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Regular Article

Deciphering cultural differences between local and foreign contracting firms using Hofstede's national culture model in the construction industry

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ABSTRACT

Most construction works in the Zambian construction industry are executed by foreign contractors who are eligible to tender for large-scale construction projects. These works amount to 85% of the national contract value. Foreign contractors are seen as better performers in project deliverables of time, cost and schedule compared to local contractors. This research investigated the magnitude to which national culture impacts contractor performance in the Zambian construction industry. A comparison of culture and performance was made between foreign and local firms in the two top construction categories, using Hofstede's national culture framework to determine performance improvements of local contractors. A total 112 questionnaires were collected and SPSS was used to analyse the data descriptive statistics and inferential statistics. Findings revealed that foreign contractors manage uncertainty avoidance in a more superior manner compared to local contractors. The clients rated foreign contractors as better performers apart from health and safety. The study established that Local contractors must improve their performance if they are to compete favourably with the foreign contractors' success record.

1. Introduction

Like any other industry, firms in the construction industry that perform well by attaining objectives set for a given project normally get more contracts. Success is normally measured by project completion on time, within set cost, attaining the prescribed quality parameters and minimal health and safety setbacks as stated in [Smith et al. \(2014\)](#), [Nguyen & Watanabe \(2017\)](#), [Silva et al. \(2016, p. 21\)](#) and [Nguyen \(2019\)](#). In the construction phase, the contractor is required to meet the parameters with the aid of clients and consultants depending on the procurement method used. The ability by contractors to deliver projects and attract more clients depends on how well the contractor performs and the extent to which the client is satisfied, [Shahid et al. \(2019\)](#) and [Mbachu and Nkado, \(2006\)](#). Desired performance by the contractor has been a source of client satisfaction, [Cheung et al. \(2012\)](#). The culture may be at a personal, organisational, or national level. The overall study considered organisational and national culture, nevertheless, the focus of this paper was limited to national culture which was the focus of the

study because it has significant effects of leadership style, communication, motivation, organisational design ([Khan & Law, 2018](#)). It has been established in the literature that culture is an essential determinant of management practice; hence it is perceived as a critical success factor for construction project(s), [Abeysekera \(2002\)](#) and [Cheung et al. \(2012\)](#). [Jaafar \(2020\)](#) found that project-based organisations should give much attention to culture as it heavily influences success. Moreover, [Horii et al. \(2005\)](#) suggest that project team performance results are better when management practices are consistent with national cultural core values.

Clients in the Zambian construction industry seem to find foreign large-scale contracting firms more preferred for project execution and delivery compared to local contractors as they account for 85 % of projects in terms of value ([NCC, 2019](#); [Chilongo & Mbetwa, 2017](#)). The endorsement is on account of the foreign contractors being perceived as better performers in regarding time, cost, and schedule performance of projects. Furthermore, [Chilongo & Mbetwa \(2017\)](#) observed that the success of foreign contracting firms is due to their devotedness and

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loyalty towards projects compared to local contractors. Non-cultural attributes can be used to explain foreign contractors' successful delivery of projects compared to local contractors. Some of these attributes include: contractors' having financial sponsorship from their governments (Chinese contractors), easily available credit, and equipment & manpower (Chen & Orr, 2009) from their countries of origin as they tend to be more advanced in these areas. Chen & Orr (2009) further analysed the systems that the Chinese government has put in place to pave way for Chinese contractors' gateways into Africa through the Bank of China and the respective threats and opportunities that exist. The number of Chinese construction firms has since grown to this day. Besides, Chilongo and Mbetwa (2017) and Ngomi (2017) suggest that work ethics and culture found in foreign contractors play a significant role in scoring their success associated with project delivery. Although it can be argued that there can be cultural diversity within some countries, Minkov & Hofstede (2012) found that there are usually clusters along national lines. This, therefore, makes national culture an important attribute to study in demystifying the difference in national culture between foreign and local contracting companies. It is however unclear on the aspects of their national culture that enable foreign contractors to be more successful than local contractors. Considering that within the Zambian construction industry, some local firms appear to be performing better than others, it is unclear if national culture could unveil performance difference between these two entities. Moreover, Martin et al. (2016) found that national culture has strong influence in performance, making the national culture subject pertinent for research in the Zambian construction sector.

National Council for Construction (NCC) registers contractors in Zambia under various grades as follows: (1–6) broken down as large category (1–2), medium category (3–4) and small category (5–6) scale (NCC, 2019). The contractors can register in the main categories of building and housing, civil engineering works, road works and earthworks, mining services, mechanical engineering works, electrical and telecommunications and specialist works. The large-scale category of contractors as described constitute foreign and local contractors, who impliedly in terms of capacity, have the same financial, technical, plant & equipment, and managerial prowess to bid for the same projects whose values range from greater than ZMW 150m (US\$ 7.5m) to unlimited for grade 1 and ZMW25m (US\$ 1.25m) to ZMW 150 (US\$ 7.5m) for grade 2 (NCC, 2018). What is unknown is the extent to which national culture contributes to performance differences between these two types of firms. The research therefore aimed to establish whether national culture could unlock the differences in performance between local and foreign contractors. This research formulated the following objectives to establish whether national culture had an influence on performance difference between foreign and local contractors;

- To establish the national cultural practices by contractors and their effect on performance in the Zambian construction industry.
- To investigate perceptions on performance of local contractors and foreign contractors from a national culture point of view.

Literature has explained relationships between different types of culture and performance in terms of a culture heavily influencing performance as stated by Walsh & Walker (2020) and Cheung et al. (2012). A study on national culture could help local contractors in identifying national cultural practices that make foreign contractors perform better hence preferred by clients in the local construction industry. The next section reviews literature on national culture.

2. Literature review

This section presents literature review on types of national culture and its influence on project performance.

2.1. Culture

Culture is defined differently depending on the discipline one is coming from such as psychology, sociology and anthropology. Culture is perceived as characteristics and knowledge of a category of people, which includes values, beliefs, customs, and norms that are shared (Oxford dictionary, 2015, p. 364). Schwartz (1992, p. 47) defines the culture of a group as a pattern of shared primary assumptions learnt by a group in solving its problems of external adaptation and internal integration that has proven track record to be considered reliable qualifying them to be taught to new groups members. Hofstede (1983) understands culture as the collective setting of the mind, which differentiates members of one human group from another and leads them to live their lives in ways that are shaped by unwritten social codes. This is the understanding of culture adopted for this research. The group of people could be at the national, regional or organizational level. The culture practices depending on how they are received by fellow employees or clients determine whether the organisation is successful or not Martin et al. (2016). It is not common to have members of a nation practice culture that does not align with their national culture when they perceive their national culture as inhibiting. This view is supported by Baskerville (2003) who asserted that a nation may have many cultures or cultural orientations although Minov and Hofstede (2012) reinforce the fact that although differences may exist there are common national cultural lines that are followed.

2.2. National culture

National culture can be defined as the collective mental configuration of a society (Hofstede, 1983). The nature of culture practised has significant implications for the organisation and its management (Munch, 1982; Touburg, 2016). This mental programming is carried on into the organisational environment where these members of society work (Hofstede, 1983, Hofstede, Hofstede & Minkov, 2005). Various national culture studies exist in the literature each author(s) with their own identified dimensions of national culture. National culture has been studied by Kluckhohn and Strodbeck (1961); Schwartz (1992); Schwartz (1999); Hampden-Turner and Trompenaars, (1997); House et al. (2004); Hofstede (1984); Hofstede (2001) among others.

Kluckhohn and Strodbeck (1961) identified orientations of human nature, man nature, time, activity relational as parameters of culture (Hills, 2002). This theory has been useful in the study of human psychology and cultural mores of taxes, trade, utilities and changes in culture mores over time (Hills, 2002).

Munch (1982, p. 771) identified affective-neutrality, self-orientation-collective orientation, universalism-particularism, ascription-achievement; specificity-diffuseness as the center of their theory. The theory simply summarized motives as part of human action making ends, purposes and ideals to be considered (Khan & Law, 2018). On the other hand, Schwartz (1992, 1999) formulated a values-based culture with the dimensions of conservatism vs autonomy; hierarchy vs egalitarianism; mastery vs harmony as their dimensions of national culture. The values in summary are that values are beliefs; values refer to target goals; values go beyond specific actions and scenarios; values serve as benchmarks or criteria; values are listed by importance and that the relative importance of multiple values guides decision making (Schwartz, 1999; Hampden-Turner & Trompenaars, 1997) identified seven dimensions of culture (universalism vs. particularism; individualism vs. communitarianism; specific vs. diffuse; neutral vs. emotional; achievement vs. ascription; sequential time vs. synchronous time; internal direction vs. outer direction) to help people from different cultures understand each other as they work together as their study established that people from different cultures differ in specific and predictable ways Munch (1982), House et al., (2004) pointed out power distance; uncertainty avoidance; assertiveness; institutional collectivism; in-group collectivism; future orientation; performance

orientation humane orientation; gender egalitarianism as dimensions of national culture. It should be observed that the dimensions are not so different from Hofstede dimensions and that each researcher formulated dimensions in arrears of specific research.

In 1980 the cultural dimensions theory was developed by Geert Hofstede. It is a framework used to comprehend the various differences in areas of culture in many countries. It is further used to understand how business is conducted in different cultures at an individual, collective and universal level of mental programming. It has features that include power distance, uncertainty avoidance, individualism vs collectivism and masculinity vs femininity, long-term vs short-term orientation and indulgence vs restraint. The Hofstede national culture model has faced several criticisms. While [Touburg \(2016\)](#) argues that the model ignores cultural change and does not take into account non-cultural influences, [Liu et al. \(2015\)](#) added lack of considerations of industrial impacts while [Walse and Walker \(2020\)](#) contents that it is an attempt to measure the unmeasurable. Nevertheless, Hofstede's national culture has been used extensively for research by [Birnberg and Snodgrass \(1988\)](#), [Chow et al. \(1999\)](#) & [Jackson \(2001\)](#) all cited in [Williamson \(2002\)](#), [Minkov \(2018\)](#) and [Kim \(2017\)](#) hence the utility of the model in this research as it is the most tested model in determining national culture despite its criticisms. Additionally, all other management aspects of national culture are built on Hofstede's work ([Strychalska-Rudzewicz, 2016](#)). The next section discusses the theoretical framework based on Hofstede national culture in more detail.

2.3. Theoretical framework: Hofstede national culture model

2.3.1. Power distance

Power distance is defined as the degree to which the less prominent members of institutions and organisations within a company anticipate that power is shared unjustly ([Hofstede et al., 2005](#); [Martinez-Fiestas et al., 2017](#); [Pheng & Yuquan 2002](#)). Power distance aids in recognising the disparity between members of an organisational society and to identify the impact of leaders over subordinates. In companies where this measure is low, the dependence by staff members on leaders is limited: there is more interdependence between the superiors and their juniors, resulting in consultative management style. This is according to the study by ([Machado & Carvallho, 2008](#)) which further explains that where the power distance index is high; there is significant reliance by subordinates on their leaders. Where power distance index is high subordinates react by preferring or by absolutely rejecting dependence, embracing a standpoint of counter dependence but with a negative implication. When there is a low power distance more egalitarian is expected compared to the hierarchy ([Kim, 2017](#)). [Martinez-Fiestas et al. \(2017\)](#) states that when the power distance is low then in that particular society, people are perceived to have the same rights and peacefulness is common and vice versa when the power distance is high.

2.3.2. Uncertainty avoidance

[Hofstede et al. \(2005\)](#), [Okolie & Okoye \(2012\)](#), [Pheng & Yuquan \(2002\)](#) define uncertainty avoidance as the degree to which the members belonging to a particular culture feel threatened by uncertain or unknown circumstances. Countries with higher control of uncertainty normally avoid risk ([Martinez-Fiestas et al., 2017](#); [Strychalska-Rudzewicz, 2016](#)). The construction industry is by nature risky and uncertain at times ([Smith et al., 2014](#); [Ward et al., 1991](#)). Uncertainty avoidance shows the depth to which a culture configures its members to feel either uncomfortable or comfortable in informal circumstances which are novel, unknown, surprising, or different from usual practices ([Hofstede et al., 2005](#)). In the construction industry contractors would rather deal with the risk that they can manage than uncertainty ([Smith et al., 2014](#); [Ward et al., 1991](#)). [Hofstede \(1983\)](#) developed an index that measures levels of uncertainty avoidance in order to compare companies and countries to one another. A low score indicates that the members of a particular group are more comfortable with ambiguity and unlikely to

be risk averse while remaining less dependent on rules that govern the structure ([House et al., 2004](#)). A high score would then indicate un-comfortability among members in relation to issues of entrepreneurship, risk-taking and high dependence on structured rules [Martinez-Fiestas et al. \(2017\)](#). [Liu et al. \(2015\)](#) shows that project risks are viewed and handled differently among varying national cultures.

2.3.3. Individualism or collectivism

The extent of individualism or collectivism is the measure of responsibility by the members of a society towards those around them; it shows how levels of interference that people can tolerate groups in making decisions that affect their lives ([Machado & Carvallho, 2008](#)). [Hofstede et al. \(2005\)](#) expressed individualism and collectivism as "individualism relates to societies in which the links between individuals are weak: everyone is expected to take their own responsibility or that of their close family. Collectivism in the contrary refers to societies in which people from childhood and onwards are integrated into a strong, organised group which protects the members through their lifetime in exchange for unquestioned dependability ([Berry et al., 2002](#)). With a high index of the individualism attribute, individualistic tendencies are expected. Project team performance is usually successful when there is team culture ([Dumitrascu-Balau & Dumitrascu, 2019](#)). [Minkov \(2018\)](#) further adds that this dimension of national culture is robust. However, [Kessapidou and Varsakelis \(2002\)](#) notes that the higher the individualism values of the foreign companies, the higher the performance of its associate in a society.

2.3.4. Masculinity v femininity

The masculinity versus femininity value speaks on the level to which society promotes and rewards behaviours that are defined by masculine or feminine adjectives and division of responsibilities that are demarcated by gender ([Hofstede et al., 2005](#); [Hofstede, 1998](#); [Martinez-Fiestas et al., 2017](#); [Pheng & Yuquan 2002](#)). The difference between the two is that in a masculine society, they work to live, but the feminists live to work. The traditional masculine social values that predominate in the masculine society are that the hero wins; the great are valuable and the small are disgraceful; the winner is uplifted and the loser is despised; approval is conferred on the forceful, whereas sustaining and looking a better quality of life and relationships is secondary ([Machado & Carvallho, 2008](#)). [Hofstede \(1998\)](#) believed that people who come from the same culture usually behave in the same way because these values have been inbuilt into their lives so wherever they go they will behave in that particular way. It is from this premise that foreign contractors are being observed and studied as they are expected to behave in a particular way, not so different from how they would behave in their countries of origin although [Minkov \(2018\)](#) argues that this dimension may lack coherence. With a high masculinity index, the implication is that power is more important and there is a strong emphasis on performance compared to welfare in a femininity society ([Kim, 2017](#)).

2.4. Long-v short-term orientation

Low Long-Term Orientation (LTO) (short term) depicts that preference is to maintain time-honoured practices and norms with a change in society viewed as suspicious. On the other hand, a high index depicts a pygmatic society (long term) ([Martin et al., 2016](#)). In cultures that embrace long-term orientation, there is a belief that truth is a function of time, situation, and context with the capacity to adopt practices in changing situations, alongside a high inclination for savings and investments, foresight, and insistence in obtaining results. In contrast, a short-term orientation shows high tributes for traditions, with a moderately low preference for savings and investments and getting speedy results ([Hofstede, 2001](#)). Additionally, in short term orientations of importance are the bottom line, leisure time, protection of one's image, and personal stability (*Ibid*). This dimension is however doubted by [Fang \(2003\)](#) and [Williamson \(2002\)](#) due to its philosophical flaw.

Nevertheless, when the index for this dimension is high; long term goals are prioritised.

2.5. Indulgence vs. restraint

Indulgence vs Restraint relay the extent to which societies can apply control over their dispositions and essentials [Martin et al. \(2016\)](#). The measure of indulgence vs. restraint centers on enjoyment. A situation where basic human drives and fulfilment are allowed for translating to indulgence because control is lost for enjoyment of life. The control of the latter through strict social norms constitutes restraint within a group or society. Restraint denotes a society that overpowers fulfilment while indulgent societies allow fulfilment ([Hofstede, 2001](#)). Therefore, with a high restraint/indulgence index happiness is always good.

Hofstede’s model has been extensively used for national culture studies. Although it has its critics in terms of philosophy, it is the most tested model for studying national culture ([Fang, 2003](#)). Culture is inherently a difficult area for studies in terms of its measurement and operationalisation of its dimensions. Nevertheless, national culture appears to significantly affect the success or failure of a firm. In the final analysis, culture is viewed as a factor that evolves to promote survival of nations, firms and individuals. Further, [Proverbs & Holt \(2000\)](#) stated the performance of contractors working on one project is made complex when these contractors are from different countries that are driven by various cultures and practices.

3. Methodology

This section presents the methodology that was used to gather data, analyse it validate it. The section contains the following section: Research design, population and sampling approach, data collection techniques, analysis tools and ethical considerations.

3.1. Research design

The philosophical underpinning for this research was a positivist one because various studies have been conducted on culture and various attributes have been defined using cultural inclination leaning towards a positivist approach ([Barinanaga, 2007](#); [Sackmann, 2020](#), pp. 17–33). In this study objectivity of cultural practice was sought from respondents using an objective approach. The motivation was therefore underpinned by deducing nature of culture being used by large scale contractors. This was obtained through a survey with large scale contracting firms (foreign and local). Further a survey was conducted with clients that had contracted these large-scale these contractors ([Table 1](#)).

3.2. Population, sampling and response rate

This was attained carrying out a survey with the respondents that constituted construction clients and large-scale contractors mainly grades 1 and 2 of the NCC register. All foreign contractors are registered in these two groups making it a suitable selection for comparison purposes with Zambian contractors registered in that category as indicated

Table 1
Questionnaire survey.

Category	Population size	Sample size	Questionnaires collected	Percentage Response (%)
Foreign contractors (Grade 1–2)	79	66	57	86
Local contractors (Grade 1–2)	60	52	43	82
Clients	undefined	20	12	60
TOTAL		138	112	81

in [Table 1](#). The population for the contractors was 79 (foreign) and 60 (local) making a total of 139 which was used for this study. The National Council for construction report for 2021 which is the latest shows that the total number of contractors in grades 1 and 2 rose from 139 in to 379 in 2021. Data was collected through self-administered questionnaires using a cross sectional approach. [Dalati and Gomez \(2018\)](#) states that self-administered questionnaires or surveys are designed to assist the respondents to give feedback easily. Other advantages include low cost and reduced bias and error. Descriptive and inferential statistics were applied for data analysis. For the clients, snowball sampling was used because of the undefined population as indicated in [Table 1](#). Random stratified sampling was used for contractors in grades one and two sectors. Contractors were randomised by assigning numbers to them from the list of contractors registered with NCC. According [Rowley \(2014\)](#), population is divided into groups by characteristics appropriate for the research questions, after which a sample is selected from each group. Further, [Shi \(2015\)](#) explains that stratified sampling involves the dividing of the parent population into several types or layers and then sampling randomly from each layer and not necessarily sampling randomly directly from the parent population which is the method that this study adopted. The advantage of this method is that it narrows the difference between different types of individuals through classification, which is conducive to extracting representative samples and reducing the sample size.

Out of the 6 NCC grades, the two top grades that house foreign and large contractors were stratified and later randomly sampled. The number of participants in the study area is low resulting in the small sample size especially for clients. Despite the small sample size the maximum number of respondents for clients and contractors were identified in the country leading to reliable results. Other studies in the same industry and study area have utilised smaller samples with reliable results achieved such as, [Sarkar & Mangrola, 2016](#); [Owusu-Manu et al. \(2017\)](#); [Pheng et al. \(2016\)](#); [Pheng & Gracia, 2002](#); [Muleya et al. \(2020\)](#) had a sample size of 35, 30, 32, 23 and 43 participants correspondingly. One of the reasons advanced for the small samples was the small population as is the case in this study, however 3.6 and 3.7 present reliability and validity tests respectively.

The contractors were from grade one and two as shown in [Table 1](#) because there are no foreign contractors in grades 3 to 6 from the NCC register for all contractors. NCC is the regulatory and registration body of all contractors in Zambia. A 95% confidence level and interval of 5% was used in determine the contractor sample. Data was collected through self-administered questionnaires. The attributes of restraint vs indulgence and Long-v Short-term orientation were not studied due to the cross sectional nature of the study. Snowball was used as the sampling method for clients. This was because of clients working with large scale contractors was undefined in the building category. Numbers were assigned to NCC list of contractors in Grade 1 and 2. These were then picked at random as a way of coming up with a sample for contractors. The target areas were the Copperbelt and Lusaka provinces as this accounted for over 80% of large-scale contractor head offices and possible clients in the country.

3.3. Data collection

According to [Saunders et al. \(2009\)](#), a questionnaire is described as a research instrument that is used for primary data collection from a target sample for the purposes of obtaining first hand research information. The questionnaire contains the necessary information required for attaining research objectives. In this research, the questionnaires were divided into sections.

- Company information
- National culture practiced within the company
- Company performance

General information about a company was collected to consider the ownership whether the majority was foreign, local or shared between local and foreign. This gave an idea of cultural influence. The nature of projects engaged in and how long company had been in existence was required. The whole study focussed on organisational culture and national culture; however, only national culture is reported in this paper. The cultural dimensions of interest were Power distance, uncertainty avoidance, masculinity v femininity and individualism v collectivism. The main reason of the study was performance difference between local and foreign owned contracting organisations. Therefore the cost, time and quality performance were investigated from both the clients and contractors' perception. Studies by [Sibiya et al., \(2015\)](#) and [Al-Hashemi \(2016\)](#) show that time, cost and quality usually referred to as the golden triangle constitute part of the many the performance indicators on construction projects which includes health and safety. This confirms that contractor performance may only be influenced by culture to a certain extent because of many other factors involved at stated.

With the nature of the study not requiring a neutral point, a four point likert scale based was selected in order to avoid a non-determination of a cultural practice position within each organisation. [Dolnicar et al. \(2011\)](#) argues that having more points for scoring on a Likert Scale makes the responses to prolong, and introduces instability in measurement, a point that is opposed by other scholars. The Likert scale used in this study was based on four points ranging from strongly disagree to strongly agree.

3.4. Data analysis and interpretation of findings

SPSS was used to generate descriptive statistics and Mann-Whitney U based inferential statistical analysis were used process the responses contractors because the data was not normally distributed. Additionally, the Mann-Whitney U test was selected because it is suitable for small samples. The Mann Whitney test measures differences between two independent groups. The test was considered significant at $P = \text{or} <$ than 0.05. In determining the Index for Power distance, uncertainty avoidance, masculinity v femininity and individualism v collectivism score of 1 (lowest) to 100 (highest) presented in form of percentages were used where 1–49 was viewed as low, 50–59 as moderate and 60–100 as high ([Hofstede, 2001](#)).

3.5. Ethical considerations

Respondents were informed before responding to the questionnaires that they were free to withdraw from the survey at any point and that their identity would be kept confidential. This action gave them confidence that their rights and privacy would be respected. This was because many of the respondents were not comfortable to disclose their identity for this research work. [Abdelmoety et al. \(2022\)](#) state the importance of ethical consideration including in matters that involve cultural aspects.

3.6. Reliability test

The Cronbach's alpha test was used to establish the reliability of the research instruments used in this study. The Cronbach's alpha (α) of 0.855 was established in 69 items making the research instruments used reliable. ([Durdyev & Mbachu, 2018](#); [Taber, 2018](#); [Reynaldo and Santos, 1999](#)) state that Cronbach's alpha is largely applied in many studies because it is an indicator of reliability for instruments, scales used and internal consistency. A value of 0.70 or higher is widely acceptable. For the client data, only descriptive statistics in the form frequencies and percentages were utilised because the sample has less than 30 respondents, an approach that is supported by [Saunders et al. \(2009\)](#).

3.7. Validity test

Validation is defined as a process examining collected data for

purposes of establishing that elements associated with errors are screened ([Vasilecas & Lebedys, 2007](#)). Randomisation is a popular method of validating research data and its associated instruments as reported by [Pajouheshnia et al. \(2019\)](#) and [Schmidt et al. \(2020\)](#), and as a result, therefore, it was used to identify contractors in the NCC category of grades 1 and 2 as indicated in section [Table 1](#). Further, the reduced number of contractors in the two groups reduced the risk of errors in the data because the population was verified through head count as opposed to published information which is prone to duplication especially where one contractor's name could appear in more than one group of the NCC data base.

3.8. Normality test

The normality test was carried out using Kolmogorov-Smirnov and Shapiro Wilk test prompted by the sample of less than 300. The two tests resulted in a p value of 0.0000 thereby rejecting the hypothesis that data was normally distributed. This led to conclusion that the non-parametric test was suitable for given data. Frequencies and percentages were applied to client's data underpinned by sample whose number was below 300 as indicated by [Saunders and Townsend \(2016\)](#).

4. Findings

This section comprises findings in line with objective achievement of the study. The first objective positioned to compare national cultural practices between foreign and local contractors in the Zambian construction industry. The second objective was positioned to compare perceptions on performance of foreign contractors to that of local contractors.

4.1. Characteristics of the data

Cronbach alpha test was carried out and further a normality test was done using Shapiro Wilks test using a single tail test. The significant test alpha was set at 0.05. It would entail to reject the hypothesis when alpha is less than the threshold. The null hypothesis was a sample arising from a normal distribution and the alternative hypothesis being the sample not from a normal distribution. The Shapiro Wilk test ranged from 552 to 750 ($df = 3$ to 37, $p = 0.000-0.001$). Therefore, it was found that there was strong statistical evidence to indicate that the sample was not drawn from a normal distribution. The Cronbach Alpha was found to be 0.855 for the 69 items in the questionnaire indicating consistency of the instrument. The overall response rate was 81% as shown in [Table 1](#).

4.2. Respondent characteristics

[Table 1](#) shows that 20% of the respondents were female and 80% male which presents the sample demography data. The respondents consisted of clients 83% from the private sector and 17% from the public sector with contractors foreign (57%) and local contractors (43%) from grade 1 and 2 categories. The foreign contractors were from different ethnicities namely African (South African, Tanzanian, Ugandan, Malawian, Mozambican), Middle East and Asia (Chinese, Israelite, Lebanese, Korean, Indian) and Europe (Polish, British, Belgian and Spanish). 77% (44) of the foreign contractors were of Chinese origin and other countries accounted for 23% (13). The respondents were not agreeable to be identified by country of origin therefore the reporting of results was based on local and foreign contractors only. Half of the contractors' respondents, were from management while the other half were from other sections. Additionally, 4% of the respondents were upgrades from a lower category grade (e.g., moving from contractor grade two to one or from 3 to 2). 10% of the respondents first time registrations in the contractor grade one or two and over 84% were renewals. The majority of the respondents had operated as large-scale contractors with unlimited capacity for those in Grade 1 for some time.

4.3. National culture as perceived by contractors

The literature has pointed out that the national culture differs from nation to nation and may account for the wealth or poverty of certain nations even in the presence of adequate factors of production, Hofstede et al. (2005). Perceptions on power distance, uncertainty avoidance, masculinity v femininity and individualism v collectivism were compared between local and foreign-owned contractor businesses the results are shown in Table 2.

4.4. Power distance

Overall findings for the construction industry in Zambia were that the power distance was perceived to be high in both local and foreign firms. Over half of the respondents (61%) perceived the power distance to be high while 39% perceived it to be low in their contracting firms. The implication of this is that hierarchy is embraced for leadership and management purposes. From the findings in Table 2, there are no significant differences in the power distance of local and foreign firms. However, it appears that there are more managers who make decisions without consulting subordinates and those who use authority to deal with subordinates in foreign firms compared to local firms. Yet opinions

Table 2
National culture attributes among foreign contractors and local.

National Culture parameter	Share	N	Mean Rank	Sum of Ranks	Z	Asymp sig (2 tailed)	Mann-Whitney	Wilcoxon W
Power distance								
Managers make most decisions without consulting subordinates	Foreign	57	53.05	3023.00	-1.253	0.210	1080.000	2026.00
	Local	43	47.12	2027.00				
	Total	100						
Managers use authority and power when dealing with subordinates	Foreign	57	54.89	3128.50	-1.901	0.570	975.500	1921.500
	Local	43	44.69	1921.50				
	Total	100						
Managers do not often ask for the opinion of employees	Foreign	57	48.71	2776.50	0.789	0.442	1375.500	2273.500
	Local	43	52.87	2273.50				
	Total	100						
Employees do not disagree with management decision	Foreign	57	50.32	2868.00	0.078	0.938	1236.000	2182.00
	Local	43	50.74	2182.00				
	Total	100						
Uncertainty avoidance								
Job requirements and instructions are spelled out in detail	Foreign	57	54.08	3083.00	-1.546	0.122	1021.500	1967.500
	Local	43	45.76	1968.00				
	Total	100						
Workers closely follow instructions and procedures given by managers	Foreign	57	51.76	2950.00	-0.553	0.580	1153.500	2099.500
	Local	43	48.83	2100.00				
	Total	100						
There are rules and regularities workers are expected to follow in the organisation	Foreign	57	48.40	2759.00	0.956	0.339	1345.000	2291.000
	Local	43	53.28	2291.00				
	Total	100						
Standard operating procedures are helpful to employees on the job	Foreign	57	46.11	2628.00	2.058	0.040	1476.000	2422.000
	Local	43	56.33	2422.00				
	Total	100						
Masculinity Vs Femininity								
Meetings are usually run more effectively when they are chaired by a man	Foreign	57	51.46	2933.00	-0.397	0.691	1170.500	2116.500
	Local	43	49.22	2117.00				
	Total	100						
Men usually solve problems with logical analysis	Foreign	57	54.14	3087.00	-1.513	0.130	1017.00	1963.00
	Local	43	45.65	1963.00				
	Total	100						
Women solve problems with intuition	Foreign	57	51.15	2915.50	-0.277	0.782	1188.500	2134.500
	Local	43	59.64	2564.50				
	Total	100						
Solving organisational problems usually requires an active forcible approach which is typical of men	Foreign	57	50.70	2890.00	-0.085	0.932	1214.000	2160.000
	Local	43	50.23	2160.00				
	Total	100						
Individualism vs collectivism								
Group welfare is more important than individual rewards	Foreign	57	49.87	2842.50	0.272	0.785	1261.500	2207.500
	Local	43	51.34	2207.50				
	Total	100						
Being accepted by the members of your workgroup is very important	Foreign	57	52.12	2970.80	-0.694	0.448	1133.000	2079
	Local	43	48.35	2079.20				
	Total	100						
Employees should pursue their goals after considering the welfare of the group	Foreign	57	54.50	3106.50	-1.719	0.86	997.500	1943.500
	Local	43	45.20	1943.50				
	Total	100						
Group success is more important that individual success	Foreign	57	48.95	2790.00	0.670	0.503	1314.000	2260.000
	Local	43	52.56	2260.00				
	Total	100						

of employees are sought for more often in local firms than in foreign ones. In both local and foreign firms, there seems to be an equal perception of not disagreeing with management decisions.

4.5. Uncertainty avoidance

Uncertainty in the construction industry seems to determine the success of a project. Uncertainty could lead to failure in project execution or not meeting of cost, quality, schedule and safety requirements. In the Zambian construction industry, the desire to avoid uncertainty on projects is quite high implying that ambiguity creates anxiety. The majority (86%) of respondents indicated that they normally want to be certain about issues associated with a project. When it came to uncertainty avoidance there was a significant difference ($p = 0.004$) in the way the perception of standard operating procedures is supportive to employees on the job by local and foreign contractors. There is a significant difference in the aforementioned, $U = 1476.00$, $z = -2.058$, $p = 0.004$, two-tailed.

4.6. Masculinity v femininity

The construction industry is generally world over is male-dominated. It is therefore not surprising that the construction industry in Zambia is perceived as masculine by 65% of the respondents though femininity is acknowledged by 35% of the respondents thereby showing high index where power is seen to be more important. The results on male dominance in the construction industry are consistent with studies by Hanna et al. (2020) and Akinlolu and Haupt (2019) which state that the construction industry remains male dominated.

4.7. Individualism v collectivism

The construction industry thrives on people working together as a team hence the rise in collaborative working relationships, Smith et al. (2014). However, the perception in the Zambian construction industry among large scale contractors is that 78% practice individualism and 22% practice collectivism as indicated by the respondents. This means that individualism is high in the industry. This showed that there is a significant value that is placed on people's time and their need for privacy and freedom, social life and work-life do not mix within the industry for both local and foreign contractors. There were higher individualistic tendencies for foreign contractors. Kessapidou & Varsakelis (2002) states that this is necessary for a better performance hence findings are congruent in the Zambian context with the aforementioned authors. There were no significant differences in the findings concerning the attributes measuring individualism and collectivism as shown in Table 2. Nevertheless, group welfare and success are perceived at a higher importance level by local contractors compared to foreign while an individual being accepted by the group and employees pursuing personal targets after taking into account the welfare of the group is practised to a higher level by foreign contractors compared to local.

Table 3
Overall national culture between local and foreign contractors.

National Culture attribute	Share	N	Mean Rank	Sum of Ranks	Z	Asymp Sig (2 tailed)	Wilcoxon W	Mann-Whitney U	Effect size
Power distance	Foreign	57	55.04	3137.50	-1.871	0.061	1912.500	966.500	0.187
	Local	43	44.48	1912.50					
	Total	100							
Uncertainty avoidance	Foreign	57	45.60	2599.00	-2.082	0.037	2599.000	946.000	0.208
	Local	43	57.00	2451.00					
	Total	100							
Masculinity V Femininity	Foreign	57	52.18	2974.00	-.686	0.493	2076.000	1130.000	0.686
	Local	43	48.28	2076.00					
	Total	100							
Individualism V Collectivism	Foreign	57	51.86	2956.00	-.548	0.584	2094.000	1148.000	0.584
	Local	43	48.70	2094.00					
	Total	100							

This outcome constitutes the achievement of objective one which states that the only significant difference between foreign firms and local firms in terms of national culture was uncertainty avoidance where foreign firms were superior.

4.8. Perceptions on performance

4.8.1. Contractors' perceptions on performance

Statistically, there is no significant evidence to indicate that foreign contractors viewed the performance requirements of quality, time, cost and health & safety differently from local contractors $U = 1028.50-1190.50$, $z = -1.514-0.730$, $p = 0.130-0.799$ two-tailed in Table 4. This shows that both sets of contractors view these requirements of equal importance to the client for them to attain these performance milestone. It also shows that both local and foreign contractors do not view their performance to be different from each other.

To have a more objective view on the performance of contractors in Table 4 clients were asked on the performance of contractors in terms of cost, time, quality and health and safety and results are discussed in section 4.4.2.

4.9. Clients' experiences with contractors

4.9.1. Cost management

Fig. 1 shows clients satisfaction on cost management performed by foreign and local contractors. Fig. 1 clearly shows that clients prefer foreign contractors to local contractors when it comes to cost management in specific areas of completion within budget, cost implications from variations and better management of cost overruns. Results indicate that clients and contractors do not share similar views on cost management in comparison to the results in Table 4 because clients submitted that while both sets of contractors were performing, foreign contractors had an upper hand.

4.9.2. Time management

Fig. 2 shows the clients satisfaction levels on time management by foreign and local contractors. It is clear from Fig. 2 that clients prefer foreign contractors to local contractors when it comes to time management in specific areas of project delivery within time and adherence to work sections time schedule. This is in contrast to Table 4 where contractors self-rating never picked the differences. Clients' response can be deemed to be more reliable being end users. Interestingly, there were insignificant cases of dissatisfaction on both foreign and local contractors in terms of time management.

4.9.3. Quality management

Fig. 3 shows clients satisfaction levels on quality management by foreign and local contractors. The figure still shows superiority by foreign contractors from the clients perspective in areas of adherence to specified quality standards and after sales service.

Table 4
Showing that hypothesised performance is the same between local and foreign contractors.

Performance Attribute	Contractor	N	Mean Rank	Sum of Ranks	Z	Asymp. Sig. (2-tailed)	Mann-Whitney U	Wilcoxon W	Effect size
Cost	Foreign	57	49.70	2833.00	-.332	0.740	1180.000	2833.000	0.032
	Local	43	51.56	2217.00					
	Total	100							
Time	Foreign	57	49.89	2843.50	-.255	0.799	1190.500	2843.500	0.026
	Local	43	51.31	2206.50					
	Total	100							
Quality	Foreign	57	52.26	2979.00	-.730	0.465	1125.000	2071.000	0.073
	Local	43	48.16	2071.00					
	Total	100							
Health and safety	Foreign	57	53.96	3075.50	-1.514	0.130	1028.500	1974.500	0.151
	Local	43	45.92	1974.50					
	Total	100							

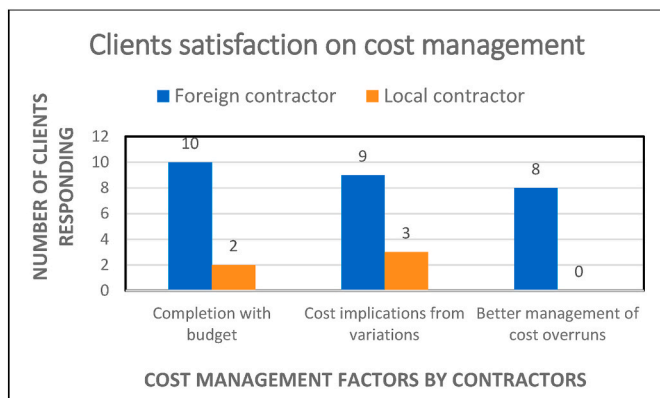


Fig. 1. Clients' satisfaction with contractors on cost management.

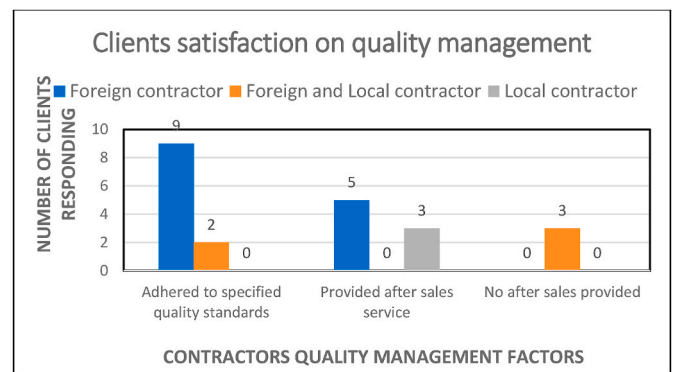


Fig. 3. Clients' satisfaction with contractors on quality management.

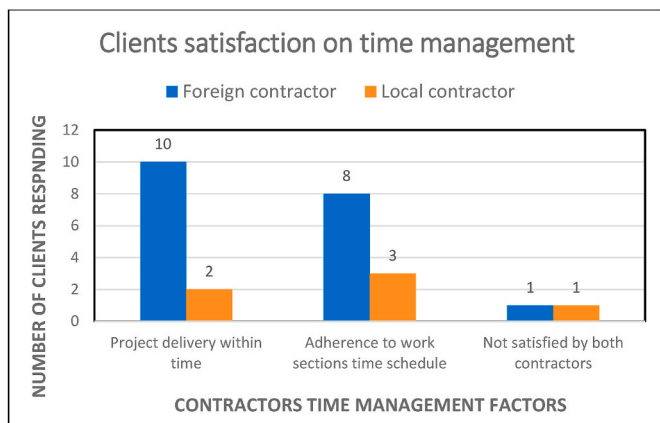


Fig. 2. Clients' satisfaction with contractors on time management.

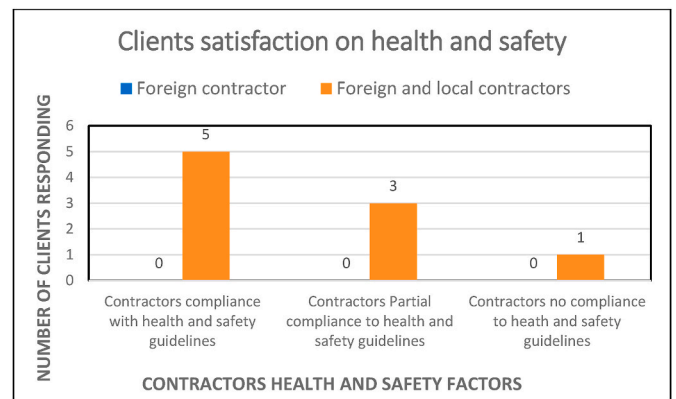


Fig. 4. Clients' satisfaction with contractors on health and safety management.

4.10. Health and safety

Fig. 4 shows clients' levels of satisfaction on health and safety by foreign and local contractors. This result is interesting because no contractor was seen to be better in health and safety between foreign and local contractors. This is evident that local contractors have the capacity to compete with foreign contractors in the health and safety sector.

5. Discussion

This section considers the discussion based on the findings in the previous section. From the findings, the high-power distance is distinct as there is a clear distinction between management and subordinates.

Conclusively, power distance is quite high in the construction industry in Zambia meaning that inherently there still exists a master-servant type of working relationship among local and foreign contractors. Additionally, dependency levels of subordinates on their superiors were high in both local and foreign firms. This result is consistent with literature review as stated by Machado & Carvallho (2008) that where the power distance index is high; there is significant dependence by subordinates on their leaders.

Within the construction industry in Zambia, the contractors cannot carry out work without getting a go-ahead from the employer/client concerning their desires on the project. This was the case for both local and foreign contractor in the Zambian context as the leadership exhibited is hierarchical in nature. It shows that the construction workplace places more value on money-making ventures and tolerate inequalities at the expense of building meaningful relations between high management and low management. In terms of performance the

power distance was higher in foreign firms compared to local so perhaps if rightly managed a high-power distance is good for performance promotion.

Results indicate that locally owned contracting firms are significantly concerned with their employees having standard operating procedures which they are required to follow but it is unclear if these processes are formulated for use in uncertain situations. Though not significantly different foreign-owned firms are more detailed in formulating job requirements than local firms, they also have workers who are more likely to follow instructions and procedures yet the locally owned firms' employees are more likely to follow rules of the organisation. Results also indicate that contractors would most times want to ensure a high degree of certainty. This is important because uncertainty cannot be easily managed, [Smith et al. \(2014\)](#). The results are consistent with literature which states that construction industry contractors would rather deal with the risk that they can manage than uncertainty' [Smith et al. \(2014\)](#) [Ward et al. \(1991\)](#) and [Hofstede \(1983\)](#). Uncertainty avoidance in the construction industry is ever-changing and no two projects can ever be alike. The foreign contractors seem to respond to uncertainty significantly better than the local contractors as they are less anxious from uncertainty. This is congruent with the findings of [Liu et al. \(2015\)](#) the study concludes that project risks are viewed and handled differently in various national cultures. This has resulted in foreign contractors being perceived as better performance than local contractors. This attribute is desirable as no two construction projects can be the same.

There were no significant findings regarding masculinity and femininity on various attributes compared between foreign contractors and local as indicated in [Table 2](#). Nevertheless, foreign-owned firms seem to think that meetings run more effectively when chaired by men, who are also perceived to think that men are better problem solvers compared to indigenous contractors. Results show that there is equal perception on dealing with organisational problems usually requiring an active aggressive approach which is typical of the male gender ([Cook & Jenkins, 2014](#)). Additionally, this entails that the Zambian construction industry tolerates more inequality and have more need for power, wealth, prestige and status, [Hofstede et al., \(2005\)](#). Additionally, power is seen as more important in the construction industry in Zambia.

From the results, it is clear that individualism is practiced more than collectivism in the Zambian construction industry. Having established overall through percentages the national culture it was then important to establish whether the national culture between the local and foreign contractors was the same overall. The results of this comparison are shown in [Table 3](#). There is no significant statistical difference for national culture attributes for power distance, masculinity and individualism between foreign and local contractors. Nevertheless, the power distance was higher for foreign contractors than for local, the individualism was higher for foreign than for local contractors and so was the masculinity. This entails that although the national cultural orientations towards the aforementioned are the same the practices for some attributes differ slightly. Uncertainty in the construction industry is not uncommon due to projects being unique, sites being, different and teams consisting of professionals from different backgrounds. There is a significant difference in uncertainty avoidance, $U = 946.00$, $z = -2.082$, $p = 0.037$, two-tailed ([Tables 2 and 3](#)). The differences in perception may account for why the foreign contractors are preferred as they tend to freely engage in uncertainty management compared to local contractors who tend to be become very anxious because of uncertainty. This is in addition to other factors outside national culture.

The achievement of the second objective on comparing levels of performance of foreign contractors to local showed that clients for large scale projects in the Zambian construction industry prefer foreign contractors over the local indigenous contractors. This is attributed to the timely completion of projects, strict adherence and prudent control of cost and their ability to deliver the quality desired by the client as shown in the results. The results further indicate that there is a difference

between contractor self-evaluation results and client's evaluation results. This reinforces the need for independent results verification in research.

6. Limitations of the research

The research approach used was confined to quantitative and therefore did not consider qualitative data from uncertainty avoidance where the significant difference in performance was established. Future studies could concentrate on the qualitative part of the research a way of getting more direction in this important subject area. Further, the analysis did not categorise foreign counties due to the low population and sample numbers. Further, the distribution of foreign countries was not uniform thereby combining all foreign contractors in one group. There are other types of culture in existence such as corporate culture according to [Kuo & Kuo \(2010\)](#), [Idaman et al. \(2019\)](#), organisational culture as illustrated by [Cui et al. \(2019\)](#) and project culture as captured by [Zou et al. \(2009\)](#). This means that national culture affects construction performance only to a certain extent. The percentage to which national culture affects and influences construction project performance is a subject that requires further research. Further, [Sowein and Chinda \(2018\)](#) lists parameters that could also affect construction performance. These include but not limited to cost, time, quality, health and safety; financial capacity and environmental factors.

7. Conclusion

Literature has argued that culture has an effect on performance. In this study, significant differences were found for national culture in uncertainty avoidance. It was established that foreign contractors were more prepared and positioned to manage uncertainty compared to local contractors. The attributes of masculinity v femininity, power distance and individualism vs collectivism were not significantly different. The firms were found to be masculine in nature, having a high-power distance and are generally not very collective but individualist. The difference in practices around uncertainty avoidance could be the reason for foreign contractors better performance than local contractors in the management of projects, scheduling and quality parameters as evaluated by clients. It can therefore be concluded that the national culture between local and foreign contractors is similar for attributes of masculinity v femininity, power distance and Individualism vs collectivism, however, different culture exists between the two categories for uncertainty avoidance. Performance of foreign contractors was found to be better than the indigenous contractors from the clients' evaluation apart from health and safety which required improvements by both foreign and local contractors. Foreign contractors' performance in time, cost and quality was found to be better compared to indigenous contractors as indicated by clients. The results from this study can only be generalised to construction industries that rely on foreign contractors for large project execution. Additionally, the approach used was generally quantitative in nature and therefore, future studies could be qualitative in nature focusing in the area uncertainty avoidance where the significant difference was established in this study. One other factor beyond national culture could be playing a more important role in under performance by local contractors and these require further research. The study further concluded that contractor self-evaluation on performance alone is not enough hence the need to verify such results by collecting data from stakeholders such as clients.

Credit author statement

Franco Muleya: Writing, Validation, Project administration, Visualisation, Chipozya Kosta Tembo: Conceptualization, Methodology, Software, Original draft preparation, Supervision, Emmanuellie Phiri: Data curation, Writing, Investigation, Sambo Zulu: Resources, Review and editing, Visualisation, Funding acquisition.

Declaration of competing interest

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

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