identify the gap in the implementation of any CQ models available within the project management life cycle. We provide a summary of the most significant studies about CQ implications in project management and global virtual teams and explore further the impact of the COVID-19 pandemic with a focus on the challenges emerging from this new virtual-intensive and hybrid work environment.

An important contribution of this research is the development of a project professional ability framework that embeds in-demand skills outlining and interrelating some of the key abilities that emerged as a result of the pandemic.

Another important contribution to the project management body of knowledge is the proposal to implement such a set of abilities within the project process groups of the project life cycle (A. PMI, 2021) integrating each process group’s scope and outputs accordingly.

A summary table (Table 1) is provided below to highlight the research gap, significance and contribution.

2. Methodology

The current research investigation is based on an adaptation of Onwuegbuzie and Frels (2016) literature review process known as comprehensive literature review (CLR), in which the process of data collection is gathered by conducting a CLR. The preference over a more traditional systematic literature review (SLR) lies in the nature of the research topic itself, where the use of external resources in addition to white papers broadens the spectrum of the research. The data sources for the CLR comprised three databases, including Scopus, ProQuest and EBSCO, within about a twenty-year interval range, from 2000 to 2022. This range is broad enough to warrant the analysis of past and present trends within the project management domain, observing the evolution of the work environment from globalization to the pandemic to justify the paradigm shift.

The research labels selected for data collection were cultural intelligence, international project management, global project, virtual teams, global virtual teams, cross-cultural competencies, cross-cultural capabilities, and cross-cultural skills. These labels were chosen taking into consideration definitions and theories presented by Livermore et al. (2012).

Table 1
Summary table - research importance, gap and contribution.

Research Focus	Research Outcome
Research Importance	The research is important due to the prevalent challenges faced by project professionals in a global, multicultural, and digitized context. The recent pandemic has further accentuated these challenges, making it crucial to understand how project management can adapt to such rapid changes and transformations.
Gap in the extant literature	The existing knowledge gap lies in the understanding of the effects of cultural diversity in projects characterized by high levels of multiculturalism and digital technology reliance. Current research does not fully explore the coexistent relationship between cultural and digital abilities in international projects which plays a significant role for communication, leadership, and collaboration in such complex environments.
The importance to address this gap	Addressing this gap is critical as it could provide insights into fostering better project outcomes and building resilient teams in the evolving digital and multicultural work landscape.
Research contribution	This research proposes the theoretical ability framework for project professionals which embeds cultural and digital abilities which coexist in the lifecycle of international, multicultural and virtual projects to enhance project performance.

As presented in the CLR flowchart in Fig. 1, we followed the classic 7 steps as follows. In Step 1 we explored beliefs and topics within the business and management domain, developing the problem statement on how CQ influences project teams, starting from the scholar's stance and identifying a gap in the literature. In Step 2 we subsequently selected Scopus, Web of Science and Ebsco as research databases for our investigation to warrant enough coverage of the literature. We developed the following query in each database:

"Cultural intelligence" (Title) or "Cross-Cultural Competenc*" (Title) or "Cross-Cultural Capabilit*" (Title) or "Cross-Cultural Skill*" (Title) and "International Project*" (Title) or "Global Project*" (Title) or "Virtual Team*" (Title) or " Global Virtual Team*" (Title) and Management or Business or Behavioral Sciences or Cultural Studies (Web of Science Categories) and Articles or Proceedings Papers (Document Types) and English (Languages)

In Steps 3 and 4 results were first automatically and then manually filtered by title and abstract and exported in ris format for references management. In Step 5 the comprehensive review was also enriched with white and government papers as suggested by the CLR tool which embeds MODES (Onwuegbuzie & Frels, 2016, p. 58). In Step 6 we implemented a robust approach to identify, analyze, and critically summarize relevant literature findings. A cross peer-review approach supported this step. Furthermore, papers were coded with the following labels: CVD – about the COVID-19 impact on the workplace, GVT – related to global virtual teams, IPM – concerning international project management studies, and CQ – for cultural intelligence implications within the management and project management domains. In Step 7 we present the CLR findings and implications for project professionals in the conclusion paragraph with a conceptual framework of competency for modern project professionals outlining the new set of skills required.

Running queries across the three selected databases produced a list of 639 papers which was narrowed down to 263 through automatic filtering considering only peer-reviewed articles within the domain of business, management, cross-cultural management, and behavioral studies. We then manually filtered by title and abstract, reducing the list to 29 research articles considering only papers about the impact of COVID-19 or CQ on project management, virtual teams, and papers of relevance in such topics. In addition, 15 white papers and government reports were included in the last step of this CLR.

This work considers a total of 44 articles summarized in Table 1

(Appendix A) to outline how CQ has been used by leaders, managers, project managers and team members to enable effective communications and interactions, contextualized before and during the COVID-19 pandemic era.

3. Literature review

3.1. The rise of cultural intelligence

Different definitions of culture have been developed over the years, starting with Hall (1976, p. 16) who described culture as characterized by ideas, values, attitudes and patterns of behavior. An important contribution was made by Hofstede (2001, p. 21) who defined culture as, “The collective programming of the mind which distinguishes the members of one group from another.” Hofstede developed dimensions of culture to cluster individuals, namely power distance, individualism vs collectivism, masculinity vs femininity, uncertainty avoidance, long- vs short-term orientation. Hofstede’s perspectives indicate that culture is acquired through generations with the tendency to change with exposure to a different environment or external influences. Fischer et al. (2009, p. 189) confirmed Hofstede’s view and explained that culture exists through interactions amongst individuals in society, adding that culture cannot be considered as part of genetics.

Livermore (2011) expanded and elevated Hofstede’s concept of culture by providing a further four dimensions (being vs doing, universalism vs particularism, neutral vs affective, monochronic vs polychronic) more connected to the individual level and focussing on interactions in the workplace. Livermore, for example, included theories of cultural differences and behavioral sciences which also consider aspects of personalities, and in doing so he transcended Hofstede’s definition of culture based on the dimensions of national cultures. Livermore and Soon (2015) suggested, in fact, that generating stereotypes of groups based on nationalities can produce bias and therefore it is best to assess the cultural component at the individual level which can be influenced by personal traits, experiences, and exposure to other cultures. The idea to focus on the individual level is a crucial pillar for cultural intelligence (CQ) theories since it helps to avoid stereotypes, prejudices, and discriminations due to conscious and unconscious biases.

The concept of CQ was defined two decades ago by Schmidt (Schmidt

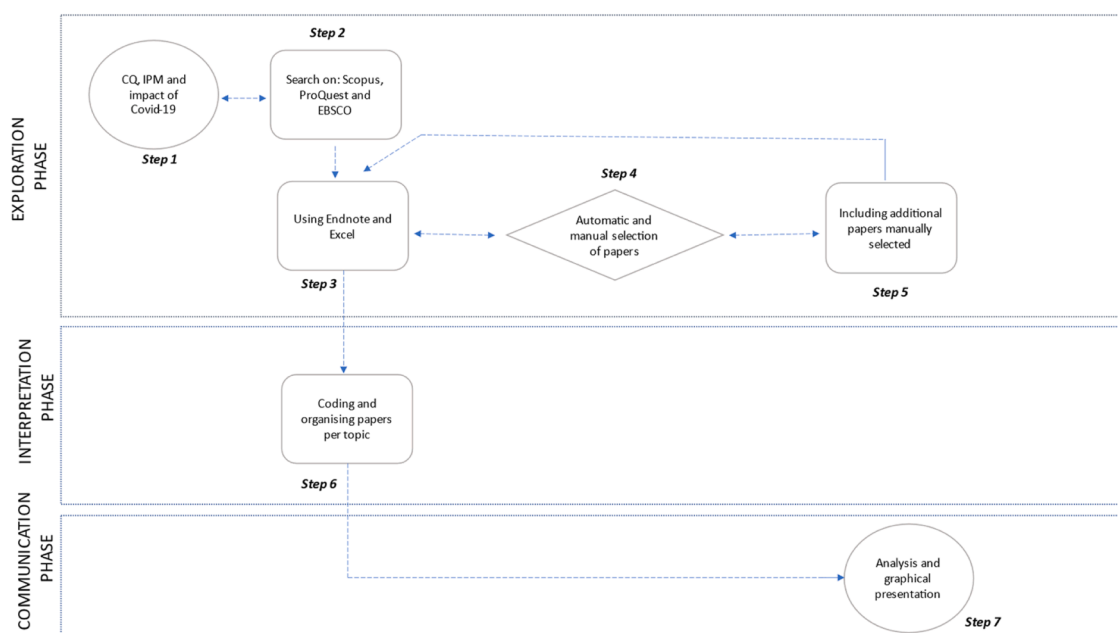


Fig. 1. Adapted CLR flowchart from Onwuegbuzie and Frels, (2016).

& Hunter, 2000) and a few years later other researchers like (Ang et al., 2007) explained how through CQ models it was possible to address globalization issues in intercultural settings. Specifically, researchers explained how CQ theories can enable individuals to comprehend, interpret and behave adequately in multicultural contexts. In fact, in this context, CQ can be interpreted as, a capability of an individual to function effectively in a situation characterized by cultural diversity.

According to Livermore (2009, p. 19), CQ is a multidimensional concept based on the macro from cognitive, metacognitive, motivational, and behavioral factors developed by Ang et al. (2004) and proposed as CQ knowledge (cultural awareness), CQ strategy awareness and ability to plan for multicultural situations, CQ drive (interest, drive, and confidence to adapt to multicultural situations), CQ action (ability to adapt when working and relating intercultural). This concept of CQ is different from other theories because it focuses on behaviors that can be learned through training and experience. Moreover, Livermore's theory recognizes how individual interests (CQ drive) influence leaders or team members in cross-cultural interactions. Acknowledging that each individual is different within the same cultural frame, we explore the CQ model described by Livermore (2009, p. 1) to develop the project professional abilities (PPA) framework, contextualized with the new environment that has emerged as a result of the pandemic to reflect the real skillset required for the current job market. This proposed framework also points out the group of skills required when working in multicultural and virtual contexts, which are key characteristics of international projects.

3.2. Paradigm shift: the role of CQ and digitalization

The recent global challenges forced organizations to shift to a highly virtual-intensive workplace with team members geographically dispersed across borders (Caligiuri et al., 2020; Deloitte, 2020a; Jørgensen et al., 2020; Liguori & Winkler, 2020; Sheppard, 2020; World Economic Forum, 2020). At this stage researchers (de Lucas Ancillo et al., 2021; Klein & Todesco, 2021; Kudyba, 2020; Newman & Ford, 2021) have been enquiring whether the outcomes of previous studies in the fields of international project management and organizational and behavioral science are still relevant. Despite the overall consensus being probably affirmative, that is not entirely true (Caligiuri et al., 2020). There is still, in fact, a fundamental gap concerning the concurrence of digitalization and multiculturalism that generates significant challenges. Although competencies such as cultural awareness, inclusive and digital leadership, in addition to digital literacy, are transposable and applicable to the newly emerged work environment, scholars have addressed those skills in unique and more controlled environments (i.e., digital, multicultural, national or organizational at once).

Kudyba (2020) outlined how the shift from the ordinary workplace based on physical interactions to an online and virtual-only environment is characterized by a massive use of technology that has never been experienced. One fundamental characteristic of this VUCA environment (Rings & Rasinger, 2020) that has developed during the pandemic is, in fact, the coexistence of multiculturalism and digitalization due to the increase of flexible work arrangements with employees scattered across countries. Despite that could not be seen as a novelty for large corporations and multinationals with several subsidiaries across the globe, it is also evident that any organization during the pandemic, independent of size and field of operation, have been forced to implement a significant and onerous digital transformation process throughout the entire business. Organizations had to acquire new digital tools and train employees accordingly, not just to respond to a specific business initiative (i.e., internationalization process, globalization effect, etc.) but to move the entire business operations online as a countermeasure to an unprecedented and unexpected situation.

Evidence of the previously described shift was reported by the simulation model developed by Döhring et al. (2021) as a productivity outlook for the economic growth during the pandemic that is seen as a

catalyst for the digital transformation. Despite the boost in certain sectors, such as e-commerce, information communication technologies (ICT) and some of its subsectors (e.g., streaming, videoconferencing, cloud computing, and data analysis), which can provide a significant increase to nations' GDPs, it is forecast that there will also be an increase in barriers to upskilling employees of other sectors, with a far worse scenario for the workforce of industry sectors in decline (i.e., tourism, travelling, hospitality and so forth). The limitation of Döhring et al. (2021) study is the simulation model itself which is not able to provide or identify a specific set of skills required during the pandemic. Similarly, other scholarly studies propose a highly abstract definition of digital skills. Pre-pandemic research focused mainly on low-level abilities, such as the usage of email, the internet, and the Microsoft Office suite (Claro et al., 2012; Hatlevik et al., 2015). However Digitalization encompasses advance abilities including programming languages data management, Internet of Things (IoT), big data, data analytics (Chen & Dai, 2021), international data policies knowledge, Artificial Intelligence (AI), Augmented and Virtual Reality (AR/VR), robotics, additive and digital manufacturing, cyber security, among others (Lahmann, 2018; Morandini et al., 2020). In the project management domain, this extends to the application of AR/VR and IoT technologies to Building Information Modeling (BIM) (Marnewick 2022). A case in point is the Cross River Rail project in Brisbane, Australia, where due to pandemic-induced challenges, the project team relied heavily on digital tools such as Slack, MS Project Online, Teams or Zoom for communication, IoT, robotics, AI, and data analytics for progress monitoring (Newton, 2022). IoT sensors and UAVs were utilized to collect data, and an additional AR/VR layer was added to the BIM, transforming the engagement model for experts and the community, enabling interactive project process monitoring, and visualizing the final outcome before completion.

However, to fill the gap of the aforementioned skills, several governments promoted upskilling and reskilling programs as documented in industry and government reports (AISC, 2021; Doroba et al., 2020; RMIT, 2021; TDA, 2020; Wilkie & Edwards, 2021). Those investigations adopted a more pragmatic approach to identify and define these digital skills in demand during the pandemic.

From a management perspective, since the new virtual intensive environment has cut off all the physical interactions, including non-verbal cues, several organizational processes such as auditing, monitoring, and control have been hardened. Newman and Ford (2021) suggest, in fact, adopting five key steps including leadership, role mistrust, miscommunication, and misunderstanding, with organization and team strategies to overcome cultural aspects. Researchers have also provided a thorough list of practical tips to overcome the common challenges encountered when operating in the virtual environment that emerged during the COVID-19 pandemic; however, they fall short in addressing multicultural aspects and competencies from the employee's perspective (AISC, 2021; Almeida et al., 2020; Bartik et al., 2020; Butt et al., 2021; Deloitte, 2020b; Döhring et al., 2021; Doroba et al., 2020; Kaushik & Guleria, 2020; Klein & Todesco, 2021; Koch & Schermuly, 2021; Kudyba, 2020; Liguori & Winkler, 2020; Lund et al., 2021; McKinsey, 2021a; Newman & Ford, 2021; RMIT, 2021; Saputra et al., 2021; Sheppard, 2020; Tawakol & Ibrahim, 2021; World Economic Forum, 2020; Wu, 2021). From this standpoint, one interesting research concerning the cultural intelligence (CQ) role amplified during the pandemic was proposed by Mangla (2021). The author suggests that the four factors (cognitive, metacognitive, motivational and behavioral) of the CQ model developed by Ang and Van Dyne (2008) were the key to addressing virtual team effectiveness through five key indicators: role clarity, performance, collaboration, trust, and virtual communication. The empirical research based on the test hypothesis disclosed the positive influence of CQ on virtual teams' challenges across the five indicators, with a focus on the effectiveness of overcoming the language barriers in the digital environment and minor contributions on the individual digital abilities other than the knowledge and use of

conferencing tools, mail, and the internet.

3.3. CQ in international project management and GVTs

While scholarly literature indicates varied interpretations regarding the distinction between international and global projects (Cleland & Gareis, 2006; Mossolly, 2015), one can highlight that global projects are fundamentally associated with global virtual teams (Anantamula & Thomas, 2010). Both types of projects may profoundly influence the global landscape, yet it is typically the global projects that address macro-level challenges brought about by globalization, encompassing issues that transcend national boundaries (Gardberg & Fombrun, 2006). Such projects often involve multiple nations and target global issues or challenges, including but not limited to climate change, poverty, and pandemics (Binder, 2016; Grisham, 2009).

International projects, on the other hand, can be more focused on two or more countries (Grisham, 2009). They can also be bilateral or multilateral projects between countries (PMI, 2017). The Eurotunnel project, which developed a railway tunnel connecting England and France under the English Channel, as well as the Panama Canal expansion project (van Marrewijk & Smits, 2016), are two examples of international initiatives involving two or more countries, cultures, and perspectives. Such an approach allows for a more comprehensive understanding of the issue and the development of inclusive solutions that take into account the unique challenges and opportunities faced by different countries.

However, with the advent of the pandemic, project complexity was extended to a different level. On one hand, the presence of international stakeholders required project managers to have a fundamental understanding of the role of culture and how behaviors, language, traditions, norms, beliefs, and values impact project relations. On the other, they now needed to have the knowledge and skills to properly use digital tools such as business information modeling, project and business management platforms and implement technologies such as artificial intelligence, machine learning, augmented and virtual reality, and internet of things (Lahmann, 2018; Marnewick & Marnewick, 2021, 2022; Newton, 2022). The coexistence of the intertwined virtual and multicultural components introduced new challenges at each stage of the project life cycle which need to be investigated.

International projects are characterized by more than one layer of complexity in comparison to local projects because they often entail a multicultural and virtual environment simultaneously. Hence, people working on such projects face challenges of working in a highly digitalized environment where physical interactions are limited and potential additional difficulties arise from interacting within non-culturally homogenous workgroups. Brünemann (2013), for example, outlined that project managers are somewhat recurrently involved in a global environment, pointing out that multiculturalism can manifest both domestically and internationally. Project managers can manage a diverse team of members who are delivering activities within national borders, or the project can be part of a larger initiative spanning different countries. In any of these cases, project managers need to address cultural aspects which can be country related but more importantly related at a personal level. On the latter, Binder (2016) asserted that every team member has their own national identity (culture) which brings diversity and then further challenges to such projects. Although national and organizational culture may have an impact on some projects, in this study, we also acknowledge that with the advent of hyper-globalization (Wright, 2022), the concept of national culture has evolved due to migration and the spread of technology which allows the integration of cultures and societies (Kuttner, 2022; Livermore, 2022). Therefore, the focus of this research is on the investigation of cross-cultural abilities developed at the individual level based on the dynamic cultural intelligence model developed by Livermore (2009).

A succinct definition of international projects is proposed by Hodgson and Paton, (2016) as a temporary endeavor across countries

characterized by an elevated level of complexity due to geographical, cultural, legal, and time zone differences. Despite being formulated in 2016 as a result of several studies on the effect of globalization on the project management field (Bredillet et al., 2010; Elena, 2010; Grisham, 2010; Köster, 2009; Miller & Lessard, 2001; Pheng & Leong, 2000), this definition remains contemporary.

According to Kiznyte et al. (2015), the effects of culture on project success and its impact on team performance, including collaboration, trust, empathy, communication, responsiveness, cultural adaptation, and group identity, has been raised by scholars mostly operating in organizational and behavioral sciences but not often addressed by researchers and practitioners in the project management discipline (A. Presbitero, 2021). Organizations realize the need to ensure employees are “cross-culturally aware” or multiculturally competent to be more successful in managing business internationally. The scholarly interest has often focused on individuals’ cross-cultural capabilities being suitable for the organization’s boundary-spanning roles. Those roles are indeed filled by individuals with leadership and managerial skills who demonstrate a high level of cross-cultural competency.

3.3.1. Why do project managers and leaders need to develop digital and cross-cultural competencies?

The modern work landscape has catalyzed a transformation in work arrangements and reshaped the dynamics of workgroups. The organizational shift towards a virtual setting has spurred the emergence of global virtual teams, which are inherently dispersed and multicultural. This evolution necessitates a new set of skills to navigate the nuanced challenges of this environment, encapsulating both cross-cultural understanding and digital ability. Leaders of companies within all industries generally understand the value and benefit of a multicultural and diverse environment and leading and managing a diverse workforce effectively can generate competitive advantage (Moon, 2013; Alfred Presbitero & Lemuel S. Toledano, 2018a, 2018b). Individuals differentiated by mindset, beliefs, actions, and mentality exhibit their cultural attributes through observable (behaviors, facial expressions, dress codes, languages, traditions, practices, eating habits) and unobservable (conscious and unconscious bias, assumptions, attitude, beliefs, morals, ethics, motives) ways.

Project managers in a global virtual environment must pay attention to potential cultural differences, recognizing their effects on team members’ values, attitudes and behaviors (Martinelli et al., 2017). Despite the cultural awareness (Mueller, 2014), global project managers should be culturally attentive in managing teams, opting for good communication, respect, flexibility and the ability to compromise when required (Ranf, 2010).

Previous studies from Judy and d’Amico (1997) and Earley and Ang (2003) evidenced how the increasing competition due to globalization led to a change in workforce demographics. Their research then turned towards the cross-cultural effects and impact on the workplace. The growing demand for professional mobility led by the rise of multinationals has resulted in workgroups with different ethnicities, cultural backgrounds, attitudes, beliefs, values, and languages (Harrison & Klein, 2007; Hays-Thomas, 2004; Judy & d’Amico, 1997). The phenomenon of multiculturalism started occurring in the 1960s in Western societies, such as Canada and the US (Chua et al., 2012; Hero, 2010). The nature of architectural, engineering and construction (AEC) professional services delivered by advanced and industrialized countries facilitated the migration of professionals (i.e., consultants, managers, engineers, and architects) to transfer knowledge and technical expertise (Carrillo, 1994) and manage operations in foreign countries (Dikmen Toker & Birgonul, 2002).

The diversity represented by multiculturalism emerges when organizations conduct business beyond national borders (i.e., international projects, see (Konanahalli et al., 2014)) and when staff members interact with other team members of different nationalities. But cultural diversity also emerges when firms expatriate professionals for the short to

long term and/or when hiring a local workforce in the host country (i.e., internationalization, see (Bell & Young, 1998; Oviatt & McDougall, 2005)). Because organizations can either employ a local foreign workforce or expatriate their professionals for a certain amount of time or even permanently in host countries, it is critical to understand how to manage cultural diversity and how cross-cultural competencies can be learnt (Parboteeah et al., 2015). Speaking a different language and holding a different mindset because of diverse values and beliefs significantly affects people's interactions, communications, and decision-making. This diversity can be seen as a risk if not embraced (Freedman & Katz, 2007) and may threaten project scope because of miscommunication or loss of information due to misinterpreting behavioral aspects connected to different nationalities, heritages, cultures, religions, or political and legislative systems (Chua et al., 2012; Miller & Lessard, 2001; Orr, 2005; Young, 2013).

Multiculturalism assumes a critical stance in international projects. By collaborating with people from diverse cultures and backgrounds, international projects can gain a deeper understanding of the unique difficulties and opportunities of the nations and territories in which they operate (Mesly et al., 2013; Wang et al., 2016). This can result in more efficient and lasting solutions, as well as stronger connections and partnerships between nations.

Managing distance and rethinking boundaries have been the primary focus of many international business research investigations due to recent global challenges (Caligiuri et al., 2020), along with defining a new normal workplace which is heavily reliant on digital technologies and contains other new challenges (Furumo et al., 2012; Mangla, 2021). Working from home or in different countries are not completely new concepts in the management domain (A. Presbitero, 2021) which is driven by multinationals and large enterprises with a high degree of digitalization (Bouncken et al., 2019; Nadkarni & Prügl, 2020; Rubino et al., 2020). These types of work arrangements were promoted via virtual teams (VTs), classified as geographically dispersed workgroups which rely heavily on digital tools and platforms to communicate and coordinate business activities effectively (Jarvenpaa & Leidner, 1999). These VTs are either called global (GVTs) (Gunasekare, 2015; Luo et al., 2012; Mattarelli et al., 2017; A. Presbitero, 2021; Alfred Presbitero & Lemuel S Toledano, 2018), transnational (Earley & Mosakowski, 2000; Lagerström & Andersson, 2003), multicultural or multinational (Connaughton & Shuffler, 2007) when made up of culturally diverse members geographically distributed.

The recent paradigm shift from analogic to digital and then from in-person to fully virtual (Liguori & Winkler, 2020), resulting in the intensification of multiculturally dispersed teams which represent the "new normal" workplace (Newman & Ford, 2021). The acceleration of digitalization is critical now more than ever, for responding to ongoing global challenges. Digital technologies and tools become the underlying structure or "hardware" that allow organizations to continue working in novel context. Companies have increased the use of technology to allow interconnection and intercommunication across the mix of workplaces (working from home, hybrid working arrangements). The digital transformation is deeper than it looks because it also includes external stakeholders such as vendors, distributors, contractors, regulators, policymakers, partners, government agencies and clients, which in turn must possess similar technology to communicate, share and exchange information accordingly. Working from home and in different countries implies the massive use of digital technology and extensive knowledge of digital tools. However, working in heavily digitalized environments such as virtual or global teams comes with challenges. The technology adopted must be user-friendly, effective, efficient, and secure, following organizational policy requirements (Lewicki, 2018; Morrone et al., 2020; Payette et al., 2015).

One of the major challenges that digitalization exposes is overcoming cultural diversity. Although team members may speak the same language, communication is also affected by different values, attitudes, and beliefs in the context of today's VUCA pandemic environment (Rings &

Rasinger, 2020). GVTs rely on digital technologies for communication and interaction but because team members are geographically dispersed and culturally diverse, cultural differences are still a major concern for such kinds of workgroups. Modern technology provides communication platforms that allow the interconnection between team members that are geographically distributed in different time zones. However, digital technologies and individual digital capabilities cannot overcome cultural differences in terms of social norms, languages, and beliefs affecting individual behavior, attitudes, communication, leadership styles, participation, role expectations, and pace of decision-making.

Kudyba (2020) discloses some limitations when working in a digitally accelerated environment during the pandemic, including i) the curtailed opportunities for spontaneous collaborations with repercussions for innovative and creative initiatives, ii) a sense of team disconnection with apathy and overall low morale of team groups, iii) limited knowledge transfer due to digital tool limitation and physical interaction, iv) increased stress due to longer work hours in the new forced digital-enabled workplace, and v) limited ability to audit business performance with digital tools. In addition, Szewc (2013) and Ghenni et al. (2016) outlined that digital tools cannot reproduce, mimic or interpret body language and the majority of non-verbal cues, for example, voice modulation and hand gestures are hard to capture or even notice. That can create the potential for misunderstandings and miscommunications and an overall unstable work environment (Ayoko et al., 2012).

More recently, Feitosa and Salas (2020) questioned the validity of previous research outcomes of working in VTs with evidence that the recent pandemic has added another level of complexity. According to their investigation, trust has become more challenging since today's VTs have a heightened level of virtuality. Digital tools are the only means for communicating and keeping businesses running, hence monitoring trust has become even more important than building it. Researchers suggest that new indicators need to be considered because of the heavy virtual environment, such as team members' responsiveness, and discrediting or ignoring co-workers' messages. Those may be signs of mistrust. Therefore, we suggest an active auditing process should be put in place, reinforced by communications policies to raise employees' awareness about, for example, respond to queries within 48 h. Feitosa and Salas (2020) outlined other takeaways including a focus on process gain, fostering inclusion, and auditing teamwork and team performance frequently. Accordingly, managers and leaders need to acquire a new set of skills to promote productivity and innovation during disruptive times, with abilities to understand and adapt to any differences in a humane way.

Studies on the leadership of multicultural teams (Abudi, 2012; Furumo et al., 2012; Lepsinger & DeRosa, 2010) have evidenced the important role played by leaders in coordinating, managing activities, and establishing role clarity and trust amongst team members through a mix of soft and technical skills. Caligiuri et al. (2020) provided a fresh and novel perspective on the challenges faced by newly generated multinational distant teams due to travel bans and reduced international mobility in response to the recent pandemic. Researchers have emphasized that managers and leaders operating in such disruptive environments need to acquire cross-cultural skills to remain open-minded, and cognitively and behaviorally attentive in an unfamiliar, uncertain, and distressing environment (Caligiuri et al., 2020).

With regard to cultural implications in project management, we found several research studies which examined the effect of the globalization process (i.e., international projects and global projects, see (Alvarez-Dionisi et al., 2016; Cleland & Gareis, 2006; Grisham, 2010; Köster, 2009, 2010; Niazi et al., 2016)). However, only a few have investigated the role of cultural intelligence, or the project manager's cross-cultural skillset, therefore confirming a gap in the literature (Aaltonen, 2010; Bredillet et al., 2010; Chiesa, 2000; Henderson et al., 2016, 2018; Mansoor, 2019; Ochieng & Price, 2010; Pheng & Leong, 2000).

Within the international project management domain, [Aaltonen and Kujala \(2010\)](#) investigated the influence of external stakeholders' behaviors providing significant contribution in terms of strategies to influence them for project delivery success. Despite the cross-cultural component being somewhat included through the behavioral factor ([Ang & Van Dyne, 2008](#)), it does not focus on the other cultural intelligence (CQ) factors – cognitive and metacognitive. These CQ factors are essential to become culturally competent and ready to apply such knowledge through behavioral strategies for effective multicultural interactions. Furthermore, the motivational factor was not included as well as the drivers to build the motivation for a robust cross-cultural strategy.

From the cultural perspective, [Chipulu et al. \(2016\)](#) conducted an interesting quantitative investigation on the effect of [Hofstede \(2001\)](#) cultural dimensions to define more in-demand project management skills at that time. Through the extrapolation of keywords from job advertisements connected to the six dimensions, the authors were able to identify which of the six dimensions was more influential for project professionals to respond to job market needs. Despite the title of the paper suggesting the building of CQ or the identification of cross-cultural competencies for project managers through job advertisement analysis, the application of Hofstede's theory based on the concept of national cultures does not provide the ability to function across cultures. Therefore, although [Chipulu et al. \(2016\)](#) provided insights on cultural denominators, they did not suggest any models to operate across cultures ([Ang & Van Dyne, 2008](#); [Livermore, 2009](#)). From a similar standpoint, [Bredillet et al. \(2010\)](#) investigated project management deployment in 74 countries through [Hofstede \(2001\)](#) cultural dimensions, providing an excellent contribution to the project management domain from national low to high level GDP and Hofstede's cultural dimensions. Similar to [Chipulu et al. \(2016\)](#) investigation, [Bredillet et al. \(2010\)](#) provided very minor cross-cultural contributions concerning the project management sector as scholars relied on Hofstede's national six cultural dimensions only.

The application of [Livermore \(2011\)](#) and [Van Dyne et al. \(2010\)](#) cultural intelligence models to international project management practices is limited to a conceptual investigation provided by [Kiznyte et al.](#)

(2015). The authors proposed a significant advancement in the project management field by suggesting an implementation of [Livermore \(2009\)](#) CQ four factors model. Although [Kiznyte et al. \(2015\)](#) suggested which and how to implement such factors ([Kiznyte et al., 2015](#)), they did not disclose how a CQ model can be framed within the project life cycle. Essentially, the authors curtailed their reasoning to the presentation of Van Dyne and Livermore's four factors model without any reference to specific project process groups or stages. Alternatively, [Henderson et al. \(2018\)](#) proposed a quantitative investigation into how global virtual teams' CQ moderates the positive relationship between communication norm alignment, role clarity, and interpersonal trust in global manufacturing projects. Despite the authors empirically demonstrating that global virtual teams (GVTs) need to develop proper communication skills, they also need to be motivated to do so to be effective and efficient in a multicultural environment. Findings provided by this investigation and other similar studies are not limited by a strict virtual environment; in fact, face-to-face communication still happened once a month (47.2 %), several times a week (12.4 %) and even several times a day (9.6 %).

4. Discussion and implications

The constructive critical analysis of the extant literature on the effect of cultural intelligence and the challenges arisen with the pandemic on international project management and GVTs enabled us to develop a new framework of abilities for project professionals of the 21st century ([Fig. 2](#)). This framework proposes the most influential abilities spread across the four components in demand by the industry, as documented in government and industry reports.

This proposed framework is made up of the block of personal or soft abilities and the block of technical or hard abilities. The spread of the cross-cultural and digital components across these two blocks shows the impact of the evolving landscape on international project management and reveals the novel contribution proposed in this study. Unlike the IPMA competence baseline ([Coesmans et al., 2015](#); [Vukomanović et al., 2016](#)) based on domains and on the three areas of competencies (people, perspective, and practice), the proposed Project Professional Ability (PPA) framework explores abilities for project professionals (project and

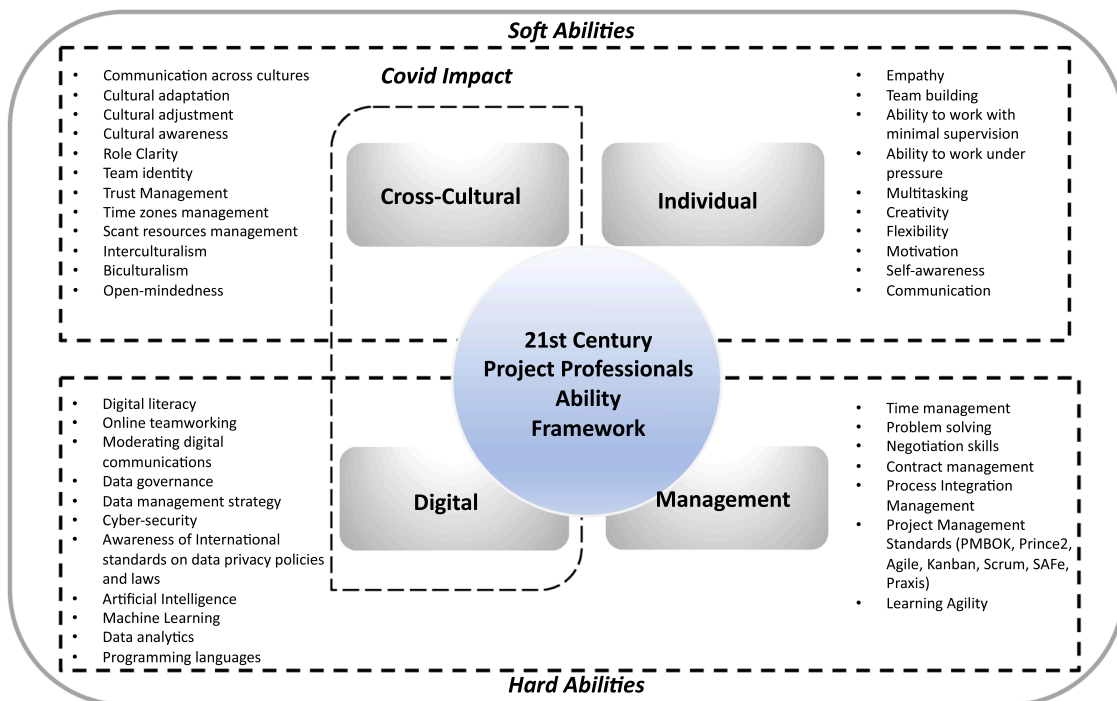


Fig. 2. Proposed Project Professionals Ability Framework for the 21st Century- source authors.

business managers, team leaders, risk and quality specialists, etc.). As a result, additional competencies to the ones presented in the IPMA competence baseline are recommended. Therefore, scholars and professionals may consider the proposed PPA framework as integrative to the IPMA baseline, as it extends the competencies in the people area crucial during the pandemic era, whilst treating the concept of culture at an individual level.

This research further proposes the implementation of the beforehand identified cross-cultural and digital abilities within the project process groups of the project life cycle (PMI, 2017; A, 2021). Table 2 shows the cross-cultural and digital abilities being integrated within the five process groups (initiating, planning, executing, monitoring and controlling, and closing) following each process group's function and outputs. We aim to connect projects' processes to the abilities of project professionals needed to deliver such functions in a multicultural and virtual environment typical of international project management and business

Table 2
Project professionals', leaders', and managers' capabilities in international projects.

Project Process Groups	Project Professional/Leader/Manager Abilities	
	Digital	Cross-Cultural
Initiate	<ul style="list-style-type: none"> Highly skilled with CRM software Relying on digital technologies Disseminating knowledge through digital channels Online meetings 	<ul style="list-style-type: none"> Open-mindedness Adjusting abilities Moderating cross-cultural communication Establishing trust Cultural awareness Interculturalism Biculturalism
Plan	<ul style="list-style-type: none"> Highly skilled with ERP, and PSA software Planning with cloud-based platforms Data governance and privacy knowledgeable Online meetings 	<ul style="list-style-type: none"> Open-mindedness Defining individual roles and duties Defining and promoting the organization/team identity Time management across time zones Strong scheduling abilities of dispersed resources Emotional Intelligence Interculturalism Biculturalism
Execute	<ul style="list-style-type: none"> Highly skilled with ERP, MRP and PSA software Advanced abilities in coordinating dispersed teams Advanced abilities in document management systems Online cross-cultural meetings Attentive to international data standards and data policies Artificial Intelligence Robotics 	<ul style="list-style-type: none"> Open-mindedness Moderating cross-cultural meetings Promoting online collaborations Attentive to individual behaviors Maintaining trust amongst team members Managing stressful situations within global virtual teams across time zones Adjusting abilities Emotional Intelligence Advanced change management abilities across countries Cultural awareness and sensitivity
Monitor & Control	<ul style="list-style-type: none"> Strong auditing abilities Advanced abilities to generate reports withing platforms Online cross-cultural meetings Online reporting Artificial Intelligence 	<ul style="list-style-type: none"> Reinforcing organizational policies to promote team efficiency Emotional Intelligence Monitoring Trust
Close	<ul style="list-style-type: none"> Adapting presentation and communication styles Online cross-cultural meetings 	<ul style="list-style-type: none"> Skilled in synthesizing outputs and outcomes Bicultural and intercultural abilities

initiatives delivered during the pandemic.

The initiation process group is the project's starting point, where the project manager, project sponsor and clients have kick-off meetings to define the project purpose, objectives, outcomes, and deliverables. The outcome of this process is the project charter that must be aligned with the organization's strategy and respects the agreements with stakeholders in addition to the stakeholder register, assumption log and change requests form. Usually, the initiation process group strongly relies on data gathering through face-to-face meetings with other inputs from phone calls and emails. Working in a disruptive environment with limited to no human interaction, project professionals, managers and leaders need to rely on digital tools such as Integrated Project Management Information Systems (IPMIS) with Customer Relationship Management (CRM) and/or Enterprise Resource Planning (ERP) capabilities to identify and categories resources and stakeholders at this stage and to future deal with contractors, suppliers, policy makers, and other stakeholders in the next stages. Moreover, project managers need to be culturally competent to adapt and adjust to different styles of communication when interacting with global stakeholders, holding abilities such as acculturation (Berry, 2005; Ward et al., 2001), interculturalism (Deardorff, 2006, 2011, 2014), and biculturalism to increase success and well-being among individuals (Hong, 2010). Alongside such abilities, CQ Knowledge helps project managers to align with stakeholders' expectations to develop culturally appropriate project plans and strategize communication effectively. It is therefore critical that project organizations 1) align project managers with these abilities in the conceptualization phase of the project, or 2) establish the necessary cross-cultural training to upskill existing project managers who are to be heavily involved in the initiation process group of their projects.

The planning process group foresees the definition of project scope, work breakdown structure (WBS), resource breakdown structure (RBS), budget, and timeline, and develops the cost, quality, schedule, stakeholder, procurement, communication, and risk management plans. To do that, project managers and practitioners must rely on cloud-based platforms and digital tools and strategize how to manage communication effectively in multicultural teams or amongst international stakeholders. Here, CQ Strategy, which involves the ability to apply cultural awareness effectively, can enhance the creation of the communication management plan, fostering open-mindedness, cultural empathy, and emotional stability under pressure. Distress is generated when defining team members' role clarity through duties (Henderson et al., 2016, 2018). Managing trust across teams and stakeholders is important and this ability requires cultural diversity knowledge (CQ Knowledge) usually acquired through real work experience across cultures or training. Furthermore, Interculturalism plays a significant role in the success of the planning process, complementing CQ Strategy (Livermore, 2011; Livermore & Soon, 2015).

The execute stage is where previously mentioned plans and project artefacts are implemented to acquire resources and deploy teams to deliver activities and sub-tasks matching client expectations and quality metrics as much as possible on time and within budget. During the execution process, a significant amount of information is generated and processed through digital tools only, which may generate stress amongst stakeholders and project members. Therefore, communication plays an important role as much as biculturalism and intercultural effectiveness since these abilities can effectively facilitate verbal and non-verbal communication (Hammer et al., 1978; LaFromboise & Rowe, 1983). The executing phase is also labor intensive, and it is often predicted to be a phase where team conflicts and stakeholder communication problems emerge. The communication management plan could, for example, benefit from abilities such as open-mindedness, cultural empathy, and emotional stability to encourage team members to manage internal and external communications when under pressure with effectiveness and efficacy, enabling them to remain calm in stressful situations (Hannigan, 1990). Language proficiency can also play an important role, especially when projects are delivered through joint ventures where

managers, leaders, and project professionals speak the counterpart foreign language fluently (Light et al., 2002; Masgoret & Ward, 2006). Therefore, organizations need to plan ahead of this stage and equip the project team with the necessary cross-cultural competencies that can aid conflict management.

Monitoring and controlling is a reiterative process that crosses every project process group and provides the tools to mitigate or correct any discrepancies from the baseline. At this stage, project professionals need to be resilient when dealing with unexpected changes or requests from stakeholders which can significantly impact the project from a time and budget perspective. Resilience represents the ability of individuals to address stressful situations by adapting the response to the context. Resilience combined with a positive attitude also helps team members approach matters from a different perspective, including the cultural perspective (Omored et al., 2015; Tugade & Fredrickson, 2004).

Closing is the last process group where the handover of products/services to the customer takes place. After a quality check, a final meeting with the client is usually held to demonstrate products/services features following the stipulated quality metrics. Project managers must demonstrate strong cross-cultural communication abilities; therefore, the knowledge of customers' language and culture (values, norms, and beliefs) is extremely important. In this phase, communication also contemplates the ability to renegotiate terms that require emotional management and a positive attitude to adjust and cope with stressful situations (LaFromboise et al., 1993).

Finally, it is worth noting that cultural awareness does not guarantee an effective improvement of communication nor the successful completion of projects; however, what is proposed and proven is that cultural intelligence theories (Ang & Van Dyne, 2015) help individuals and organizations to address such issues (Livermore & Ang, 2016).

5. Implications

In this research, we identified a paradigm shift of abilities required due to the pandemic with theoretical and practical implications. This research links cultural competencies and digital capabilities in a new and novel way to provide a greater understanding of the new context in which project teams operate.

5.1. Theoretical implications

The originality of this work resides in the development of a novel project professional ability framework, including digital and cross-cultural components that emerged during the pandemic. The proposed framework serves as an instrumental blueprint for augmenting the understanding of the required abilities of project professionals. The novel framework can assist with a greater understanding of the various cultural competencies required and the mix that best reflects a productive team. It can also allow the development of new tools for assessing project professional abilities, integrating digital and cross-cultural metrics enriching the field of skills assessment and development. It may also support the redefinition of leadership roles in relation to leading remote and culturally diverse teams.

The utilization of the framework may influence the models used for training and development within organizations, emphasizing the critical need for digital and cross-cultural abilities in modern project management. Consequently, it may reshape the theories of adult learning and professional development.

5.2. Practical implications

The pandemic has forced organizations to operate in a virtual and cross-cultural setting, thus highlighting new challenges for project management. For instance, businesses need to navigate the complexities of global data privacy and protection laws such as the General Data Protection Regulation (GDPR), California Consume Privacy Act (CCPA),

and the Australian Privacy Act (APA). Therefore, the ability to understand and navigate these cross-cultural norms and legal nuances becomes a competitive advantage.

The request of a new group of abilities as evidenced through the analysis of industry and government reports outlines the major role of academia in the development of education material which must consider the skillset dictated by the newly emerged workplace to better match in-demand abilities with the modern job market. The Cross River Rail construction project is an example of how the project management team has had to navigate several challenges arising with the remote working arrangements and supply chain disruptions, while still ensuring the success of the project. Therefore, the implementation and reliance on cloud-based enterprise resource planning, customer relationship management, and Project software automation platforms in addition to artificial intelligence, internet of things, robotics, digital communication and collaboration tools, have been instrumental in helping the team to continue to make progress on the project despite the challenges of the pandemic. Additionally, the development of skills such as adaptability, resilience, and cultural and emotional intelligence has helped the team to manage the stress and uncertainty caused by the pandemic and successfully deliver the project within budget and timelines.

Consequently, education institutions must consider restructuring their management courses with a major focus on digital communication strategies and the necessary soft management skills to be more effective in the virtual business world. Thus, we propose that for such courses, the integration of advanced foundations on programming languages, artificial intelligence, machine learning, cybersecurity, international data privacy policy standards, data management strategies, data analytics, online team working in conjunction with cultural adaptation, cross-cultural communications, scant resource management and leadership styles with more focus on the combination of digital and inclusive leadership could be beneficial. If training is focused on the double cross-cultural and digital ability components, then it can foster trust, respect, and effective teamwork processes in a virtual and highly technology-driven environment, with relevant integration from both the cross-cultural management and cultural intelligence theories to work effectively across cultures.

From a practitioner's perspective, this research suggests the implementation of cross-cultural and digital abilities across the five project process groups. This will help professionals to develop cultural awareness and be more attentive to diversity while also understanding the importance of continuous professional development to sharpen abilities in a specific industry context. In turn, this can aid professionals to become more "employable" in those industry sectors which have seen an increased demand in virtual skills during, and likely after, the pandemic.

6. Limitations

While this research presents substantial insights into the evolution of abilities required for effective project management during and post-pandemic, there are some limitations to consider. Primarily, the focus on international projects and global virtual teams might not capture the full breadth and diversity of project types, team structures, and industries. This focus might limit the overall generalizability of our findings and proposed Project Professional Ability (PPA) framework to different settings. Additionally, various industries might have their unique challenges and requirements that our framework may not fully address.

Secondly, our research methodology relied heavily on secondary data sources, such as literature reviews, government, and industry reports. While these provided a rich source of information, they may not entirely reflect the complexity of real-world scenarios, personal experiences, or unique cultural or organizational contexts. Therefore, the developed ability framework might not be fully universally applicable. Furthermore, due to the rapid advancement in technology and digital tools, there might be specific technical abilities overlooked in this study,

or some might become obsolete in a short period, limiting the longevity of our PPA framework.

7. Future research avenues

From this investigation, an array of potential trajectories for future research emerges. Future studies might also consider focusing on the impact of varying degrees of cultural intelligence among team members on project outcomes. For instance, research could explore whether teams with a higher average level of cultural intelligence outperform those with a broader spread of cultural intelligence levels. Such an investigation could potentially illuminate whether it's more beneficial to have a uniformly high level of cultural intelligence across a team or if a degree of variation can bring about unique advantages.

Another potential area of exploration could be the development of new methods and tools to assess and improve cultural intelligence in virtual teams. This could include the creation of novel training programs or technologies to facilitate cross-cultural communication and collaboration in the digital environment. That represents a current gap in the cultural intelligence field. Furthermore, exploring the efficacy of these programs or tools through longitudinal studies would provide insights into their long-term impact on project success.

Expanding the ambit to include a diverse range of project categories, team structures, industries, and geographic regions could furnish a more comprehensive understanding of the abilities required in the project management domain. This could entail the exploration of case studies across diverse industries and regions to evaluate the efficacy and adaptability of the proposed Project Professional Ability (PPA) framework in these different contexts.

Moreover, the implementation of empirical research methodologies could further validate and refine the proposed framework. Such methodologies could include qualitative research, through interviews or focus groups with project managers and team members, or quantitative research, via surveys or experiments. These methodologies would aid in capturing the complexities and nuances of real-world project management, enhancing the practical relevance of the proposed framework.

Appendix A

Authors	Article Type	Study Type	Coding	Title	Journal	Year
Chipulu	Journal	Empirical	CQ	Building Cultural Intelligence: Insights from Project Management Jobs and Advertisements	Production Planning & Control	2016
Henderson	Journal	Empirical	CQ	Why cultural intelligence matters on global project teams	International Journal of Project Management	2018
Kiznyte	Journal	Conceptual	CQ	Applying cultural intelligence in international project management	PM World Journal	2015
Konanahalli	Journal	Empirical	CQ	Cross-Cultural Intelligence (CQ) - It's impact on British Expatriates on International Construction Projects	International Journal of Managing Projects in Business	2014
Mangla	Journal	Empirical	CQ	Working in a pandemic and post-pandemic period - Cultural Intelligence is the key	International Journal of Cross-cultural Management	2021
Meueller	Journal	Empirical	CQ	A specific knowledge culture: Cultural antecedents for knowledge sharing between project teams	European Management Journal	2014
Ochieng	Journal	Empirical	CQ	Managing cross-cultural communication in multicultural construction project teams: The case of Kenya and UK	International Journal of Project Management	2010
Presbitero	Journal	Empirical	CQ	Foreign language skill, anxiety, cultural intelligence and individual task performance in global virtual teams: A cognitive perspective	Journal of international management	2020
Caligiuri	Journal	Conceptual	CVD	International HRM insights for navigating the COVID-19 pandemic: Implications for future research and practice	Journal of International Business Studies	2020
de Lucas Ancillo	Journal	Conceptual	CVD	Workplace change within the COVID-19 context: a grounded theory approach	Economic Research	2021
Klein	Journal	Conceptual	CVD	COVID-19 crisis and SMEs responses: The role of digital transformation.	Knowledge and Process Management	2021
Kudyba	Journal	Conceptual	CVD	COVID-19 and the Acceleration of Digital Transformation and the Future of Work.	Information Systems Management	2020
Kudyba	Journal	Conceptual	CVD	COVID-19 and the Acceleration of Digital Transformation and the Future of Work	Information Systems Management	2020

(continued on next page)

An intriguing avenue for future research could be to scrutinize the dynamic character of the required abilities, in the context of evolving technologies and ongoing digital transformations. This could lead to the development of a more dynamic and adaptable PPA framework, capable of responding promptly to changes in the project management landscape.

Therefore, longitudinal studies could be pivotal, allowing researchers to observe the application of the PPA framework over an extended timeframe, thereby shedding light on its long-term influence on project outcomes, team dynamics, and organizational performance. Such studies could help to identify potential areas for refinement in the proposed framework and better predict future trends and changes in the field of project management.

8. Conclusion

This research study unlocks the potential of crossing digital frontiers with cultural intelligence—a new paradigm for project managers inspired by changes and challenges of the emerged workplace . Integrating these abilities across project process groups mayd: ensures adaptability and resilience, critical for modern project professionals and leaders. The research underscores the significance of continuous professional development and honing virtual skills. Despite recognized limitations, this fusion of cultural intelligence with digital acumen lays the foundation for future research, framework refinement, and tools development, augmenting cross-cultural collaboration in the digital age. It presents a refreshed perspective in project management, harmonizing the complexities of our time by bridging the gap between the traditional and the virtual.

Declaration of Competing Interest

We wish to confirm that there are no known conflicts of interest associated with this publication and there has been no significant financial support for this work that could have influenced its outcome.

(continued)

Authors	Article Type	Study Type	Coding	Title	Journal	Year
Syriopoulos	Journal	Empirical	CVD	The impact of COVID-19 on entrepreneurship and SMEs	Journal of the International Academy for Case Studies	2020
Coenen	Journal	Empirical	GVT	Workplace flexibility and new product development performance: The role of telework and flexible work schedules	European management journal	2014
Connaughton	Journal	Conceptual	GVT	Multinational and multicultural distributed teams: A review and future agenda	Small Group Research	2007
Dulebohn	Journal	Conceptual	GVT	Virtual teams in organizations	Human Resource Management Review	2017
Earley	Journal	Empirical	GVT	Creating hybrid team cultures: An empirical test of transnational team functioning	Academy of Management journal	2000
Feitosa	Journal	Conceptual	GVT	Today's virtual teams: Adapting lessons learned to the pandemic context	Organizational dynamics	2020
Gunasekare	Journal	Empirical	GVT	Virtual teams in Sri Lankan business process outsourcing companies	Journal of Business & Economic Policy	2015
Mattarelli	Journal	Empirical	GVT	The role of brokers and social identities in the development of capabilities in global virtual teams	Journal of International Management	2017
Presbitero	Journal	Empirical	GVT	Communication accommodation within global virtual team: The influence of cultural intelligence and the impact on interpersonal process effectiveness	Journal of International Management	2021
Presbitero	Journal	Empirical	GVT	Global team members' performance and the roles of cross-cultural training, cultural intelligence, and contact intensity: the case of global teams in IT offshoring sector	International journal of human resource management	2018
Szewc	Journal	Conceptual	GVT	Selected success factors of virtual teams: literature review and suggestions for future research	International Journal of Management and Economics	2013
Aaltonen	Journal	Empirical	IPM	A project lifecycle perspective on stakeholder influence strategies in global projects	Scandinavian Journal of Project Management	2010
Bredillet	Journal	Empirical	IPM	Project management deployment: The role of cultural factors	International Journal of Project Management	2010
Henderson	Journal	Empirical	IPM	The centrality of communication norm alignment, role clarity, and trust in global project teams	International Journal of Project Management	2016
Kiznyte	Journal	Conceptual	IPM	Applying Cultural Intelligence in International Project Management	PM World Journal	2015
Pheng	Journal	Empirical	IPM	Cross-cultural project management for international construction in China	International Journal of Project Management	2000
Wilkie	White Paper	Empirical	CVD	Upskilling for the digital world and preparing for the future of work.		2021
TDA	White Paper	Conceptual	CVD	Critical Role of Blue Tech and Digital Skills in Australia's economic recovery		2020
Lund	White Paper	Empirical	CVD	The future of work after Covid		2021

References

- Aaltonen, K. (2010). Stakeholder management in international projects.
- Aaltonen, K., & Kujala, J. (2010). A project lifecycle perspective on stakeholder influence strategies in global projects. *Scandinavian Journal of Management*, 26(4), 381–397. <https://doi.org/10.1016/j.scaman.2010.09.001>
- Abudi, G. (2012). Best practices for managing and developing virtual project teams.
- AISC. (2021). *Digital Skills: Overview, COVID-19 impact, industry skills needs, internet job postings, case studies*. Australia: Australian industry and skills committee Retrieved from <https://nationalindustryinsights.aisc.net.au/national/digital-skills>.
- Almeida, F., Santos, J. D., & Monteiro, J. A. (2020). The challenges and opportunities in the digitalization of companies in a post-COVID-19 World. *IEEE Engineering Management Review*, 48(3), 97–103.
- Alvarez-Dionisi, L. E., Turner, R., & Mittra, M. (2016). Global project management trends. *International Journal of Information Technology Project Management (IJITPM)*, 7(3), 54–73.
- Anantatmula, V., & Thomas, M. (2010). Managing global projects: A structured approach for better performance. *Project Management Journal*, 41(2), 60–72. <https://doi.org/10.1002/pmj.20168>
- Ang, S., Ng, K.Y., & Rockstuhl, T. (2020). Cultural intelligence.
- Ang, S., & Van Dyne, L. (2008). *Handbook of cultural intelligence: Theory, measurement, and applications*. M. E. Sharpe Incorporated. <http://ebookcentral.proquest.com/lib/qut/detail.action?docID=435232>.
- Ang, S., & Van Dyne, L. (2015). *Handbook of cultural intelligence: Theory, measurement, and applications*. Routledge.
- Ang, S., Van Dyne, L., Koh, C., & Ng, K. (2004). The measurement of cultural intelligence. academy of management meetings symposium on cultural intelligence in the 21st century, New Orleans, LA.
- 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(3), 335–371.
- Austin, A. (2006). Cultural intelligence: A guide to working with people from other cultures. *Leadership & Organization Development Journal*, 27(1), 83–84.
- Ayoko, O. B., Konrad, A. M., & Boyle, M. V. (2012). Online work: Managing conflict and emotions for performance in virtual teams. *European Management Journal*, 30(2), 156–174. <https://doi.org/10.1016/j.emj.2011.10.001>
- Bartik, A.W., Bertrand, M., Cullen, Z.B., Glaeser, E.L., Luca, M., & Stanton, C.T. (2020). *How are small businesses adjusting to COVID-19? Early evidence from a survey*.
- Bell, J., & Young, S. (1998). Towards an integrative framework of the internationalization of the firm. *Internationalization* (pp. 5–28). Springer.
- Berry, J. W. (2005). Acculturation: Living successfully in two cultures. *International journal of intercultural relations*, 29(6), 697–712.
- Binder, J. (2016). *Global project management: Communication, collaboration and management across borders*. Routledge.
- Bouncken, R. B., Kraus, S., & Roig-Tierno, N. (2019). Knowledge- and innovation-based business models for future growth: Digitalized business models and portfolio considerations [Article]. *Review of Managerial Science*. <https://doi.org/10.1007/s11846-019-00366-z>
- Bredillet, C., Yatim, F., & Ruiz, P. (2010). Project management deployment: The role of cultural factors. *International Journal of Project Management*, 28(2), 183–193.
- Brünnemann, K. (2013). The Strategic Importance of Intercultural Competency for Project Managers for the 21st Century. Vienna, Austria.
- Butt, S.A., Misra, S., Anjum, M.W., & Hassan, S.A. (2021). Agile project development issues during COVID-19. International conference on lean and agile software development.
- Caligiuri, P., De Cieri, H., Minbaeva, D., Verbeke, A., & Zimmermann, A. (2020). *International HRM insights for navigating the COVID-19 pandemic: Implications for future research and practice*. Springer (0047-2506).
- Carrillo, P. (1994). Technology transfer: A survey of international construction companies. *Construction Management and Economics*, 12(1), 45–51.
- Chen, L., & Dai, H. (2021). Application of big data technology in cost management and control in construction project. In , 1881. *Journal of Physics: Conference Series*. IOP Publishing, Article 022036.
- Chiesa, V. (2000). Global R&D project management and organization: A taxonomy. *Journal of Product Innovation Management: An international publication of the product development & management association*, 17(5), 341–359.
- Chipulu, M., Ojiako, U., Marshall, A., Williams, T., Neoh, J. G., Mota, C., & Shou, Y. (2016). Building cultural intelligence: Insights from project management job advertisements. *Production planning & control*, 27(3), 133–147. <https://doi.org/10.1080/09537287.2015.1083623>
- Chua, R. Y., 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(2), 116–131.

- Claro, M., Preiss, D. D., San Martín, E., Jara, I., Hinojosa, J. E., Valenzuela, S., Cortes, F., & Nussbaum, M. (2012). Assessment of 21st century ICT skills in Chile: Test design and results from high school level students. *Computers and education*, 59(3), 1042–1053. <https://doi.org/10.1016/j.compedu.2012.04.004>
- Cleland, D. I., & Gareis, R. (2006). *Global project management handbook: Planning, organizing, and controlling international projects*. McGraw-Hill Education.
- Coenen, M., & Kok, R. A. W. (2014). Workplace flexibility and new product development performance: The role of telework and flexible work schedules. *European Management Journal*, 32(4), 564–576. <https://doi.org/10.1016/j.emj.2013.12.003>
- Coesmans, P., Fuster, M., Schreiner, J. G., & Goncalves, M. (2015). Individual competence baselines for project, programme & portfolio management. In I. P. M. Association (Ed.), (v 4.0 ed.): IPMA.
- Connaughton, S. L., & Shuffler, M. (2007). *Multinational and multicultural distributed teams: A review and future agenda*. 38 pp. 387–412). Small group research.
- de Lucas Ancillo, A., del Val Núñez, M. T., & Gavriola, S. G. (2021). Workplace change within the COVID-19 context: A grounded theory approach. *Economic Research-Ekonomska Istraživanja*, 34(1), 2297–2316. <https://doi.org/10.1080/1331677X.2020.1862689>
- Deardorff, D. K. (2006). Identification and assessment of intercultural competence as a student outcome of internationalization. *Journal of studies in international education*, 10(3), 241–266.
- Deardorff, D. K. (2011). Assessing intercultural competence. *New directions for institutional research*, 2011(149), 65.
- Deardorff, D. K. (2014). *Some thoughts on assessing intercultural competence*. Urbana, IL: University of Illinois and Indiana University, National Institute for Learning Outcomes Assessment (NIOA).
- Deloitte. (2020a). *Accelerate digitization to increase resilience* (A global COVID-19 response for legal leaders, Issue).
- Deloitte. (2020b). *Digital transformation through the lens of COVID-19* (A case of acute disruption, Issue).
- Dikmen Toker, I., & Birgonul, M.T. (2002). An investigation of the factors that affect international market entry decisions.
- Döhring, B., Hristov, A., Maier, C., Roeger, W., & Thum-Thysen, A. (2021). COVID-19 acceleration in digitalisation, aggregate productivity growth and the functional income distribution. *International economics and economic policy*, 18(3), 571–604. <https://doi.org/10.1007/s10368-021-00511-8>
- Doroba, H., Mbanugo, T., & Edosio, U. (2020). The relevance of digital skills in the COVID-19 era. In: Africa: Groupe de la Banque Africaine de Development.
- Dulebohn, J. H., & Hoch, J. E. (2017). *Virtual teams in organizations*. Elsevier.
- Earley, C. P., & Mosakowski, E. (2000). Creating hybrid team cultures: An empirical test of transnational team functioning. *Academy of management Journal*, 43(1), 26–49.
- Earley, P.C., & Ang, S. (2003). Cultural intelligence: Individual interactions across cultures.
- Elena, R. D. (2010). Cultural differences in project management. *Annales Universitatis Apulensis: Series Oeconomica*, 12(2), 657.
- Feitosa, J., & Salas, E. (2020). Today's virtual teams: Adapting lessons learned to the pandemic context. *Organizational Dynamics*.
- Fischer, R., Ferreira, M. C., Assmar, E., Redford, P., Harb, C., Glazer, S., Cheng, B.-S., Jiang, D.-Y., Wong, C. C., & Kumar, N. (2009). Individualism-collectivism as descriptive norms: Development of a subjective norm approach to culture measurement. *Journal of Cross-Cultural Psychology*, 40(2), 187–213.
- Freedman, S., & Katz, L. (2007). Critical success factors for international projects. *PM world today*, 9(10), 1–8.
- Furumo, K., de Pillis, E., & Buxton, M. (2012). The impact of leadership on participation and trust in virtual teams. Proceedings of the 50th annual conference on Computers and People Research.
- Gardberg, N. A., & Fombrun, C. J. (2006). *Corporate citizenship: Creating intangible assets across institutional environments*, 31 pp. 329–346). Academy of management review.
- Gheni, A. Y., Jusoh, Y. Y., Jabar, M. A., & Ali, N. M. (2016). Factors affecting global virtual teams' performance in software projects. *Journal of Theoretical and Applied Information Technology*, 92(1), 90.
- Grisham, T. W. (2009). *International project management: Leadership in complex environments*. John Wiley & Sons.
- Grisham, T. W. (2010). *International project management: Leadership in complex environments* (1st ed). Wiley. ed.
- 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(5), 535–566.
- Gunasekare, D. U. (2015). Virtual teams in Sri Lankan business process outsourcing companies. *Journal of Business & Economic Policy*, 2(3).
- Hall, E. (1976). *Beyond culture*. New York.
- Hammer, M. R., Gudykunst, W. B., & Wiseman, R. L. (1978). Dimensions of intercultural effectiveness: An exploratory study. *International journal of intercultural relations*, 2(4), 382–393.
- Hannigan, T. P. (1990). Traits, attitudes, and skills that are related to intercultural effectiveness and their implications for cross-cultural training: A review of the literature. *International journal of intercultural relations*, 14(1), 89–111.
- Harrison, D. A., & Klein, K. J. (2007). What's the difference? Diversity constructs as separation, variety, or disparity in organizations. *Academy of management review*, 32(4), 1199–1228.
- Hatlevik, O. E., Guðmundsdóttir, G. B., & Loi, M. (2015). Examining factors predicting students' digital competence. *Journal of Information Technology Education: Research*, 14(14), 123–137.
- Hays-Thomas, R. (2004). Why now? The contemporary focus on managing diversity.
- Henderson, L. S., Stackman, R. W., & Lindekilde, R. (2016). The centrality of communication norm alignment, role clarity, and trust in global project teams [Article]. *International Journal of Project Management*, 34(8), 1717–1730. <https://doi.org/10.1016/j.ijproman.2016.09.012>
- Henderson, L. S., Stackman, R. W., & Lindekilde, R. (2018). Why cultural intelligence matters on global project teams. *International Journal of Project Management*, 36(7), 954–967. <https://doi.org/10.1016/j.ijproman.2018.06.001>
- Hero, R. E. (2010). Immigration and social policy in the United States. *Annual Review of Political Science*, 13, 445–468.
- Hodgson, D. E., & Paton, S. (2016). Understanding the professional project manager: Cosmopolitans, locals and identity work. *International Journal of Project Management*, 34(2), 352–364. <https://doi.org/10.1016/j.ijproman.2015.03.003>
- Hofstede, G. (1984). *Culture's consequences: International differences in work-related values* (Vol. 5). Sage.
- Hofstede, G. (1996). Riding the waves of commerce: A test of trompenaars' "model" of national culture differences. *International journal of intercultural relations*, 20(2), 189–198.
- Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions and organizations across nations*. Sage publications.
- Hong, H.-J. (2010). Bicultural competence and its impact on team effectiveness. *International Journal of Cross Cultural Management*, 10(1), 93–120.
- Jarvenpaa, S. L., & Leidner, D. E. (1999). Communication and trust in global virtual teams. *Organization science*, 10(6), 791–815.
- Judy, R. W., & d'Amico, C. (1997). *Workforce 2020: Work and workers in the 21st century*. ERIC.
- Juergensen, J., Guimón, J., & Narula, R. (2020). European SMEs amidst the COVID-19 crisis: Assessing impact and policy responses. *Journal of Industrial and Business Economics*, 47(3), 499–510.
- Kaushik, M., & Guleria, N. (2020). The impact of pandemic COVID-19 in workplace. *European Journal of Business and Management*, 12(15), 1–10.
- Kiznyte, J., Ciutiene, R., & Dechange, A. (2015). Applying cultural intelligence in international project management. *PM World Journal*, 4(6), 1–16.
- Klein, V. B., & Todesco, J. L. (2021). COVID-19 crisis and SMEs responses: The role of digital transformation. *Knowledge and process management*, 28(2), 117–133. <https://doi.org/10.1002/kpm.1660>
- Koch, J., & Schermuly, C. C. (2021). Managing the crisis: How COVID-19 demands interact with agile project management in predicting employee exhaustion. *British journal of management*, 32(4), 1265–1283. <https://doi.org/10.1111/1467-8551.12536>
- Kononahalli, A., Oyedele, L. O., Spillane, J., Coates, R., Von Meding, J., & Ebohon, J. (2014). Cross-cultural intelligence (CQ): Its impact on British expatriate adjustment on international construction projects. *International Journal of Managing Projects in Business*.
- Köster, K. (2009). *International project management*. Sage.
- Köster, K. (2010). Introduction to international project management. *Effective Management of Organisation Consulting: MBS3012*. 323.
- Kudyba, S. (2020). COVID-19 and the acceleration of digital transformation and the future of work. *Information Systems Management*, 37(4), 284–287. <https://doi.org/10.1080/10580530.2020.1818903>
- Kuttner, R. (2022). After hyper-globalization. The American Prospect. <https://prospect.org/economy/after-hyper-globalization/>.
- LaFromboise, T., Coleman, H. L., & Gerton, J. (1993). Psychological impact of biculturalism: Evidence and theory. *Psychological bulletin*, 114(3), 395.
- LaFromboise, T. D., & Rowe, W. (1983). Skills training for bicultural competence: Rationale and application. *Journal of Counseling Psychology*, 30(4), 589.
- Lagerström, K., & Andersson, M. (2003). Creating and sharing knowledge within a transnational team—The development of a global business system. *Journal of World Business*, 38(2), 84–95.
- Lahmann, M. (2018). *AI will transform project management. Are you ready?* Switzerland Retrieved from <https://www.pwc.ch/en/insights/risk/ai-will-transform-project-management-are-you-ready.html>.
- Lepsinger, R., & DeRosa, D. (2010). *Virtual team success: A practical guide for working and leading from a distance*. John Wiley & Sons.
- Lewicki, W. J. (2018). Innovative project management: EU common defence policy. *Marketing and management of innovations*, (4), 332–338. <https://doi.org/10.21272/mmi.2018.4-28>
- Light, I., Zhou, M., & Kim, R. (2002). Transnationalism and American exports in an English-speaking world. *International migration review*, 36(3), 702–725.
- Liguori, E., & Winkler, C. (2020). From offline to online: Challenges and opportunities for entrepreneurship education following the COVID-19 pandemic. In: SAGE Publications Sage CA: Los Angeles, CA.
- Livermore, D. (2009). Leading with cultural intelligence: The new secret to success. AMACOM Div American Mgmt Assn.
- Livermore, D. (2011). *The cultural intelligence difference-special eBook edition: Master the one skill you can't do without in today's global economy*. Amacom.
- Livermore, D. (2022). *Digital, diverse & divided*. Berrett-Koehler Publishers.
- Livermore, D., & Ang, S. (2016). Virtual chaos at worldwide Rx: How cultural intelligence can turn problems into solutions. *Intercultural management—A case-based approach to achieving complementarity and synergy*, 167–173.
- Livermore, D., & Soon, A. (2015). *Leading with cultural intelligence: The real secret to success*. Amacom.
- Livermore, D., & Van Dyne, L. (2015). *Cultural intelligence assessment*. US Cultural Centre.
- Livermore, D., Van Dyne, L., & Ang, S. (2012). Cultural intelligence: Why every leader needs it. *Intercultural Management Quarterly*, 13(2), 18–21.
- Lund, S., Madgavkar, A., Manyika, J., Smit, S., Ellingrud, K., Meany, M., & Robinson, O. (2021). *The future of work after COVID-19*. McKinsey Global Institute. In (pp. 21.

- Luo, Y., Wang, S. L., Zheng, Q., & Jayaraman, V. (2012). Task attributes and process integration in business process offshoring: A perspective of service providers from India and China. *Journal of International Business Studies*, 43(5), 498–524.
- Mangla, N. (2021). Working in a pandemic and post-pandemic period-cultural intelligence is the key. *International Journal of Cross Cultural Management*, 21(1), 53–69.
- Mansoor, M. (2019). Examining the relationship between project manager's cultural intelligence, leadership, and information technology project success in virtual teams.
- Marnewick, C., & Marnewick, A. (2021). Digital intelligence: A must-have for project managers. *Project Leadership and Society*, 2, Article 100026.
- Marnewick, C., & Marnewick, A. L. (2022). Digitalization of project management: Opportunities in research and practice. *Project Leadership and Society*, 3, Article 100061.
- Martinielli, R. J., Rahschulte, T. J., & Waddell, J. M. (2017). *Projects without boundaries : Successfully leading teams and managing projects in a virtual world*. John Wiley & Sons, Incorporated.
- Masgoret, A.-M., & Ward, C. (2006). Culture learning approach to acculturation. *The Cambridge handbook of acculturation psychology*, 58–77.
- Mattarelli, E., Tagliaventi, M. R., Carli, G., & Gupta, A. (2017). The role of brokers and social identities in the development of capabilities in global virtual teams. *Journal of International Management*, 23(4), 382–398.
- McKinsey. (2021a). *COVID-19: Implications for business* (How high can industries bounce back?, Issue).
- Mesly, O., Lévy-Mangin, J.-P., Bourgault, N., & Nabelsi, V. (2013). Effective multicultural project management: The role of human interdependence. *International Journal of Managing Projects in Business*, 7(1), 78–102.
- Miller, R., & Lessard, D. (2001). Understanding and managing risks in large engineering projects. *International Journal of Project Management*, 19(8), 437–443.
- Moon, T. (2013). The effects of cultural intelligence on performance in multicultural teams. *Journal of Applied Social Psychology*, 43(12), 2414–2425.
- Morandini, M.-C., Thum-Thysen, A., & Vandeplas, A. (2020). *Facing the Digital Transformation: Are Digital Skills Enough?*.
- Morrone, C., Ruggiero, A., & Attias, L. (2020). *Suggestions to bridge the digital skills gap and overcome the italian 'digital emergency'* 15TH INTERNATIONAL FORUM ON KNOWLEDGE ASSET DYNAMICS (IFKAD 2020): KNOWLEDGE IN DIGITAL AGE.
- Mossoli, M. (2015). Global projects: a conceptual review on execution attitude in multinational corporations. *Procedia - Social and Behavioral Sciences*, 194, 125–133. <https://doi.org/10.1016/j.sbspro.2015.06.125>
- Mueller, J. (2014). A specific knowledge culture: Cultural antecedents for knowledge sharing between project teams. *European Management Journal*, 32(2), 190–202. <https://doi.org/10.1016/j.emj.2013.05.006>
- Nadkarni, S., & Prügl, R. (2020). Digital transformation: A review, synthesis and opportunities for future research [Article]. *Management Review Quarterly*. <https://doi.org/10.1007/s11301-020-00185-7>
- Newman, S. A., & Ford, R. C. (2021). Five steps to leading your team in the virtual COVID-19 workplace. *Organizational Dynamics*, 50(1), Article 100802. <https://doi.org/10.1016/j.orgdyn.2020.100802>
- Newton, G. (2022). *Cross river rail: Project management insights from an infrastructure mega-project | June chapter event*. Project Management Institute Queensland Chapter. Cross River Rail: Project Management Insights From An Infrastructure Mega-Project | June Chapter Event | PMI Queensland (pmiql.org).
- Niazi, M., Mahmood, S., Alshayeb, M., Qureshi, A. M., Faisal, K., & Cerpa, N. (2016). Toward successful project management in global software development. *International Journal of Project Management*, 34(8), 1553–1567.
- Ochieng, E. G., & Price, A. D. (2010). Managing cross-cultural communication in multicultural construction project teams: The case of Kenya and UK. *International Journal of Project Management*, 28(5), 449–460.
- Oertig, M., & Buergi, T. (2006). The challenges of managing cross-cultural virtual project teams. *Team Performance Management: An International Journal*.
- Omored, A., Thorgren, S., & Wincent, J. (2015). Entrepreneurship psychology: A review. *International Entrepreneurship and Management Journal*, 11(4), 743–768.
- Onwuegbuzie, A.J., & Frels, R. (2016). Seven steps to a comprehensive literature review: A multimodal and cultural approach.
- Orr, R. J. (2005). *Unforeseen conditions and costs on global projects: Learning to cope with unfamiliar institutions, embeddedness and emergent uncertainty*. CA: Stanford University Stanford. 1.
- Oviatt, B. M., & McDougall, P. P. (2005). Defining international entrepreneurship and modeling the speed of internationalization. *Entrepreneurship Theory and Practice*, 29(5), 537–553.
- Panina, D. (2021). Developing Global Mindset Through Experiential Learning in Global Virtual Teams. *Developments in virtual learning environments and the global workplace* (pp. 108–123). IGI Global.
- Parboteeah, K. P., Hoegl, M., & Muethel, M. (2015). Team characteristics and employees' individual learning: A cross-level investigation. *European Management Journal*, 33(4), 287–295. <https://doi.org/10.1016/j.emj.2015.02.004>
- Payette, J., Anege, E., Caceres, E., & Muegge, S. (2015). Secure by design: Cybersecurity extensions to project management maturity models for critical infrastructure projects. *Technology Innovation Management Review*, 26–34.
- Pennetta, S., Anglani, F., & Mathews, S. (2023). Navigating through entrepreneurial skills, competencies and capabilities: a systematic literature review and the development of the entrepreneurial ability model. *Journal of Entrepreneurship in Emerging Economies*. <https://doi.org/10.1108/JEEE-09-2022-0257>. Vol. ahead-of-print No. ahead-of-print.
- Pheng, L. S., & Leong, C. H. Y. (2000). Cross-cultural project management for international construction in China. *International Journal of Project Management*, 18(5), 307–316. [https://doi.org/10.1016/S0263-7863\(99\)00027-7](https://doi.org/10.1016/S0263-7863(99)00027-7)
- PMI. (2017). *A guide to the project management body of knowledge (PMBOK guide)* (6th edition). Project Management Institute.
- PMI. (2021). *The standard for project management and a guide to the project management body of knowledge (PMBOK guide)* (7th Edition). Project Management Institute, Inc.
- Presbitero, A. (2019). Task performance in global virtual team: Examining the roles of perceived cultural dissimilarity and cultural intelligence of member and leader. *Personnel Review*.
- Presbitero, A. (2020). Foreign language skill, anxiety, cultural intelligence and individual task performance in global virtual teams: A cognitive perspective. *Journal of International Management*, 26(2), Article 100729. <https://doi.org/10.1016/j.intman.2019.100729>
- Presbitero, A. (2021). Communication accommodation within global virtual team: The influence of cultural intelligence and the impact on interpersonal process effectiveness. *Journal of International Management*, 27(1), Article 100809. <https://doi.org/10.1016/j.intman.2020.100809>
- Presbitero, A., & Toledano, L. S. (2018a). Global team members' performance and the roles of cross-cultural training, cultural intelligence, and contact intensity: The case of global teams in IT offshoring sector. *International journal of human resource management*, 29(14), 2188–2208. <https://doi.org/10.1080/09585192.2017.1322118>
- Presbitero, A., & Toledano, L. S. (2018b). Global team members' performance and the roles of cross-cultural training, cultural intelligence, and contact intensity: The case of global teams in IT offshoring sector. *The International Journal of Human Resource Management*, 29(14), 2188–2208.
- Ranf, D. (2010). Cultural differences in project management. *Annales Universitatis Apulensis Series Oeconomica*, 2. <https://doi.org/10.29302/oeconomica.2010.12.2.18>, 18-18.
- Rings, G., & Rasinger, S. (2020). *The Cambridge handbook of intercultural communication*. Cambridge University Press.
- RMIT. (2021). *What skills will we need in a post-COVID world?* In. Australia: Royal Melbourne Institute of Technology Online.
- Rubino, M., Vitolla, F., Raimo, N., & Garcia-Sanchez, I.-M. (2020). Cross-country differences in European firms' digitalisation: The role of national culture. *Management Decision*.
- Saputra, N., Nugroho, R., Aisyah, H., & Karneli, O. (2021). Digital skill during COVID-19: Effects of digital leadership and digital collaboration. *Jurnal Aplikasi Manajemen*, 19(2).
- Schmidt, F. L., & Hunter, J. E. (2000). Select on intelligence. *Handbook of principles of organizational behavior*, 3–14.
- Sheppard, B. (2020). A guide to thriving in the post-COVID-19 workplace. Retrieved July, 30, 2020.
- Shokef, E., & Erez, M. (2015). Cultural intelligence and global identity in multicultural teams. *Handbook of cultural intelligence* (pp. 195–209). Routledge.
- Szewc, J. (2013). Selected success factors of virtual teams: Literature review and suggestions for future research. *International Journal of Management and Economics*, 38(1), 67–83.
- Tawakol, F., & Ibrahim, W. E. (2021). Restructuring the small and medium enterprises in response to COVID-19 effect on emerging economies. *Ilkogretim Online*, (5), 20.
- TDA. (2020). Critical role of blue tech and digital skills in Australia's economic recovery. *Tafe directors Australia* (p. 14). Cisco, Optus.
- Tugade, M. M., & Fredrickson, B. L. (2004). Resilient individuals use positive emotions to bounce back from negative emotional experiences. *Journal of personality and social psychology*, 86(2), 320.
- Van Dyne, L., Ang, S., & Livermore, D. (2010). Cultural intelligence: A pathway for leading in a rapidly globalizing world. *Leading across differences*, 4(2), 131–138.
- van Marrewijk, A., & Smits, K. (2016). Cultural practices of governance in the Panama canal expansion megaproject. *International Journal of Project Management*, 34(3), 533–544.
- Vukomanović, M., Young, M., & Huynink, S. (2016). IPMA ICB 4.0—A global standard for project, programme and portfolio management competences. *International Journal of Project Management*, 34(8), 1703–1705.
- Wang, N., Jiang, D., & Pretorius, L. (2016). Conflict-resolving behaviour of project managers in international projects: A culture-based comparative study. *Technology in Society*, 47, 140–147.
- Ward, C.A., Bochner, S., & Furnham, A. (2001). The psychology of culture shock.
- Wilkie, S., & Edwards, J. (2021). Upskilling for the digital world and preparing for the future of work. *PwC Australia's 2nd Annual Not-for-profit CEO Survey*, 2.
- World Economic Forum. (2020). A guide to thriving in the post-COVID-19 workplace.
- Wright, C. (2022). *The changes to cultural identity in a global world*. Craig Wright.
- Wu, T. (2021). Digital project management: Rapid changes define new working environments. *Journal of Business Strategy, ahead-of-print*. <https://doi.org/10.1108/JBS-03-2021-0047> (ahead-of-print).
- Young, W. (2013). Managing projects in China-what could possibly go wrong. *Project Management World Journal*, 2(4).