

National Cultural Dimensions and Their Impact on Construction Project Management in Developing Countries: The Case of Ghana

*Armstrong Amoah¹, Jasmina Berbegal-Mirabent² and Frederic Marimon³

First submission: 15 April 2022; **Accepted:** 27 January 2023; **Published:** 18 December 2023

To cite this article: Armstrong Amoah, Jasmina Berbegal-Mirabent and Frederic Marimon (2023). National cultural dimensions and their impact on construction project management in developing countries: The case of Ghana. *Journal of Construction in Developing Countries*, 28(2): 163–187. <https://doi.org/10.21315/jcdc-04-22-0072>

To link to this article: <https://doi.org/10.21315/jcdc-04-22-0072>

Abstract: Construction project management (CPM) in developing countries (DCs) tends to experience high levels of failure. These failures have been attributed to technical, behavioural and economic factors. However, in an increasingly globalised world, understanding cultural dimensions and their impacts has become essential for effective CPM. This study therefore examines how national cultural dimensions (NCDs) affects CPM in DCs. Six dimensions that were identified from the review were used in a survey of 140 project management experts. Using exploratory and confirmatory factor analysis, a scale was obtained and validated through structural equation modelling. The results reveal that the level of inequality and the orientation of a developing country with respect to time can significantly predict CPM in these countries. This study draws managerial attention to how different cultural dimensions and collaboration among project team members impact CPM. The value of this research lies in the creation of a model that contributes to the understanding of CPM in DCs from the cultural perspective. This will help project managers to properly devise ways of dealing with cultural misunderstandings, which will eventually lead to appropriate approaches to CPM in these countries.

Keywords: Construction project management, National cultural dimensions, Structural equation modelling, National culture, Construction project success

INTRODUCTION

National culture (NC) and its dimensions have been a primary focus of sociology, psychology and anthropology since their inception (Kivrak et al., 2009). However, the parallel trend towards the running of the business through projects has brought the attention of academics and project management (PM) practitioners to study national cultural dimensions (NCDs) and their role in PM.

Due to the growth of globalisation, the issue of how to successfully manage project team members with different cultural dimensions will never likely be settled easily. For example, research shows that 92% of project team members believe that different cultural dimensions exist in their teamwork, while 60% think that these cultural dimensions impact PM and another 83% believe that the impact of the NCDs is relevant to their performance as project team members (Tian, 2020). Therefore,

¹Faculty of IT Business, Ghana Communication Technology University, P.O. Box MC 3262, Takoradi Campus, GHANA

²Department of Management, Universitat Politècnica de Catalunya, Av. Víctor Balaguer, Vilanova i la Geltrú, SPAIN

³Department of Economy and Business Organization, Universitat Internacional de Catalunya, C/Immaculada, Barcelona, SPAIN

*Corresponding author: aamoah@gctu.edu.gh

construction project managers who work with global teams must be aware of the more diverse and complex challenges associated with the internationalisation of construction project management (CPM), such as differences in NCDs of the project team, project stakeholders who live in different time zones, unclear requirements caused by different native languages and host country-specific political, economic and legal environment (Perkins, Mathur and Jagdev, 2019).

Given that CPM activities are made by people (rather than by other socio-technical resources)—who are very much influenced by their values and beliefs—no CPM activity can be entirely culture-free. Differences in NCDs call for differences in CPM practices, the failure of which could create serious barriers to CPM success (Kaminsky, 2019; Bredillet, Yatim and Ruiz, 2010). Construction project managers need to understand the different NCDs within their teams and manage them effectively because they function differently on societal values (Goel, Ganesh and Kaur, 2020).

Many developing countries (DCs) experience high levels of CPM failure (Borkor, 2011). The reasons for these failures are often attributed to a wide range of factors, including delays in payment, partisan politics, bureaucracy, corruption, poor supervision, lack of commitment by project leaders, poor planning and change in government (Ansah and Louw, 2019). These factors are somewhat embedded in cultural values (Venter, 2005), which makes culture a critical dimension that requires further investigation.

Even though some studies have analysed the impact of culture on some management aspects of the construction industry in DCs, only a few of them have investigated the impacts of NCDs on CPM as a holistic concept in DCs. In addition, most existing works on the impact of NCDs on CPM are based in Western and developed countries. However, many management concepts may be wholly or partially inapplicable and irrelevant to other cultures in DCs. In this regard, the belief that Western-oriented techniques of CPM are just straightforward procedures that anyone can learn and implement (Turner and Muller, 2003) is problematic and creates a knowledge gap because in practice there have been considerable cross-cultural problems in using Western-oriented techniques of CPM in non-western countries (Gladstone and Karim, 2020).

Given the current changing and globalised business environment, understanding NCDs and their impacts on CPM as a holistic concept has become essential for efficient CPM, especially for DCs because only a few studies have been conducted on this subject. This study intends to address this gap by: (1) conceptualising NCDs, (2) determining which of the dimensions best describes our selected DC (i.e., Ghana), (3) developing a valid instrument with an appropriate scale for NCDs and how they influence CPM in DCs and based on these, (4) draw policy guidelines with a special focus for DCs.

The remainder of this article is structured as follows. Following the introduction, we present the theoretical underpinnings that sustain our theoretical model. The data collection and the methodology that we used to analyse the results will then be described. The results are presented next. This article concludes with a discussion of the findings, as well as a description of the implications and avenues for future research.

LITERATURE REVIEW

Theoretical Underpinnings and Hypotheses Development

Every circumstance that involves PM relies on the planning, organising, inspiration and control of resources to achieve specific objectives. This essentially means that both the results that are attained and the resources that are used to obtain the former will determine how successfully a project is managed (Kuchta and Sukpen, 2013). Regardless of a project's goals, there is one critical aspect that is worth to be considered: projects are managed within a specific national cultural context. In the subsections that follow, we will provide an overview of this construct (NC), its dimensions and how they apply in the context of construction projects.

NC

Culture can be defined as how a group of people solves problems and reconciles dilemmas (Schein, 1985). Taking this definition as a starting point, it can be argued that NC is a particular pattern of thinking and acting that is espoused by people in a society, modelled around collective values, beliefs, symbols and practices and inherently different from the systems of other groups of people and societies (Kuchta and Sukpen, 2013). NC may be construed to represent a phenomenon of immense complexity in that it seeks to articulate the understanding of society. However, for this study, when a group of people exist for quite an amount of time and have strong elements (e.g., common language, mass media, educational and political systems, etc.) to affect the common mental programming of its citizens, then we say they have the same NC (Ojiako et al., 2012; Hofstede and Minkov, 2010). Again, this research takes a population living in a country and sharing similar backgrounds, ideas, norms, beliefs and values as a population from the same NC (Ansah and Louw, 2019).

The culture of a nation manifests in many ways (Ankrah, Proverbs and Debrah, 2009; Hofstede, Hofstede and Minkov, 2010), from the invisible and sometimes unconscious actions (e.g., values, beliefs and underlying assumptions) to very visible and tangible manifestations (e.g., artefacts, creations and behaviour norms or symbols, heroes and rituals).

National Cultural Dimensions and Construction Project Management

The dimension of a nation's culture involves the effects that the nation's culture has on the values of its members and how these values relate to behaviour (Hofstede, Hofstede and Minkov, 2010). In their GLOBE Study, House et al. (2014) found performance orientation, assertiveness orientation, future direction, humane orientation, institutional collectivism, in-group collectivism, gender egalitarianism, power distance (PD) and uncertainty avoidance (UA) as dimensions of a nation's culture. However, Schwartz (1994) discovered conservatism, hierarchy, mastery, effective autonomy, intellectual autonomy, egalitarian commitment and harmony as components of NC. Lewis (2012) classified NC into three dimensions namely: linear active, multi-active and reactive.

Walker (2015) provides a comprehensive definition of CPM as the planning, control and coordination of a project from its conception to completion (including

commissioning) on behalf of a client. This definition focuses on the identification of the client's objectives in terms of utility, function, quality, time and cost and the establishment of relationships between resources. The integration, monitoring and control of the contributions to the project and their output and the evaluation and selection of alternatives in pursuit of the client's satisfaction with the project outcome are fundamental aspects of CPM (Barnes, 1988). The main difference between CPM and construction management is the scope. CPM is a broader discipline that involves supervising all the parts of a construction project, from the initial design to the final product, while construction management involves overseeing a construction project. Consequently, construction project managers oversee the entire process of a construction project, which includes meeting with the client to discuss the initial plans, hiring a team and managing construction documents, creating and implementing the project budget, collaborating with project stakeholders and overseeing the construction team, including the construction manager (Barnes, 1988; Shadan and Fleming, 2012). To be successful, construction project managers need to have conceptual, human, technical and negotiating skills (Goodwin, 1993). Meanwhile, construction managers, who often work at a construction site, supervise the construction stage of a project by ordering construction materials, managing and delegating tasks to the construction team, collaborating with subcontractors and checking for quality and safety during the construction process. In this regard, they need technical skills (Shadan and Fleming, 2012; Goodwin, 1993).

The academic literature has demonstrated that NCDs have major impacts on CPM practices (Kivrak et al., 2009). For example, the studies of Kuchta and Sukpen (2013) observed that construction projects are implemented by persons and in societies. These persons and societies have certain thoughts and mindsets, which influence whatever they do. Therefore, any factor which might seem important in the CPM process is ultimately influenced by the concept of NCDs. Consequently, some cultural studies in Africa, such as those of Ankras, Proverbs and Debrah (2009), have argued that any organisation that wants to manage a construction project successfully in another country must clearly understand the cultural dimensions of the host country. In the same context, when examining the impact of NC and project success in Nigeria, Ojiako and Chipulu (2014) found that NC can impact a range of interests in construction projects, including how the performance of the projects may be measured, the perception and acceptance of risk in the project planning and the individuals who play active roles in the CPM profession. Not surprisingly, several studies find support for the argument that NCDs do have an impact on CPM, specifically on planning and control (Rodrigues, Costa and Gestoso, 2014), as well as the management of construction teams, leadership, trust and communication (Rees-Caldwell and Pinnington, 2013).

According to Tung and Verbeke (2010), Hofstede's (1980) pioneering study of NCDs was conceived as a cutting-edge tool for the cross-cultural analysis of international business and CPM. Hofstede (1980) found that factors such as PD, individualism vs. collectivism (IVC), masculinity vs. femininity (MVF), UA, time orientation (TO) and indulgence vs. restraint (IVR) were the dimensions of NC. The following section will elaborate on each of these dimensions and their impact on CPM.

Power Distance

According to Hofstede (2001), PD refers to the extent to which the less powerful members of institutions and organisations within a country expect and accept that power is distributed unequally. In a high PD culture, power distribution inequality is anticipated and admitted by the less powerful individuals of that society. Individuals in these societies admit to a hierarchical order and they accept inequality in power, decision-making, privileges, initiating actions, supervision, control and judgment, as permanent roles that are difficult to change (Hofstede, Hofstede and Minkov, 2010).

Nations with high PD cultures have employees who are quite reluctant to air their grievances and disagreements with their seniors, which negatively affects CPM. Meanwhile, CPM is based on a decentralised structure that favours high project managers' authority and control over budget and resources, with a focus on formal and informal communication. CPM is also expected to promote changes in consultative management and the roles following the needs of the project's objectives. The resolutions of relationships, interpersonal and professional issues need to be written down as procedures to avoid potential power abuse. Thus, CPM is expected to be more successful in lower PD nations than in high PD countries (PMI [Project Management Institute], 2017; Bredillet, Yatim and Ruiz, 2010). Therefore, our first hypothesis states:

H₁: PD significantly predicts CPM in DCs.

IVC

IVC describes the extent to which one's identity is derived from one's self as opposed to the group of which the individual is a member (Hofstede, 1980). Societies with a high score of individualism are mostly constructed of people who are expected to pay attention to themselves and their close relatives. However, collective societies have strong bonds within (Hofstede, Hofstede and Minkov, 2010). An absolute loyalty within a circle of relatives and a specific group of community members is possible (de Waal and de Boer, 2017).

CPM relies on the pre-defined roles and competencies of the project team members. Therefore, it considers the collectivist relationship among team members as relevant. The complementarity and accountability of the project team are essential to ensure the time, cost and schedule paradigm (Phua and Rowlinson, 2004). Even though each team member is directly and individually responsible for the completion of their part of the job, unity, networking and communication among team members are vital for effective CPM (Shore and Cross, 2005). The second hypothesis states:

H₂: IVC significantly predicts CPM in DCs.

MVF

MVF seeks to bring out the discernible gender considerations in different NCs. According to Hofstede, Hofstede and Minkov (2010), a highly masculine culture tends to encourage assertiveness and competitiveness in individuals and within

social groups. Masculine societies are more achievement-oriented and heroic. In contrast, feminine-oriented cultures value the quality of life, where people and their environment are very important matters of concern (Hofstede, 1980).

According to the PMI (2017), PM approaches usually offer a framework that supports the adequate management of human resources (e.g., interpersonal relationships, issues resolution, team-building activities, ground rules, recognition and rewards, etc.) that may be impacted by gender roles divergence (masculinity) or convergence (femininity) in a country. Construction projects can be implemented in adequate environments that comply with the underlying dimension pole (masculinity or femininity) of the country. Therefore, CPM is expected to be effective independent of the masculine or feminine dimension of a nation (Bredillet, Yatim and Ruiz, 2010). Thus, our third hypothesis states:

H₃: MVF does not significantly predict CPM in DCs.

Uncertainty Avoidance

UA refers to the extent to which the members of a culture feel threatened by unknown situations. It involves the extent to which a nation embraces novelty and emphasises structures and rules (Hofstede, Hofstede and Minkov, 2010). What matters here is how the members of society feel about the uncertainty of the future (de Waal and de Boer, 2017). Therefore, the UA score should inform us about the level of anxiety of a country. A low index indicates a low feeling of being threatened by uncertainties and a high index indicates the contrary.

Project team members from nations with high UA cultures usually seek clarity and order in activities that they are assigned to because they usually want to avoid the anxiety and stress that are associated with uncertain and risky situations (Hofstede, 2001). However, project team members from low-UA cultured nations view uncertainties as being inherent in life and thus take each day as it comes. They are very pragmatic in the way in which they handle issues and are flexible to organisational changes, leading to effective CPM and execution (Ojiako et al., 2014). Thus, our fourth hypothesis states:

H₄: UA significantly predicts PM in DCs.

TO

TO refers to the extent to which countries give precedence to heritage or prioritise the present and the future. Long-term orientation holds a pragmatic future-oriented perspective and stresses persistence, thrift, shame and status in the long run (Hofstede, Hofstede and Minkov, 2010). However, short-term orientation has a conventional historical short-term point of view and stresses calm, protection of the face and respect for tradition and rituals (Hofstede, 1980).

Project team members from short-term orientation cultures are strongly concerned with the establishment of absolute truth and are normative in terms of their thinking (Hofstede, Hofstede and Minkov, 2010). These employees show enormous respect for traditions and focus on attaining rapid results with a comparatively small propensity of saving for the future (Ojiako et al., 2014). Given that most construction projects are time-bound and are expected to meet higher

quality standards within these stipulated times, it is expected that the orientation of the project team members concerning time is relevant in the quest to achieve effective CPM (Yen and Pulatov, 2007). Thus, our fifth hypothesis states:

H₅: TO significantly predicts CPM in DCs.

IVR

In societies with high scores for indulgence, the satisfaction of basic human needs is welcomed and seen as a joyful act (Hofstede, Hofstede and Minkov, 2010). However, in societies with high levels of restraints, gratification is suppressed and controlled by rigid rules (de Waal and de Boer, 2017).

According to Ojiako et al. (2014), project team members who have a culture of indulgence generally possess a positive attitude and have a tendency towards optimism more than employees with a restraint orientation. In addition, indulgence-oriented employees emphasise leisure, act as they please and spend money as they wish (Hofstede, Hofstede and Minkov, 2010). Nguyen and Watanabe (2017) observed that insofar as they have the required competence and are committed to achieving the CPM target, the orientation of the project team concerning how they live their life (indulgence or restraint) outside the project-oriented organisation is not a major consideration for the project manager. Thus, our sixth hypothesis states:

H₆: IVR does not significantly predict CPM in DCs.

Modelling the Construct NCDs

Following his first publication on dimensions of culture in the 1980s, Hofstede, Hofstede and Minkov (2010) provided an updated version of his multidimensional cultural model, based on which the culture of various countries could be studied and compared. However, Hofstede's model has received some criticism. For example, McSweeney (2002) suggested that Hofstede's proposal of treating countries as cultural units is a flawed assumption. He also argued that Hofstede's dimensions did not reflect differences in NC but reflected differences in the company or organisational culture. Criticisms also arise from a methodological point of view. According to Ailon (2008), Hofstede relied on quantitative methods to develop his dimensional structures. This approach for reducing culture to simple numbers and causal factors reduced the complexity of NC to a scale.

Despite these criticisms, Salter, Sharp and Chen (2013) recognised that Hofstede's framework has frequently been used, mainly because of its simplicity, identification of dominant themes and understanding of cultural changes. Hofstede's framework largely remains pivotal in studies focused on NC. Arguably, Hofstede's model is not just the most widely cited and used in cross-cultural management research—with application in a variety of subfields (Ansah and Louw, 2019)—but it is also the most validated (Ojiako et al., 2014).

Considering this review, we consider that Hofstede's NCDs have enough support to be used in this study to examine the impact of NCDs on CPM in DCs. To conclude this section, Table 1 provides a summary of the dimensions of NCDs that have been considered in the literature and which the authors have investigated.

Table 1. Literature map of dimensions of NCDs by various authors

Cultural Dimensions	Sources					
	Lewis (2012)	Hofstede et al. (2010)	Trompenaars (1997)	Schwartz (1994)	Hall (1999)	Muller and Turner (2004) House et al. (2014) Shore and Cross (2005)
PD		✓				✓ ✓
IVC		✓				✓ ✓
UA		✓				✓ ✓
MVF		✓	✓			✓
TO		✓				✓ ✓
High context vs. Low context communication					✓	
Openness to change				✓		
Self-transcendence to self-enhancement				✓		
Linear active	✓					
The multi-actives	✓					
The reactive	✓					
Embeddedness vs. Autonomy				✓		
Hierarchy vs. Egalitarianism				✓		
Mastery vs. Harmony				✓		
Universalism vs. Particularism			✓			
Internal control vs. External control			✓			
Affective vs. Neutral			✓			
Individualism vs. Communitarianism			✓			
Achieved status vs. Ascribed status			✓			
Specific vs. Diffuse			✓			
Time as sequence vs. Time as synchronisation			✓			
Integration						✓
Confucian work dynamics						✓
Human heartedness						✓
Moral discipline						✓
Performance orientation						✓ ✓
Humane treatment						✓ ✓

(Continued on next page)

Table 1. *Continued*

Cultural Dimensions	Sources							
	Lewis (2012)	Hofstede et al. (2010)	Trompenaars (1997)	Schwartz (1994)	Hall (1999)	Muller and Turner (2004)	House et al. (2014)	Shore and Cross (2005)
Family collectivism								✓
Assertiveness								✓
IVR		✓						

The Ghanaian Context

Ghana is a DC that is faced with many CPM challenges, both technical and non-technical. Empirical studies on CPM in Ghana have concluded that while projects, in general, have experienced challenges regarding implementation and consequently success, construction projects are undermined by a unique set of challenges (Ahadzie, Kissi and Adjei-Kumi, 2012). In addition, Venter (2005) discovered that Ghana's track record of CPM has been very poor. These failures have exacerbated the very characteristics of underdevelopment that these projects were meant to ease. Some examples of projects that have not been successfully executed (Republic of Ghana Budget, 2017) include Accra Plains Irrigation, the Affordable Housing Units projects, Coastal Fishing Harbours and Landing Sites, Tema-Akosombo-Buipe Multi-Modal Transportation, Western Corridor Gas Infrastructure, Western Corridor "Oil Enclave" Road Re-Development, Western Railway Line Modernization, Takoradi Port Rehabilitation and Sekondi Industrial Estate – based on which the government of Ghana borrowed USD3.0 billion from the China Development Bank (CDB) and USD547 million under the Millennium Challenge Account (MCA).

Other strategic projects that have failed include the Ghana-STX Building Project, which was a USD10 billion housing project which involved the construction of 200,000 houses in the country in five years (Okereke, 2017; Owusu, 2012) and the Savannah Accelerated Development Authority afforestation project, in which a dual carriageway that was estimated to cost GHS73 million rose to GHS100 million at completion due to challenges that led to delay and cost overrun (Amoatey and Ankrh, 2017).

A review of 65 construction projects in 10 educational institutions in Ghana revealed that only five were completed within their stipulated time, while the rest exceeded their scheduled date (Famiyeh et al., 2016). Within this same context, Skinner (2009) reported that USD360 million that was spent on building boreholes and wells in deprived areas in Africa became useless because these projects were not maintained when they broke down. This study also suggests that 58% of water points in northern Ghana are not functioning, even though the citizens in those areas are struggling with access to potable water.

In their quest to understand the challenges associated with CPM in Ghana, Ahadzie, Kissi and Adjei-Kumi (2012) found that cultural issues related to deferment, hierarchy, notions of respect, taboos and other aversions often impact CPM negatively. Supporting this pronouncement, Damoah and Akwei (2017) mentioned that Ghanaian culture is a major factor in the failure of many construction projects in the country. Some features of the Ghanaian culture (e.g., their perception of time, the way they take initiative, the level of PD, the diffused nature of their culture, their status by position nature and the particularism nature of their culture) significantly impacted the management of construction projects in the country (Teng et al., 2016). It is worth noting that these cultural issues are not specific to Ghana but are shared by many DCs (Ansah and Louw, 2019).

Ofori (2013) argued that conducting a study to determine the success or otherwise of construction project delivery in a developing economy like Ghana would require the phenomenon to be investigated within the context of different situations defined by the national cultural framework of the country. Nevertheless, Damoah and Kumi (2018) highlighted that even though few studies exploring the role of NCDs in CPM exist, there are still many issues to be addressed to provide useful guidelines that are required to complete a construction project in Ghana, which is true for many DCs. Based on these recommendations, the context of this study considers the case of Ghana.

DATA AND METHODOLOGY

Data Collection and Sample

To obtain the responses of project managers on how NCDs influence CPM in DCs, a survey was designed and targeted at certified PM practitioners who are members of the PMI in Ghana, which gave a total of 228 (PMI-Ghana, 2018). The profile of the survey participants includes project managers who are serving in various capacities, such as government officials, heads of public and private institutions, civil servants who give project contracts, contractors and managers, managers of project-oriented non-governmental organisations and employees of project-oriented organisations and others who are certified project managers in Ghana. Using Sekaran's (2009) probability sampling table, a total of 140 PM practitioners were selected for the survey using the purposive sampling technique (Tongco, 2007). The survey was administered to the executives of the PMI, Ghana for onward distribution to their members on 19th January 2020. This was done after a request letter was sent to explain the purpose of the study and ask for their acceptance to participate in the survey. A positive response from the PMI was received on 16th January 2020. In all, 140 surveys were distributed and 124 were returned (representing a response rate of 88.6%). From these, 112 were duly completed without errors and were valid for the analysis.

Measures

The survey that was distributed to the PM experts was designed using the English language and was divided into two parts. The first part has five items and requests demographic information about the respondents. This part was made up of a mix

of open and closed-ended questions and was self-developed by the authors. The second was made up of six dimensions (i.e., the NCDs discussed under the theoretical underpinnings) with 24 items and six additional items for the dependent variable, making a total of 35 items. A 5-point Likert scale, with 1 representing "Strongly disagree" to 5 representing "Strongly agree", was used to ask the respondents to express their level of agreement or otherwise to statements made with the selected items.

The scale that was used in the second part of the survey was self-developed by the authors using the NCDs proposed by Hofstede, Hofstede and Minkov (2010). The items that were used to operationalise the factors in this study were deduced from the descriptions given of the factors in the review section, with a justification for the selection of these factors and determinants. Table 2 shows the deduced dimensions and their respective items that emerged from a comprehensive review.

Table 2. List of dimensions and items

Dimension	Item	Description
PD	PD1	The superiority of superiors is accepted in my society.
	PD2	All individuals are not treated the same in my country.
	PD3	Individuals admit to a hierarchical order in my country.
	PD4	In my society, each person's place is determined and there is no need for an explanation for this placement.
IVC	IVC1	My identity is derived from myself.
	IVC2	The degree of interdependence my society maintains among its members is low.
	IVC3	The group I belong to does not define me.
	IVC4	Individuals in my society pay attention to themselves and their close relatives.
MVF	MVF1	My society emphasises assertiveness.
	MVF2	In my society, success is measured by the winner.
	MVF3	My society is driven by competition.
	MVF4	My society is achievement-oriented.
UA	UA1	There is the discomfort of the individuals from my community against ambiguity.
	UA2	My society does not embrace novelty.
	UA3	People have strong norms of faith and reject unconventional conduct.
	UA4	In my society, people value morals more than practice.
TO	TO1	My society shows no pragmatic future-oriented perspective.
	TO2	In my society, there is respect for traditions and rituals.
	TO3	In my society, education is not supported in preparation for the days to come.
	TO4	My society holds a conventional historical short-term point of view.

(Continued on next page)

Table 2. *Continued*

Dimension	Item	Description
IVR	IVR1	In my society, satisfaction of basic human needs is welcomed.
	IVR2	Gratifications are not suppressed in my country.
	IVR3	Natural human drives related to enjoying life and having fun are welcomed in my society.
	IVR4	There are no rigid rules controlling gratifications in my society.

Method

To identify the behaviour of the variables of interest, for this study, the kind of questions that were posed to respondents required the use of quantitative approaches, with their subsequent experimental designs. Since the items included in the survey were adapted from different previous works, in the first step it was necessary to examine the content validity of the data obtained through the content validity ratio. This implies testing how suitable our data were for factor analysis. Consequently, the Kaiser-Meyer-Olkin (KMO) test and the Bartlett's of sphericity were carried out (Ayre and Scally, 2014; Lawshe, 1975). Next, a principal component analysis was used as an exploratory tool to assist us in the gining of items that were included in the survey into factors. These analyses were performed using the Statistical Package for the Social Sciences (SPSS) for Windows v25. To ensure the overall consistency of our measures, the reliability analysis of the factors obtained was vouched for using Cronbach's alpha and composite reliability (Fornell and Larcker, 1981). By assessing if the inter-factor correlations were less than the square root of the average variance extracted (AVE), the discriminant validity analysis among these factors was conducted using standardised covariances between factors to help ascertain the overall accuracy of our measures (Fornell and Larcker, 1981).

A definitive scale consisting of the new dimensions was obtained from the exploratory analysis and confirmed. To ascertain the fitness of the established definitive dimensions, structural equation modelling was conducted using the robust maximum likelihood method from the asymptotic variance-covariance matrix (Bentler, 2006). These analyses were performed using the EQS 6.4 software for Windows.

RESULTS

The preliminary analysis began with an exploration of the demographic characteristics (as shown in Table 3) of the respondents who participated in the survey. The idea is to provide the stakeholders with a basis for decision-making and further subset analysis. The statistics highlight the dynamics embedded in our sample size and the sufficiency of our scale, thus throwing more light on the validity and reliability of our data.

Table 3. Demographic characteristics of the sample

Characteristics	Number	%
Gender		
Male	91	81.3
Female	21	18.8
Total	112	100.0
Age		
18 years old to 20 years old	18	16.1
21 years old to 31 years old	64	57.1
31 years old to 40 years old	19	17.0
41 years old to 50 years old	10	8.9
> 50 years old	1	0.9
Total	112	100.0
PM Certification		
PMP	72	64.3
CAPM	21	18.8
PMI-RMP	8	7.1
PMI-PBA	6	5.4
Others	5	4.5
Total	112	100.0

To validate the suitability of our data for factor analysis, the KMO test and Bartlett's test of sphericity (as shown in Table 4) were performed. The results provided a KMO test value of 0.784, which is greater than the threshold value of 0.60. This indicates good sampling adequacy and that the data are suitable for factor analysis. Bartlett's test of sphericity was also positive and significant at 0.05 (i.e., $\chi^2 = 988.024$, $df = 276$, $p = 0.000 < 0.05$). These results authenticate a linear dependence among the variables and confirm that the database is good for further analysis (Pallant, 2010).

Table 4. KMO test and Bartlett's test of sphericity

KMO Test and Bartlett's Test of Sphericity		
KMO measure of sampling adequacy		0.784
	Approx. chi-square	988.024
Bartlett's test of sphericity	df	276
	Sig.	0.000

An exploratory factor analysis (EFA) using principal components analysis and varimax rotation was launched to validate the factor structure of the measurement variables before the questions for this study were addressed. The exploratory analysis used 24 items from the determinants for the dimensions of NC. The scale that is used in this study was analysed in accordance with the criteria set by Ladhari

(2012) to retain items. The criteria were that the items: (1) loaded at 0.66 or more on a factor, (2) did not load at more than 0.50 on two factors, (3) had an item-to-total correlation of more than 0.50 and (4) had an eigenvalue larger than 1. In total, nine factors emerged from our analyses with eigenvalues greater than 1 (Kaiser, 1960). Table 5 summarises the EFA results. Even though nine factors emerged from our analyses with eigenvalues greater than one, only five were selected because all the factors that retained only one item of the original dimension were discarded. The five selected factors that emerged from the EFA together accounted for 50.62% of the variance in the sample. Table 5 shows these five selected factors with loads greater than 0.66 highlighted. New (definitive) labels are proposed, although relatively few overlaps with the original dimensions are shown.

Table 5. Matrices of the components extracted from the EFA

	EFA (24 ITEMS)				
	1PD	2TO	3IVR	4IVC	5MVF
PD1	0.871	-0.045	-0.075	-0.065	0.164
PD3	0.831	0.017	-0.044	0.084	0.032
PD2	0.765	-0.137	0.094	-0.101	0.180
UA4	0.653	-0.128	0.455	0.113	0.144
UA1	0.593	0.007	0.131	-0.027	-0.155
TO3	0.042	0.822	0.031	-0.090	0.045
TO2	-0.176	0.814	0.025	0.004	0.116
TO1	-0.214	0.790	-0.299	-0.021	-0.090
TO4	0.099	0.787	0.075	-0.056	-0.057
IVR4	0.006	0.126	0.675	-0.030	-0.203
MVF2	0.017	-0.114	0.658	-0.031	0.310
IVC4	0.551	-0.020	0.641	0.061	-0.013
IVC3	-0.065	-0.082	0.552	0.279	0.132
IVC1	-0.053	-0.055	0.077	0.915	0.020
IVC2	0.050	-0.079	-0.001	0.908	-0.019
MVF3	0.151	-0.036	-0.089	-0.105	0.760
MVF4	0.167	0.103	0.267	0.132	0.699
IVR3	-0.028	-0.065	0.039	-0.040	0.108
UA3	0.418	-0.096	0.285	0.222	0.194
PD4	0.268	-0.002	0.003	0.022	0.067
IVR1	0.031	-0.049	-0.108	-0.067	-0.136
MVF1	0.177	-0.045	0.250	0.089	0.300
IVR2	-0.110	-0.007	0.047	-0.086	-0.172
UA2	-0.410	-0.057	0.268	0.027	-0.179
% of variance	15.52	11.25	9.40	7.88	6.58

PD explained 15.52% of the variance of the 24 items and assessed the level of equality or otherwise in DCs and how individuals in DCs admit a hierarchical order. The factor retained three out of the four original items in this dimension (PD1, PD2 and PD3) and included an additional item that was previously under another dimension (UA4). The level of the value placed on morals more than practice in DCs clarifies why it has been realigned to this dimension.

TO retained all four items of this original dimension (TO1, TO2, TO3 and TO4) and explained 11.25% of the variance. It assesses how DCs hold either a pragmatic future-oriented or a conventional historical short-term point of view.

IVR was composed of three different original items of the dimension (IVR4, MVF2 and IVC4). It accounted for 9.40% of the variance. It assesses how social gratifications are accepted.

IVC retained two items out of four of the initial dimensions (IVC1 and IVC2) and extracted 7.88% of the variance of the 24 items of the EFA. It measures how individuals identify themselves in their society.

MVF was composed of the two original items of this dimension (MVF3 and MVF4). It captured 6.58% of the variance of the EFA. This dimension measures how assertive, achievement-oriented and competitive a DC is.

Notably, there were some overlaps in the items of these original dimensions and as a result, some slight adjustments to the labels were made. The adjustment of items between original dimensions was done in consistency with the definitive dimension contents. Five factors were obtained, with one of the original dimensions being removed at this point. Specifically, the dimension "UA" was dropped based on the feedback from the responses and the EFA.

The final five dimensions obtained after the EFA are PD, TO, IVR, IVC and MVF. To examine the uni-dimensionality of these constructs, five new independent EFAs were conducted, each with only the items suggested in the previous step (the shaded items in Table 5). After the analysis, the five factors only extracted one factor each, which validates our approach. Table 6 provides the mean scores and the interpretation for these selected cultural dimensions.

Table 6. Mean scores for Ghanaian cultural dimensions

Factor	Mean score	Interpretation	Attributes
PD	3.23	High	High level of inequalities in power distribution.
TO	3.60	High	Short-term orientation. People have respect for traditions, a relatively small propensity to save for the future and a focus on achieving quick results.
IVR	3.74	High	People have the desire to enjoy life and have fun. People place a higher degree of importance on leisure time, act as they please and spend money as they wish.
IVC	4.27	High	People pay attention to themselves and their close relatives.
MVF	4.00	High	Masculine society. Assertiveness and competitiveness in individuals and within social groups are encouraged.

Source: The Hofstede Centre (2016)

Table 7 provides the statistics for the reliability and convergent validity of the five factors obtained. The reliability of the individual items was vouched for by their high loads. Except for two factors (IVR and MVF) whose Cronbach's alpha was less than 0.7, Cronbach's alpha and the composite reliability for all the factors exceeded the threshold value of 0.7 for internal consistency (Nunnally and Bernstein, 1994). The AVE for each factor was also greater than 0.5, which is the benchmark of the recommended threshold (Fornell and Larcker, 1981). The Cronbach's alpha values did not improve when any of the items were removed from the scales for each dimension and again, except for two factors (IVR and MVF), the correlations between each item and the total corrected scales were all far beyond 0.5. Convergent validity was confirmed for all the factors, where all the items were shown to have significant loads ($t > 2.58$) (Malhotra, 1999).

Table 7. Loads of the five factors and their reliability statistics

	PD	TO	IVR	IVC	MVF
PD1	0.893	TO1 0.826	IVR4 0.759	IVC1 0.928	MVF3 0.809
PD2	0.856	TO2 0.819	MVF2 0.755	IVC2 0.928	MVF4 0.809
PD3	0.832	TO3 0.815	IVC4 0.702		
UA4	0.748	TO4 0.781			
Cronbach's alpha	0.842	0.825	0.569	0.837	0.472
Range of Cronbach's alpha if one item is deleted	0.752–0.855	0.772–0.797	0.443–0.454		
Range of correlations between items and total corrected scale	0.586–0.786	0.614–0.668	0.356–0.413	0.721	0.309
Composite reliability	0.900	0.884	0.783	0.925	0.791
AVE	0.695	0.657	0.546	0.861	0.654

Note: All loads significantly at p-value = 0.01

Table 8 gives the results of the analysis of discriminant validity, which was conducted using linear correlations or standardised covariances between latent factors by examining whether the inter-factor correlations were less than the square root of the AVE (Fornell and Larcker, 1981). Table 8 shows that the square roots of each AVE were greater than the off-diagonal elements. Thus, discriminant validity was verified (Hair et al., 2010).

Table 8. Correlation matrix of latent factors

Factors	1	2	3	4	5
PD	0.834				
TO	-0.160	0.810			
IVR	0.335	-0.076	0.739		
IVC	0.007	-0.123	0.061	0.928	
MVF	0.319	0.011	0.208	0.040	0.809

To set up the definitive scale, an analysis of the five dimensions as dimensions of second-order CFA was conducted. The model was estimated using the robust maximum likelihood method from the asymptotic variance-covariance matrix. The fit statistics that were obtained in the measurement model estimation in Table 9 show that the variables converged towards the factors established in the CFA. The Satorra-Bentler χ^2 was 371.278, with 179 degrees of freedom and a p -value of 0.000; χ^2/df was 2.07, which was below the acceptable limit of 5. The root-mean-square error of approximation (RMSEA) was 0.098 and the comparative fit index (CFI) was 0.870. Taking the significance of the robust χ^2 statistic with caution and noting the global indicators, it is apparent that the global fit was acceptable. Table 9 again provides the standardised coefficients for the relationships established by the model and its t -values, out of which the following findings can be deduced. First, Table 9 shows that PD has a significant influence on CPM in DCs (standardised coefficient of 0.709 and a t -value of 9.840). TO was also shown to be a significant predictor of CPM in DCs (standardised coefficient of 0.658 and a t -value of 7.970).

Table 9. CFA

Dimension	Item	Load	t -Value	r^2
PD	PD1	0.758	-	0.574
	PD2	0.773	9.630	0.597
	PD3	0.761	9.670	0.579
	UA4	0.622	7.210	0.386
TO	TO1	0.865	-	0.749
	TO2	0.794	10.090	0.631
	TO3	0.720	13.280	0.519
	TO4	0.678	9.620	0.459
IVR	MVF2	1.000	-	1.000
	IVR4	0.348	3.990	0.121
	IVC4	0.344	4.340	0.118
IVC	IVC1	1.000	-	1.000
	IVC2	0.754	6.720	0.568
MVF	MVF3	1.000	-	1.000
	MVF4	0.394	5.850	0.155

(Continued on next page)

Table 9. *Continued*

	Dimension	Standardised Coefficient	t-Value	r ²
CPM	PD	0.709	9.840	0.757
	TO	0.658	7.970	
	IVR	0.015	0.226	
	IVC	-0.094	-1.558	
	MVF	0.003	0.057	
The Goodness of Fit Summary				
Satorra-Bentler scaled χ^2			371.278	
Degrees of freedom (df)			179	
p-value			0.000	
χ^2/df			2.074	
CFI			0.870	
RMSEA			0.098	
90% confidence interval of RMSEA			(0.084-0.112)	

Table 9 further shows that IVR has a causal relationship with CPM in DC but that the relationship is not statistically significant (standardised coefficient of 0.015 and a *t*-value of 0.226). Finally, the remaining two dimensions, IVC (standardised coefficient of -0.094 and a *t*-value of -1.558) and MVF (standardised coefficient of 0.003 and a *t*-value of 0.057) were found to be non-significant predictors of CPM in DCs. Table 10 shows the number of remaining items (and dimensions) after each debugging step. It also shows the number of remaining items in the final scale.

Table 10. The number of items after each step

Original Dimensions	Number of Items from Literature Review	EFA	CFA	Definitive Dimensions
PD	4	4	4	PD
IVC	4	2	2	IVC
MVF	4	3	3	MVF
UA	4	-	-	-
TO	4	4	4	TO
IVR	4	2	2	IVR
Number of items remaining	24	15	15	

DISCUSSION

This study aimed to create a model that will help to understand NCDs and their impacts on CPM in DCs, with the empirical application considering the case of Ghana. To achieve this goal and build upon the existing literature, a model has

been proposed that consists of 15 items that are distributed along five dimensions, namely: PD, TO, IVR, IVC and MVF. These dimensions are reliable and show convergent and divergent validity.

The test run confirmed that PD significantly influenced CPM in DCs. This finding supports the first hypothesis (H_1) of this study and our initial intuition that the high average score obtained for PD indicates that Ghanaian society and by extension DCs, are relatively unconcerned with inequalities and gaps at work and in their countries. Therefore, employees are comfortable with the rules that are put forward by the authorities. The idea of respecting the elderly and superiors at work is a significant feature of their NC. However, the gaps between employees and managers, politicians in authority, ordinary citizens and so on, partly account for the challenges associated with CPM in DCs. This happens because countries with higher PD are likely to have a situation where project team management is given little prioritisation, which generally affects CPM. These results appear to be intuitively sensible (Ong and Bahar, 2019; Ojiako et al., 2014) and are in line with those of Ansah and Louw (2019).

The dimensions IVC and MVF were non-significant predictors of CPM in DCs. This finding contradicts our second hypothesis (H_2) but supports the third hypothesis (H_3). For most CPM approaches, a roadmap that assists the management of HR activities such as interpersonal relationships, conflict resolution, team building, recognition, rewards and so on that may be impacted by gender role divergence or convergence in a country is already catered for. Therefore, CPM is expected to be successfully carried out independent of the masculine and feminine dimensions of the DCs. Even though these findings confront those obtained by Ansah and Louw (2019) and Ojiako et al. (2014), there is a stream in the literature that supports them (e.g., Kivrak et al., 2009; Ankras, Proverbs and Debrah, 2009).

Another key finding of this study is the role played by TO in explaining CPM. According to the findings, TO was found to be a significant predictor of CPM in DCs, which supports the fifth hypothesis (H_5) of this study. Countries that hold a conventional historical short-term point of view show no pragmatic future-oriented perspective, have an education system that does not prepare people for the future (as in the case of Ghana and many DCs) and are likely to manage their construction projects in haste, which normally leads to problems in CPM. This finding agrees with the adoption of long-term plans for CPM in DCs. Yet, it contradicts that of Ansah and Louw (2019), who did not find that TO was a significant dimension in their study of NC. However, after a careful examination of this work, it was found that their model was not used to measure CPM in DCs. Our model and results are more aligned with those reported by Yen and Pulatov (2007), who defined a model made up of the items that dealt with issues as to whether a society has a strong respect for traditions and rituals.

The final finding of this study is that IVR has a causal relationship with CPM in DCs, although the relationship is not statistically significant, which supports our sixth hypothesis (H_6). How people in DCs desire to enjoy life, have fun, spend money, emphasise leisure and act as they wish has nothing to do with CPM in these countries. If people have the required competence and commit to achieving the CPM target, then the orientation of the project team concerning how they lead their life outside the project-oriented organisation is not a major consideration for CPM. This finding adds strength to the work of Ojiako and Chipulu (2014) in which the authors did not find IVR to be a significant predictor of project success or failure.

Several managerial implications can be drawn from the findings of this study. First, managers of large-scale projects that are supposed to be completed by employees with different cultural orientations in DCs need to recognise the effects of these NCDs on CPM within culturally diverse work environments. This will help them to deal with issues of intolerance, mistrust, communication gaps and wrong decision-making, which can undermine the success of the construction project to be managed in these countries.

Secondly, if they want to successfully manage construction projects in these countries, then project managers in DCs need to focus more on the main cultural dimension, especially the level of inequality, TO and the level of indulgence of the DCs where they are operating. Project-oriented organisations that send expatriates to manage construction projects in DCs need to train them in cultural intelligence. They need to appreciate different cultural dimensions and collaborate effectively with other project team members.

Finally, managers of project-oriented organisations need to recognise that their employees have a set of ideologies and values that dictate their behaviour. Therefore, for successful CPM, managers need to learn the culture of the society of their employees and formulate organisational policies that meet their needs. Managers of multinational project-oriented organisations also need to identify the cultural differences in the societies in which they operate if they wish to find a fine balance for the construction project's success.

CONCLUSIONS

Given the lack of clarity on cultural influences on CPM, as posited by Ojiako and Chipulu (2014), further research ought to be carried out to address this gap. Consequently, this study has tried to highlight the impact of NCDs on CPM in DCs. Within this context, the original contribution of this study is based on the hope that the findings of this study will help managers of multinational project-oriented organisations understand CPM in DCs from a cultural perspective. Being aware of the impact of NCDs of DCs on CPM will help project managers devise ways of dealing with cultural misunderstandings, which will eventually lead to appropriate approaches to CPM in these countries.

This study provides new insight to both policymakers and opinion leaders who make decisions concerning construction projects in DCs on how the cultural dimension affects CPM in their country. This study will help policymakers in DCs realise that for effective CPM, they need to address the issues of social inequalities that are prevalent in their countries and adopt a long-term developmental plan.

The model that is created in this study is expected to be of value to scholars because it provides for the first time a valid instrument that accounts for NCDs when dealing with CPM. The proposed scale encompasses the main dimensions of NC discussed in the literature and has the potential to be adapted to other cultural settings.

This study is not free of limitations, even though it was conducted using a rigorous process. These limitations also offer new avenues for future research. First, the empirical application used a sample from one country. Consequently, future research might consider using a broader sample for better inference. The second limitation refers to the dimensions included. Although the results indicate an acceptable model fitting, some of the dimensions that we obtained appear to

contradict our earlier hypotheses. Further research is needed to better understand the reasons behind this result and validate our approach. It is also worth noting that although all the participants of this study were members of the PMI, a few of them (such as graduate students) might not be practising as construction project managers and therefore they might not have sound professional experience as project managers. Finally, this study does not consider the users of the construction projects. Therefore, future research might consider including the users because they are the recipients of these projects.

ACKNOWLEDGEMENTS

This article was written using responses from members of the PMI and other project management experts in Ghana. The authors are grateful to them.

REFERENCES

- Ahadzie, D.K., Kissi, E. and Adjei-Kumi, T. (2012). The status of project management practices in the Ghanaian construction industry. *International Journal of Project Planning and Finance*, 3(1): 123–135.
- Ailon, G. (2008). Mirror, mirror on the wall: Culture's consequences in a value test of its own design. *Academy of Management Review*, 33(4): 885–904. <https://doi.org/10.5465/amr.2008.34421995>
- Amoatey, C.T. and Ankrah, A.N.O. (2017). Exploring critical road project delay factors in Ghana. *Journal of Facilities Management*, 15(2): 110–127. <https://doi.org/10.1108/JFM-09-2016-0036>
- Ankrah, N.A., Proverbs, D. and Debrah, Y. (2009). Factors influencing the culture of a construction project organisation: An empirical investigation. *Engineering, Construction and Architectural Management*, 16(1): 26–47. <https://doi.org/10.1108/09699980910927877>
- Ansah, M.O. and Louw, L. (2019). The influence of national culture on organizational culture of multinational companies. *Cogent Social Sciences*, 5(1): 1–15. <https://doi.org/10.1080/23311886.2019.1623648>
- Ayre, C. and Scally, A.J. (2014). Critical values for Lawshe's content validity ratio: Revisiting the original methods of calculation. *Measurement and Evaluation in Counseling and Development*, 47(1): 79–86. <https://doi.org/10.1177/0748175613513808>
- Barnes, M. (1988). Construction project management. *International Journal of Project Management*, 6(2): 69–79. [https://doi.org/10.1016/0263-7863\(88\)90028-2](https://doi.org/10.1016/0263-7863(88)90028-2)
- Bentler, P.M. (2006). *EQS 6 Structural Equations Program Manual*. Encino, CA: Multivariate Software, Inc.
- Borkor, M.J.K. (2011). The dirty politics of development project hurts. Available at: <http://www.ghanaweb.com/GhanaHomePage/features/artikel.php?ID=215290> [Accessed on 6 October 2021].
- Bredillet, C., Yatim, F. and Ruiz, P. (2010). Project management deployment: The role of cultural factors. *International Journal of Project Management*, 28(2): 183–193. <https://doi.org/10.1016/j.ijproman.2009.10.007>

- Damoah, I.S. and Akwei, C. (2017). Government project failure in Ghana: A multidimensional approach. *International Journal of Managing Projects in Business*, 10(1): 32–59. <https://doi.org/10.1108/IJMPB-02-2016-0017>
- Damoah, I.S. and Kumi, D.K. (2018). Causes of government construction projects failure in an emerging economy: Evidence from Ghana. *International Journal of Managing Projects in Business*, 11(3): 558–582. <https://doi.org/10.1108/IJMPB-04-2017-0042>
- De Waal, A.A. and De Boer, F.A. (2017). Project management control within a multicultural setting. *Journal of Strategy and Management*, 10(2): 148–167. <https://doi.org/10.1108/JSMA-03-2016-0020>
- Famiyeh, S., Amoatey, C.T., Adaku, E.A. and Agbenohevi, C.S. (2016). Major causes of construction time and cost overruns: A case of selected educational sector projects in Ghana. *Journal of Engineering, Design and Technology*, 15(2): 181–198. <https://doi.org/10.1108/JEDT-11-2015-0075>
- Fornell, C. and Larcker, D.F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1): 39–50. <https://doi.org/10.1177/002224378101800104>
- Gladstone, S. and Karim, P. (2020). Improving project management practice in Ghana with focus on agriculture, banking and construction sectors of the Ghanaian economy. *Global Scientific Journals*, 8(1): 2497–2506.
- Goel, A., Ganesh, L.S. and Kaur, A. (2020). Project management for social good: A conceptual framework and research agenda for socially sustainable construction project management. *International Journal of Managing Projects in Business*, 13(4): 695–726. <https://doi.org/10.1108/IJMPB-06-2019-0155>
- Goodwin, R.S.C. (1993). Skills required of effective project managers. *Journal of Management in Engineering*, 9(3): 217–226. [https://doi.org/10.1061/\(ASCE\)9742-597X\(1993\)9:3\(217\)](https://doi.org/10.1061/(ASCE)9742-597X(1993)9:3(217))
- Hair, J.F., Black, W.C., Babin, B.J and Anderson, R.E. (2010). *Multivariate Data Analysis: A Global Perspective*. 7th Ed. New York: Pearson.
- Hofstede, G. (2016). Cultural insights. Available at: <https://geert-hofstede.com> [Accessed on 18 November 2021].
- _____. (2001). *Culture's Consequences: Comparing Values, Behaviors, Institutions and Organizations Across Nations*. 2nd Ed. California/London/New Delhi: Sage Publications.
- _____. (1980). *Culture's Consequences: International Differences in Work-related Values*. Newbury Park/London/New Delhi: Sage Publications.
- Hofstede, G. and Minkov, M. (2010). Long-versus short-term orientation: New perspectives. *Asia Pacific Business Review*, 16(4): 493–504. <https://doi.org/10.1080/13602381003637609>
- Hofstede, G., Hofstede, J. and Minkov M. (2010). *Cultures and Organizations: Software of the Mind. Intercultural Cooperation and Its Importance for Survival*. 3rd Ed. New York: McGraw-Hill.
- House, R.J., Dorfman, P.W., Javidan, M., Hanges, P.J. and De Luque, M.F.S. (2014). *Strategic Leadership Across Cultures: The GLOBE Study of CEO Leadership Behavior and Effectiveness in 24 Countries*. Thousand Oaks, California: Sage.
- Kaiser, H.F. (1960). The application of electronic computers to factor analysis. *Educational and Psychological Measurement*, 20(1): 141–151. <https://doi.org/10.1177/001316446002000116>

- Kaminsky, J. (2019). The global influence of national cultural values on construction permitting. *Construction Management and Economics*, 37(2): 89–100. <https://doi.org/10.1080/01446193.2018.1506140>
- Kivrak, S., Ross, A., Arslan, G. and Tunçan, M. (2009). Impacts of cultural differences on project success in construction. In A.R.J. Dainty (ed.), *Proceedings of the 25th Annual ARCOM Conference*. Nottingham, UK: Association of Researchers in Construction Management (ARCOM), 53–61.
- Kuchta, D. and Sukpen, J. (2013). Culture and project management. *Journal of Intercultural Management*, 5(3): 23–38. <https://doi.org/10.2478/joim-2013-0016>
- Ladhari, R. (2012). The lodging quality index: An independent assessment of validity and dimensions. *International Journal of Contemporary Hospitality Management*, 24(4): 628–652. <https://doi.org/10.1108/09596111211217914>
- Lawshe, C.H. (1975). A quantitative approach to content validity. *Personnel Psychology*, 28(4): 563–575. <https://doi.org/10.1111/j.1744-6570.1975.tb01393.x>
- Lewis, R.D. (2012). *When Cultures Collide: Leading Across Cultures*. 3rd Ed. Boston/London: Nicholas Brealey International.
- Malhotra, N.K. (1999). *Marketing Research: An Applied Orientation*. 3rd Ed. London: Prentice-Hall.
- McSweeney, B. (2002). Hofstede's model of national cultural differences and their consequences: A triumph of faith: A failure of analysis. *Human Relations*, 55(1): 89–118. <https://doi.org/10.1177/0018726702551004>
- Müller, R. and Turner, J.R. (2004). *Cultural Differences in Project Owner-Manager Communication*. Newtown Square, PA: PMI.
- Nguyen, L.H. and Watanabe, T. (2017). The impact of project organizational culture on the performance of construction projects. *Sustainability*, 9(5): 1–21. <https://doi.org/10.3390/su9050781>
- Ofori, D.F. (2013). Project management practices and critical success factors: A developing country perspective. *International Journal of Business and Management*, 8(21): 14–30. <https://doi.org/10.5539/ijbm.v8n21p14>
- Nunnally, J.C. and Bernstein, I.H. (1994). *Psychometric Theory*. 3rd Ed. New York: McGraw-Hill.
- Ojiako, U. and Chipulu, M. (2014). National culture and perceptions of success and failure in projects. *Management, Procurement and Law*, 167(4): 169–168. <https://doi.org/10.1680/mpal.13.00027>
- Ojiako, U., Chipulu, M., Gardiner, P., Williams, T., Anantatmula, V., Mota, C., Maguire, S., Shou, Y., Nwilo, P. and Peansupap, V. (2012). *Cultural Imperatives in Perceptions of Project Success and Failure*. The Newtown Square, PA: PMI.
- Ojiako, U., Chipulu, M., Gardiner, P., Williams, T., Mota, C., Maguire, S., Shou, Y. and Stamatii, T. (2014). Effect of project role, age and gender differences on the formation and revision of project decision judgments. *International Journal of Project Management*, 32(4): 556–567. <https://doi.org/10.1016/j.ijproman.2013.09.001>
- Okereke, O.C. (2017). Causes of failure and abandonment of projects and project deliverables in Africa. *PM World Journal*, 6(1): 1–16.
- Ong, C.H. and Bahar, T. (2019). Factors influencing project management effectiveness in the Malaysian local councils. *International Journal of Managing Projects in Business*, 12(4): 1146–1164. <https://doi.org/10.1108/IJMPB-09-2018-0200>

- Owusu, W.Y. (2012). STX: Tale of a failed project. *Modern Ghana*, 10 January. Available at: <https://www.modernghana.com/news/371213/stx-tale-of-a-failed-project.html>
- Pallant, J. (2010). *SPSS Survival Manual: A Step-by-Step Guide to Data Analysis Using the SPSS Program*. 4th Ed. New York: McGraw Hill.
- Perkins, D., Mathur, G. and Jugdev, K. (2019). Project management resources and outcomes: A confirmatory factor analysis. *International Journal of Managing Projects in Business*, 13(3): 600–615. <https://doi.org/10.1108/IJMPB-07-2019-0170>
- Phua, F.T.T. and Rowlinson, S. (2004). Operationalizing culture in construction management research: A social identity perspective in the Hong Kong context. *Construction Management and Economics*, 22: 913–925. <https://doi.org/10.1080/01446190310001631000>
- PMI (Project Management Institute) (2017). *A Guide to the Project Management Body of Knowledge (PMBOK® Guide)*. 7th Ed. Newtown Square, PA: PMI.
- PMI-Ghana (2018). PMI® membership. Available at: <https://www.pmi.org/membership> [Accessed on 19 January 2020].
- Rees-Caldwell, K. and Pinnington, A.H. (2013). National culture differences in project management: Comparing British and Arab project managers' perceptions of different planning areas. *International Journal of Project Management*, 31(2): 212–227. <https://doi.org/10.1016/j.ijproman.2012.04.003>
- Republic of Ghana Budget (2017). The budget statement and economic policy. Available at: <https://mofep.gov.gh/sites/default/files/budget-statements/2017-Budget-Statement.pdf> [Accessed on 22 August 2022].
- Rodrigues, J.S., Costa, A.R. and Gestoso, C.G. (2014). Project planning and control: Does national culture influence project success? *Procedia Technology*, 16: 1047–1056. <https://doi.org/10.1016/j.protcy.2014.10.059>
- Salter, S.B., Sharp, D.J. and Chen, Y. (2013). The moderating effects of national culture on escalation of commitment. *Advances in Accounting*, 29(1): 161–169. <https://doi.org/10.1016/j.adiac.2013.02.001>
- Schein, E. (1985). *Organizational Culture and Leadership*. San Francisco: Jossey-Bass.
- Schwartz, S.H. (1994). *Beyond Individualism/Collectivism: New Cultural Dimensions of Values*. Thousand Oaks, CA: Sage.
- Sekaran, U. (2009). *Research Methods for Business*. 5th Ed. Hoboken, NJ: John Wiley & Sons.
- Shadan, K. and Fleming, G. (2012). Construction project management handbook: March 2012. FTA report no. 0015. Federal Transit Administration, United States.
- Shore, B. and Cross, B.J. (2005). Exploring the role of national culture in the management of large-scale international science projects. *International Journal of Project Management*, 23(1): 55–64. <https://doi.org/10.1016/j.ijproman.2004.05.009>
- Skinner, J. (2009). Where every drop counts: Tackling rural Africa's water crisis. Available at: <https://pubs.iied.org/pdfs/17055IIED.pdf> [Accessed on 22 August 2022].
- Teng, F., Quoquab, F., Hussin, N., and Mohammad, J. (2016). Re-defining sustainable development values and its facets based on developing country perspective. *Journal of Advances in Humanities and Social Sciences*, 1(2): 1–13.
- Tian, J. (2020). Impact of cultural diversity in multi-national project teams: A case study in Chinese cultural impact. *Revista Argentina de Clínica Psicológica*, 29(3): 1223–1235.

- Tongco, M.D.C. (2007). Purposive sampling as a tool for informant selection. *Ethnobotany Research and Applications*, 5: 147–158.
- Tung, R.L. and Verbeke, A. (2010). Beyond Hofstede and GLOBE: Improving the quality of cross-cultural research. *Journal of International Business Studies*, 41: 1259–1274. <https://doi.org/10.1057/jibs.2010.41>
- Turner, J.R. and Müller, R. (2003). On the nature of the project as a temporary organization. *International Journal of Project Management*, 21(3): 1–8. [https://doi.org/10.1016/S0263-7863\(02\)00020-0](https://doi.org/10.1016/S0263-7863(02)00020-0)
- Venter, F. (2005). Project management in Ghana: Expectations, realities and barriers to use. *The Journal for Transdisciplinary Research in Southern Africa*, 1(1): 77–96. <https://doi.org/10.4102/td.v1i1.305>
- Walker, A. (2015). *Project Management in Construction*. 6th Ed. New York: John Wiley & Sons.
- Yen, A.C. and Pulatov, B. (2007). International differences in project planning and organizational project planning support in Sweden, Japan, Israel and Malaysia. *Journal of Project Management*, 1(1): 1–85.