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ABSTRACT

Identity crisis has become a major source of inefficiency and ineffectiveness of individuals and organizations. One of the strategic ways for solving this crisis is through identifying the culture (personality) of organizations. The study identified organizational culture typologies of construction firms in Ghana, which is in response to the need for culture studies in construction and the unavailability of such studies in the Ghanaian Construction Industry. The study was quantitative; data were collected from Indigenous contractors in Ghana using a questionnaire survey. Analysis was done using Mean Score Ranking, Relative Importance Index and Exploratory Factor Analysis. Workplace Culture, Business Culture, System Culture and Group Culture were the identified typologies for the study. The cultures identified reveal the strategic areas of construction organizations which need management planning and commitment, to help in reshaping them to be competitive in the business environment.

KEYWORDS

Construction; Ghana;
organizational culture;
typologies

Introduction

The construction industry is adjudged to be a major force in economic stabilization of countries. Its contribution includes employment, infrastructure development and gross domestic product, amongst others (Ofori 2012). Contractors are the fore implementers of clients' brief statement. In developing countries such as Ghana, governments are the major client because of the rising infrastructure deficit. Construction organizations in developing countries are challenged with ineffectiveness and inefficiency in its operation as far as projects and the running of these organizations are concerned. Most studies have focused on improving effectiveness and efficiency of projects whilst organizations' effectiveness and efficiency are yet to be delved into. Although, it can be argued that, the two are inseparable but the distinction between the two is permanent and changing environment for running the organization and project, respectively. Improving organizational effectiveness requires the realization and acknowledgement of the organization's identity. This identity becomes the basis of management decisions; the discovery of the identity can be done by knowing the profile of such organizations. Fellows and Liu (2013) opined that culture is a striking factor that transcends in all aspects of life and professions as well. Implying that the management of employees within the organization and the final physical infrastructure edifice broadcast the culture of the organization involved. Suggesting that, knowing the culture of an

organization can lead to forecasting its performance. Furthermore, the globalization of the construction industry has resulted in alliances between foreign and Indigenous contractors. However, Fellows and Liu (2013) asserted that arrangements in that regard are scanty. Notwithstanding that, Altinay and Brookes (2012) pronounced that partnerships are influenced by similarities of culture between the organizations involved.

Furthermore, many researchers have indicated that there is a correlation between organizational culture and commitment (Lau et al. 2016), performance or effectiveness in other jurisdictions. Moreover, there are documented profile of organizational culture in the construction industry of United Kingdom (Ankrah et al. 2007; Worrall 2012), Turkey (Oney-Yazici et al. 2007; Albayrak & Albayrak 2014), Australia (Igo & Skitmore 2006), Indonesia (Coffey et al. 2011), Nigeria (Olanipekun et al. 2014), South Africa (Harinarain et al. 2013), China (Zhang & Liu 2003) and Malaysia (Lai et al. 2016); however, the Ghanaian construction industry lacks such studies and yet to be employed. It is based on the aforementioned reasons that this study is conducted to identify the culture typologies for Ghanaian construction firms.

Literature review

Hofstede (2011) defined culture as 'the collective programming of the mind that distinguishes the members

of one group or category from others'. Hofstede's definition directs readers to perceive culture from the ecological theory due to the fact that every group possesses a peculiar culture which can be as a result of different environmental pressures. Moreover, Hofstede's definition of culture solely relies on learning or acquiring knowledge, which is a key feature of the cognitive theory of culture. Abu-Jarad et al. (2010), in their paper, emphasized that managers acknowledge and understand the presence of culture in their organizations. For instance, Gajendran et al. (2012) argue that the organization itself represents culture, because Olanipekun et al. (2014) believe it has expressions and it defines the life of the people within. These facts might have directed Albayrak and Albayrak (2014) to assert that organizations are sociocultural institutions.

Organizational culture models used in construction

Hofstede's model

Hofstede (2011) pointed out six dimensions of culture relevant to organizations; these are process-oriented versus results-oriented, job-oriented versus employee-oriented, professional versus parochial, open systems versus closed systems, tight versus loose control, and pragmatic versus normative.

Process-oriented versus results-oriented. Hofstede (2011) indicated that organizations which emphasize on technical know-how and regard laid-down procedures are process-oriented. Results-oriented is skewed towards the outcome of the processes. Construction is associated with cost overrun, time overrun and quality-related issues. In mitigating these issues, construction organizations integrate the strength of this dimension to achieve an acceptable result.

Job-oriented versus employee-oriented. Employees are important asset of an organization; without them it will be difficult for an organization to achieve its goals. Hofstede (2011) explained that some organizations are more interested in the performance of the employee rather than the well-being of the employee and vice versa. Such decisions are mostly based on the ideologies of the leader or founder of the organization.

Professional and parochial. This dimension is a way of classifying members of an organization. The professional perspective is associated with members who prefer to be identified with a recognized professional body. Whilst the parochial suggests that members prefer to be identified with their work. According to Hofstede (2011), the level of education breeds this dimension since most

educated people are identified with their profession and vice versa.

Open systems versus closed systems. Communication is a major feature for the survival of organizations. This registers the organization's environment in the minds of employees and customers as well (Hofstede 2011). The open system allows free flow of information within the organization whilst information is very secretive in the closed system. Moreover, information is shared among top management in the latter, whilst information is shared to all employees and customers in the former.

Tight versus loose control. The difference between the former and the latter is the formalities that ought to be observed (Hofstede 2011). For instance, every profession has set down rules in achieving the organizations' objective; an example is observing due process during scientific research, the application of Standard Method of Measurement (SMM) for preparing bills of quantities for building works. The earlier examples describe the tight control dimension, whilst the loose control allows people to employ the procedure they deem fit in achieving a stated aim.

Pragmatic versus normative. In a situation where the relationship between a customer and supplier is flexible enough that no strict laws are applied such is said to be pragmatic. The normative applies to situations where an organization strictly adheres to rules and laws in providing quality services to customers. These dimensions, as termed by Hofstede (2011), are experienced in all organizations. An in-depth analysis of these dimensions reveals that communication, bureaucracy, expertise of workers, performance, innovation, humane, adherence to laws and rules are constructs which define the culture of an organization.

Organizational Culture Profile (OCP) model

Geertz Hofstede has been credited as a great contributor in the culture research. Besides, Charles O'Reilly, Jennifer Chatman and David Caldwell also should be acknowledged due to their immense contribution in organizational behaviour and organizational culture. The Organizational Culture Profile (OCP) is accredited to the trio, who made significant move to understand correlation between personal preferences and organizational preferences. O'Reilly et al. (1991) earlier identified 54 constructs which are best-fit for describing the characteristics of organizations; however, a factor analysis test revealed only 33 to have a loading greater than 0.4 based on individual preference which was classified under eight profiles. In order to validate the results,

another sorting was done based on organizational preference but the constructs were reduced to 26 and 7 profiles as such. Most importantly, five of the profiles were not altered after the validation. The seven profiles include innovation, stability, respect for people, outcome orientation, attention, team and aggressive.

Innovation. The innovation profile concentrates on an organization's ability to explore emerging trend in their field of specialization. Such profile is underpinned by taking risk, making good use of available opportunities, being innovative, careful, rule oriented and undertaking experiments (O'Reilly et al. 1991). Nevertheless, Sarros et al. (2005) revisited the OCP and revised the factor loadings arbitrarily by replacing experimenting with employees' readiness to take responsibilities. According to Sarros et al. (2005), the omission of being careful and rule oriented was attributed to negative factor loading, but the reason for the experiment cannot be identified. Notwithstanding the findings in the two studies, it can be asserted that the innovation profile is geared towards external functioning of the firm.

Stability. O'Reilly et al. (1991) further revealed that stable organizations provide job security for its employees, easy to predict, stable and also have no emphatic rules. Sarros et al. (2005) used 'calm' and 'low conflict' to replace 'easy to predict' and 'no emphatic rules' in their revised OCP (ROCP). According to them, the revision was done because some factor loadings were not a true reflection of their profile. Nevertheless, it is not a strong point to replace 'easy to predict' since it best declares the direction of the organization. Moreover, because 'no emphatic rules' have a negative factor loading and a sharp contrast to the features of stability, the researchers agree to its omission.

Respect for people. The running of the organization is solely based on the contribution of its workers. As a matter of fact, when people in authority give reverence to their subordinate, it encourages them to give their best. This profile speaks volumes about an organization's ability to respect their employees, fairness and its ability to tolerate their workers (O'Reilly et al. 1991), irrespective of how disgusting their behaviour seems.

Outcome orientation. The emphasis is on organization's desire for achieving their goals, high expectation, action oriented and results oriented (O'Reilly et al. 1991). Comparing OCP with the ROCP, the entire outcome orientation was collapsed with its factors under competitiveness and performance, whilst high expectation and action were entirely removed. The researchers endorse the

restructuring because the outcome orientation sets the pace for competitive advantage and performance of an organization.

Attention. This is a description of an organization with members being analytically conscious, admired and stressed on the need for precision and accuracy due to the organization's vision of paying attention to details (O'Reilly et al. 1991). This profile relates to the process orientation proposed by Hofstede (2011). The researchers believe that this profile is geared towards perfection in the organization's operation, thus leaving room to no or little errors.

Team. The study was conducted using accounting institutions, accountants and MBA students. The factor loadings for team orientation include collaboration, people orientation and team (O'Reilly et al. 1991). This profile intends to strengthen the internal structures of an organization and builds a stronger bond between members of an organization.

Aggressive. Organizations are positioned in the society to help solve the needs of the people through employment and offering other responsibilities to the society (McAuley et al. 2007). Aggressive profile describes the external conditions in which the business organization is situated. Aggressive, competition and social responsibilities are the hallmark of this profile.

Revised Organizational Culture Profile (ROCP) model

Sarros et al. (2005) revisited and revised the OCP developed by O'Reilly et al. (1991). A total of 28 constructs were tested and classified under seven themes which are quite distinct from the original seven thematic areas. Moreover, a further classification was done which streamlined the thematic areas under Environment, Business and People. The ROCP was purposely done to validate the original OCP.

People culture. In as much as an organization is instituted with the agenda of making profit, the needs of the workers are also important. An organization which strengthens its internal structures by providing its workers with the needed training and development, reward systems, acknowledge their roles and ensure a cordial environment among the management and the workers are people oriented.

Business culture. Competition has become the hallmark of business-oriented organization. It would be weird for an organization to be out of competition, because competition sets the organization in motion to articulate its

characteristics. Organizations which are effective in their specialization always become the benchmark for others. Moreover, modern technologies and concept have positioned the organizations to be multidiscipline, although organizations are birth with a specific agenda. Organizations possessing the aforementioned qualities are labelled to have business culture (Sarros et al. 2005).

Environment culture. According to McAuley et al. (2007), organizations are placed in the society to help the society achieve its mandate. Social responsibility has become the focal point of some organization with the sole aim of contributing their quota to the society. However; indication shows that it is an effective marketing strategy adapted by business organization. In addition, organizations are placed in environment which is faced with all things of pressure such as legal, political, regulatory and just to mention few. However, the organization's willingness to address these pressures safely defines the organization as environmental oriented.

Denison culture profile

Denison culture model profiled organizations based on the activities undertaken. Four main dimensions can be used to describe the model. These are adaptation, consistency, mission and involvement.

Adaptation. Organizations can be described as internally or externally oriented based on its business strategy. The adaptation dimension focuses on the ability of the organization to react to new development or innovation in industry (Mobley et al. 2005). This dimension reveals the organization's willingness to cause changes in its operations or behaviours, customer orientation and learning in the organization. In a related model based on the Competing Value Framework (CVF) developed by Cameron and Quinn (2006), this dimension can be described as the organization's willingness to take risk.

Consistency. Organizations are well shaped as they encounter challenges in the course of achieving their mandate. However, the successful technique that solves the challenges becomes a value which is shared by the members of the organization. This dimension emphasizes on internal structures (Denison & Mishra 1995), which takes into account consensus building and ensuring all departmental goals conform to the organization's goal.

Mission. The direction of the organization is steered by the organizational goals, visions and strategic plans (Denison & Mishra 1995). This dimension believes that organizations can be classified based on a strong

emphasize on achieving the organizations' goals. Succinctly, mission dimension strengthens the stability and the bearing of the organizations since goals inform how, when and what the organization can engage itself.

Involvement. Individuals form the coercive force of the organization. Empowerment, teamwork and capability development (Denison & Mishra 1995; Mobley et al. 2005) are the features of this dimension which aims at developing, equipping and maintaining the workforce of the organization.

Organizational Culture Assessment Instrument (OCAI)

Four culture typologies exist within the Organizational Culture Assessment Instrument (OCAI). They are clan, market, adhocracy and hierarchy typologies. The OCAI has its fundamentals from the CVF developed by Cameron and Quinn (2006). Apparently, the framework measures culture from external-internal dimension and more-less flexibility focus. The external-internal dimension classifies the culture of the organization based on its response on the business or professional environment and addressing internal arrangement of the organization, respectively. The more-less flexibility connotes the measure of organizations' ability to adjust to new development in the organizations' environment (Cameron et al. 2006).

Clan. According to Cameron and Quinn (2006), the enabling and friendly environment of organizations creates the niche for the clan culture. Expounding on that, every organization has structures which enforce the cohesion between employees, employees and management, employees and the organization, and, finally, the organization and its customers. The clan culture is positioned on the premise of internal and integration paradigm of CVF. In addition, working as teams, the total participation of employees in the organization, development of employees' capability and human environment are the expressions of the clan culture.

Cameron and Quinn (2006) proclaimed that the clan culture is an avenue of winning the commitment, involvement and trust of employees which positively affect the business performance of an organization. Drawing from the concept of management theories, the clan culture is in alignment to the Elton Mayo's school of thought. Olum's (2004) review of management theories indicated that encouraging informal groupings, good working environment, employees' interest and team works correlate to increasing productivity.

Albayrak and Albayrak (2014) added that communication plays an important role in this culture. Clan culture is fashioned after the family system, where

employers are seen as parents and employees as the children. The absence of effective communication in a family breeds an environment for chaos. Effective communication in an organization contributes to the satisfaction of both employers and employees because it helps employers to sell their vision to the employees, solving internal conflicts and addressing employees' challenges. The ideas of the clan and market culture are practically the same but the recipient differs as the clan relationship is geared towards employees, the market culture is towards customers.

Hierarchy. Whenever the concept of hierarchy is associated with an organization, the impression of strict structures becomes the focal point. Workers of an organization can be classified under owners, top management, semi-management and mere workers. This classification automatically establishes line of authority in an organization, such that WHAT, WHEN and HOW to do things are documented to help in achieving organizations' goal. Cameron and Quinn (2006) theorized that such structures enhance stability, consistency, efficiency and predictability in an organization. Whenever well-stipulated rules, order of reporting and line of authority exist in an organization, the operation or product might not differ or slightly differ from each production. This enhances internal stability and consistent products or services offered by the organization. Moreover, new entrants easily adapt to the operations of the organization.

Adhocracy. In as much as the conventional meaning of adhocracy is flexibility, Cameron and Quinn (2006) opined that this culture can be interpreted to mean a temporal way of operating an organization because the fundamental word is *ad hoc*. The influence of the business environment calls for making things flexible and informal in organizations. For instance, the construction industry over the decades has transformed from a technical field to a business-oriented industry. This can be realized from the curricular of construction universities across the globe. Business-related studies and legal studies have found its way into technical education such as construction. Worrall (2012) opined that adhocracy forms the basis of cultural change in organizations due to its adaptive power to the external environment. This does not suggest that an organization will compromise on anything but things which aim at providing it with competitive edge or advantage over others. Cameron et al. (2006) indicated that the effectiveness of adhocracy is seen in the organizations' craving for innovation. This actually should be identified with the construction

organization since business management concepts and other sustainable concepts are emerging in the industry.

Market. The term market used for this culture is very figurative, not necessarily the physical description of market where buying and selling takes place. A fundamental principle in organizational management is maximizing profit and optimizing cost of production. In this era of aggressive business environment, the cutting edge of organizations is its ability to compete sustainably in business. Cameron and Quinn (2006) posited that market is oriented towards the external environment. Albayrak and Albayrak (2014) reiterated that as the organization is focused on its competitive bid, customers should be the central focus. Without customers, organizations will fail in achieving their goals and competitive edge.

Research methodology

According to Creswell (2003), quantitative research is adapted with the aim of arriving at a scientific theory or knowledge using post-positivist route. The construction industry is made up of many individual institutions. In order to provide a better overview on culture, it becomes imperative to reach as many as possible an acceptable sample to study on. Ankrah (2007) asserted that quantitative enables the researcher to engage as many respondents as possible. In addition, it also helps in arriving at empirical results through the numeric measurement of a concept (Kothari 2004). Kothari (2004) opined that it is easy to make inference to the population of the study. In other words, generalization of results can be made since the sampled respondents possess the qualities of the entire population. The study was grounded in the quantitative perspective of research due to the reasons mentioned above.

Contractors registered with the Association of Building and Civil Engineering Contractors of Ghana (ABCECG) were the focus of the study and the population as well. Contractors were chosen for the study because they are implementers of the client's brief statement. ABCECG is a recognized body with a finite population size and its members are Indigenous contractors as well. According to the ABCECG secretariat, the total number of members registered with the association is 450.

Using a precision level of 5% and confidence level of 95%, 212 contractors were sampled for the study using the Yamane (1967) formula as cited in Israel (1992). A simple random sampling technique was used in selecting the respective contractors.

Questionnaire is a structured document comprising well laid-out questions specially made to solicit for information from people (Kumar 2005; Denscombe 2007). Hofstede et al. (1991) opined that questionnaire survey has been used to solicit for information on culture studies and still remains essential and useful because it provides respondents the luxury of space to show their preference on a construct. The researcher chose the questionnaire based on the reasons postulated by Denscombe (2007) and Kumar (2005):

- (1) The number of participants for the study: 212 contractors participated in the study and the questionnaire serves the purpose of reaching them within the time frame of the study.
- (2) The different geographical locations of the respondents: members of ABCECG are predominantly distributed in the Greater Accra and Ashanti regions of Ghana.
- (3) Ability of the respondents to read and understand the contents of the questions: the language of communication was purely English and the responding organizations accept the language as the official form of transacting business.
- (4) When the required data are standardized: the information solicited from the respondents were closed ended which did not require the presence of the researcher in answering the questions.

The questionnaire for the study was divided into two sections, A and B. The section A requested for the demographic information of the respondents and the substantive organization. And the final section (B) captioned the critical factors for the construction of culture typologies in the Ghanaian construction industry. A better and appreciative way of understanding an individual or an organization is identifying key features or attributes that describe the object in question well. According to researchers in the organizational behaviour and culture studies (O'Reilly et al. 1991; Denison & Mishra 1995; Cameron & Quinn 2006; Ankrah 2007; Abu-Jarad et al. 2010; Olanipekun & Abiola-Falemu 2013), attributes which aim at achieving organizational effectiveness, well structure and organized environment, good organizational ethics, employee motivation, good working environment and systems and innovations as well are used to construct culture for an organization. In view of that, the study identified 48 factors from previous studies which best suit the description of the earlier researchers.

Therefore, variables in section B were retrieved from survey instruments developed by different organizational culture researchers like OCAI (Cameron & Quinn 2006), Denison Culture Profile (Denison & Mishra

1995), OCP (O'Reilly et al. 1991), ROCP (Sarros et al. 2005) and Hofstede's Organizational (Hofstede et al. 1991). Culture studies which adapted the quantitative route used Likert scale questionnaire to solicit for information. Nevertheless, the disagreement has been on the scale calibration to use. For instance, Hofstede et al. (1991) used a seven-point Likert scale to solicit information from respondents, whilst Ankrah (2007) employed a five-point scale for construction project culture. Fellows and Liu (2013) asserted that using a small point scale like five is adequate and suitable for culture studies. As a result of that a five-point Likert scale calibration was used to measure the variables in section B with labels ranging from '1 = highly disagree' to '5 = highly agree'.

The data retrieved for the study were analysed using mean score ranking, relative importance and exploratory factor analysis. The 48 factors as shown in Table 2 were subjected to the mean score and relative importance index analysis. The mean score test value was set at 3.5 implying that all factors with mean scores less than 3.5 are insignificant and those which are equal to 3.5 and above were deemed to be significant. Moreover, the RII test value was set at 70 with constructs less than 70 deemed to be less important and those above or equal to the test value as highly important.

Results and discussion

Constant follow-ups were made on all the 212 contractors; however, only questionnaires from 178 contractors were retrieved representing 84%. Perhaps, some of the contractors were busy on their projects, whilst some were protecting information from their company. The study also revealed that a majority of the respondents are working with registered limited liability companies as shown in Table 1. Moreover, owners of construction organizations are also substantive workers as well. It is not surprising that the owners are the managers who see to the day-to-day running of the organization. Most of the owners are construction professionals, which suggest that these professionals are capable of employing themselves and others as well. Moreover, the idea of entrepreneurship is gaining grounds in the construction industry.

The idea of the construction industry as a male-dominated sector is still a reality since, the developed countries which have gender equality still have the same challenge how much more the developing countries as shown the Table 1. It is better to accept the fact that construction is masculine in nature and a small percentage of its workforce and professionals will be women. This result is no different from Ginige et al.'s (2007) study

Table 1. Demographic information of respondents.

	Options	Frequencies	Percentage
Legal structure of organization	Sole proprietorship	34	19.1
	Partnership	24	13.5
	Limited Liability Company	116	65.1
	Joint venture	4	2.3
Total		178	100
Owners are workers of the organization	Yes	126	70.8
	No	52	29.2
Total		178	100
Dominant gender in organization	Male	168	94.4
	Female	10	5.6
Total		178	100
Classification of organization	D1K1	46	25.8
	D2K2	50	28.2
	D3K3	70	39.3
	D4K4	12	6.7
Total		178	100

which posited that women in managerial level in the construction sector are less as compared to males. Organizational structures impede the successful integration of women into male-dominated industries such as the construction sector. This study concurs with Ayarkwa et al.'s (2012) assertion that the Ghanaian construction industry is male dominated. Table 1 also shows the financial and technical classifications of building and civil engineering contractors according to the Ministry of Water Resource Works and Housing. Averagely, D2K2 and D3K3 are the dominant classes registered with the Association of Building and Civil Engineering Contractors of Ghana.

The study recorded an internal consistency of 0.960 for all the factors which indicates that the number of factors were adequate and highly appropriate. Table 2 reveals the factors and their significance as far as the set values are concerned. Only one (predictable) out of the 48 factors are insignificant to the study according to the RII and mean score ranking criteria; however, all the 48 factors were considered for the internal consistency test. The researchers considered the RII and mean score ranking analysis as determination criteria for the study; hence only 47 factors were deemed to be significant.

The exploratory factor analysis was further used to reduce the significant 47 factors into simplified components. According to Ankrah (2007), factor analysis is adapted for the purpose of reducing the size of factors and for convergent validity purposes. Apparently, it is essential to develop fewer typologies for culture than to use many, because factors measuring a concept have the tenacity of being related. Therefore, exploratory factor analysis was used to reduce factors. Upon subjecting the 47 factors through factor analysis, 6 of the factors

Table 2. Factors for organizational culture.

Variables	A	RII	Mean	Std. Dev.	Std. Error mean	Rank
Teamwork	0.96	84.5	4.225	0.701	0.053	1
Emphasis on quality	0.96	84.3	4.214	0.843	0.063	2
Result oriented	0.96	82.5	4.124	0.764	0.057	3
Having good reputation	0.96	81.1	4.056	0.742	0.056	4
High expectation for performance	0.96	80.5	4.023	0.766	0.057	5
Achievement oriented	0.96	79.6	3.978	0.766	0.057	6
Management respect for subordinate	0.96	79.1	3.955	0.808	0.061	7
Opportunity for professional growth	0.96	79.1	3.955	0.950	0.071	8
Being distinctive	0.96	79.1	3.955	0.765	0.057	9
Being competitive	0.96	79.1	3.955	0.780	0.058	10
Utilize available opportunity	0.96	78.7	3.933	0.702	0.053	11
Coordination	0.96	78.4	3.921	0.709	0.053	12
Clear lines of responsibility and authority	0.96	78.4	3.921	0.929	0.070	13
Accuracy	0.96	78.2	3.910	0.832	0.062	14
Systematic	0.96	77.9	3.899	0.810	0.061	15
Innovative	0.96	77.8	3.888	0.787	0.059	16
Enthusiasm for the job	0.96	77.5	3.876	0.718	0.054	17
Fairness	0.96	77.3	3.854	0.789	0.059	18
Collaboration	0.96	77.1	3.854	0.831	0.062	19
Enabling working environment	0.96	76.9	3.843	0.780	0.058	20
Working long hours	0.96	76.9	3.843	0.901	0.068	21
Tolerance	0.96	76.6	3.832	0.785	0.059	22
Highly organized	0.96	76.4	3.820	0.909	0.068	23
People oriented	0.96	76.4	3.820	0.803	0.060	24
Mutual responsibility	0.96	76.4	3.820	0.789	0.059	25
Praise for good performance	0.96	75.9	3.798	0.798	0.060	26
Organized	0.96	75.9	3.798	0.892	0.067	27
Action oriented	0.96	75.7	3.787	0.788	0.059	28
Meticulous	0.96	75.7	3.787	0.773	0.058	29
Being socially responsible	0.96	75.7	3.787	0.816	0.061	30
Taking individual responsibility	0.96	75.5	3.775	0.960	0.072	31
Analytically minded	0.96	75.5	3.775	0.792	0.059	32
Sharing information freely	0.96	75.5	3.775	0.834	0.062	33
Having a clear guiding philosophy	0.96	75.5	3.775	0.748	0.056	34
Research and Development	0.96	75.3	3.764	0.951	0.071	35
Hierarchical	0.96	75.1	3.753	0.841	0.063	36
High pay for good performance	0.96	74.6	3.730	1.006	0.075	37
Calm	0.96	74.4	3.719	0.751	0.056	38
Rule oriented	0.96	74.2	3.708	0.826	0.062	39
Job security	0.96	73.9	3.697	0.727	0.055	40
Precision	0.96	73.9	3.697	0.856	0.064	41
Compartmental	0.96	73.5	3.674	0.924	0.069	42
Taking risk	0.96	73.1	3.652	0.903	0.068	43
Stable in operation	0.96	72.8	3.640	0.740	0.055	44
Low conflict	0.96	72.8	3.640	0.954	0.071	45
Being reflective	0.96	71.9	3.596	0.791	0.059	46
Aggressive	0.96	70.8	3.539	0.851	0.064	47
Predictable	0.96	69.9	3.494	0.878	0.066	48

had communalities ranging from 0.250 to 0.370. Costello and Osborne (2005) earlier opined that communalities are rendered too high when the constructs under consideration have at least 0.800 communalities but are quick to indicate that such incidents rarely happen. However, perfect reflections of real-life data possess communalities ranging from 0.400 to 0.700, implying that

Table 3. KMO and Bartlett's test.

Kaiser–Meyer–Olkin	Measure of sampling adequacy	0.832
Bartlett's test of sphericity	Approx. Chi-square	5.544E3
	df	780
	sig.	0.000

communalities less than 0.400 are not acceptable for further analysis and should be dropped. Therefore, six factors were dropped because they recorded communality values less than 0.400 (Appendix 1). Another factor was dropped subsequently because it also recorded an extracted communality less than 0.400 (Appendix 2). The communalities for the remaining 40 factors range from 0.406 to 0.751, which is acceptable for the study.

A further internal consistency test was conducted using the Cronbach's alpha to test the remaining 40 factors. It was revealed that the Cronbach's values range from 0.950 to 0.960. Comparing the Cronbach's values for the 48 and 40 factors reveals that the lower number of factors results to lower Cronbach's values and vice versa.

The Kaiser–Meyer–Oklin (KMO) and the Bartlett's test were conducted to ascertain the suitability of the

Table 4. Component and variable extraction

Component and variables	Factor loading	Variance explained
Component 1: workplace orientation		
Research and development	0.54	37.90
Utilize available opportunity	0.60	
Fairness	0.61	
Tolerance	0.65	
Opportunities for professional growth	0.60	
Praise for good performance	0.68	
Enthusiasm for the job	0.60	
Highly organized	0.50	
Analytically minded	0.56	
Component 2: business orientation		
Taking risk	0.52	7.02
Innovative	0.67	
Stable in operation	0.61	
Action oriented	0.63	
Results oriented	0.53	
Teamwork	0.50	
An emphasis on quality	0.66	
Being distinctive	0.64	
Being competitive	0.66	
Being reflective	0.50	
Component 3: system orientation		
Taking individual responsibility	0.54	5.33
Having a good reputation	0.52	
Being socially responsible	0.65	
Having a clear guiding philosophy	0.71	
Hierarchical	0.55	
Compartmentalized	0.59	
Organized	0.69	
Systematic	0.72	
Clear lines of responsibility and authority	0.72	
Component 4: group orientation		
People oriented	0.67	4.72
Coordination	0.68	
Mutual responsibility	0.72	
Aggressive	0.75	

factors for the analysis. The study recorded a KMO value of 0.832 (Table 3), which makes the factors highly suitable for the study. Table 4 also revealed that four components were extracted with a cumulative variance of 54.97% for the extraction and rotation loadings. Component 1 recorded a total variance of 37.90%, component 2 recorded a variance of 7.02%, the third component had 5.33%, and the fourth component recorded 4.72%.

Costello and Osborne (2005) recommended that, factors in a rotated component are suitable and has the best fit for they satisfy the following conditions. Firstly, each factor classified under a component should have achieved at least a factor loading of 0.30. Secondary, no factor should criss-cross more than one component. Finally, no component should have a minimum of three factors. In order to ensure that the criteria set for the study is robust, the factor loadings were raised to 0.50 for the study. Subsequently, no factor criss-crossed and a minimum of four factors were recorded under one of the components. Thirty-two factors were extracted under the four components. This revelation suggests that the rotation highly fits the study.

Description of extracted component

The explanations of the extracted components are discussed further under this section. The components are workplace orientation (WO) (component 1), business orientation (BO) (component 2), system orientation (SO) (component 3) and group orientation (GO) (component 4) as shown in Table 4.

Component 1: workplace orientation (WO)

The first component is described by nine factors; these includes research and development (0.54), utilize available opportunity (0.60), fairness (0.61), tolerance (0.65), opportunities for professional growth (0.58), praise for good performance (0.68), enthusiasm for the job (0.60), highly organized (0.50) and analytically minded (0.56). Moreover, it has a total variance of 37.90%. Khan et al. (2012) posited that one of the most influencing factors of organizational effectiveness is motivation. From the first principle, organizations are made up of individual contributors whose source of motivation differs from one to the other. A common motivating factor for members of the organization is conducive environment. Herzberg's theory vividly described the factors which contribute to workplace motivation examples include job advancement, recognition for sterling performance, well-organized work environment.

This culture orientation emphasizes on ways of motivating members of the organization to give off their best.

It is kind of related to the clan culture developed by Cameron and Quinn (2006) and employee – oriented by Hofstede (2011). Due to the influence of organizations on members' behaviour, it could be realized that it is imperative to be flexible, though the industry is known to be one of the aggressive sectors. This can further be extended to realizing the goal of the organization in entirety because the work environment should provide the atmosphere of benefiting from its stakeholders.

Component 2: business orientation (BO)

Taking risk (0.52), innovative (0.67), stable in operation (0.61), action oriented (0.63), results oriented (0.53), teamwork (0.50), an emphasis on quality (0.66), being distinctive (0.64), being competitive (0.66) and reflective (0.50) are the retaining factors describing the BO component. Construction organizations are established specifically for projects which are run on a short-term basis. As a result of that, the competition among construction organizations is very high. Unfortunately, unlike the manufacturing sector where commercials and adverts are made to attract customers, the construction industry is otherwise. Therefore, the opportunity to advertise the services of the construction industry is through the final product. As a matter of fact, the quality of work, innovative construction and distinctiveness of the projects serve the purpose of marketing.

The BO culture breeds efficiency among construction organization because of the reasons stated earlier. The qualities of the BO culture merge the market and adhoc-racy culture propounded by Cameron and Quinn (2006). Therefore, it focuses on innovation, aggressive competition and customer orientation. This culture concentrates on the strengthening of internal and external environment of the organization with the ultimate goals of improving productivity and having competitive advantage over others. In relating it to the system theories of management, this culture combines the strength of open and closed systems of management. The construction industry is an ever-changing one because there are new and emerging technologies and techniques every now and then. Obviously, construction organizations are left with no choice than to adequately psyche and acclimatize with these innovations in construction. Interestingly, projects undertaken by construction organizations require a fairly distinct strategy. A silent contributing factor to this component is teamwork, it would have been ideal to have it under the 'Group Culture' because of its literary role but was classified under the Business Culture. Probably, the nature of the construction industry has an influence on this finding because teamwork is

seen as an important competitive edge in construction. Furthermore, the importance of teamwork factor in the Business Culture is possibly grounded in the fact that construction organizations are positioned in an environment which mostly works within the pull system of production which requires the combined efforts of different trades to achieve its objectives.

Component 3: system orientation (SO)

Component 3 also accounted for 5.33% of the variance explained. It is described by nine underlining factors which consist of taking individual responsibility (0.54), having good reputation (0.52), socially responsible (0.65), having a clear guiding philosophy (0.71), hierarchical (0.55), compartmentalized (0.59), organized (0.69), systematic (0.72), clear lines of responsibility and authority (0.72).

The SO operates by reason of the internal structures available to the organization in question. The SO culture encourages respect for authority within the organization and, most importantly, the principles on which the organization was established. Recognizing internal structures of an organization according to Cameron and Quinn (2006) is an avenue for strengthening organizational stability, efficiency and consistency in an organization. This culture can also relate to the hierarchy culture developed by Cameron and Quinn (2006). The SO culture is positioned in the bureaucratic theory of management propounded by Max Webber in the 1940s. Olum (2004) opined that bureaucracy in organizations is activated by controlling systems instituted in an organization. In considering the features ascribed to a bureaucratic organization (Down 1967), averagely individual construction companies will fail because majority of employees are casual due to the inconsistent flow of projects as opposed to majority being full time. Furthermore, most of the construction company owners in Ghana are actively involved in the day-to-day running of the company (Table 1).

In organizations which produce uniform and consistent products, there should be high regard for SO culture trait identified by the study. The realization of this culture in the construction industry is trivia and a bit sceptical due to the nature of the construction industry. Construction industry is not the same as experienced in the manufacturing sector, thus makes it difficult to concur with this culture. However, SO culture can be appropriately used for the emerging off-site construction industry in the construction industry such as the roofing sheet production companies. Olum (2004) also indicated that technical skills are necessary and expedient when control is of utmost importance in the organization. Tacitly, the importance of the system orientation in the construction

organization aims at ensuring orderliness. According to Allaire and Firsirotu (1984), the actual difference between human and other creatures is order. For instance, if order is not observed, organizations will underperform, fold up and even experience unwelcoming work ethics. Notwithstanding that, the SO culture of this study relies on the visions of the organization, policies and the strategic operations such as social responsibility.

Component 4: group orientation (GO)

The fourth component is made up of four factors which includes people oriented (0.67), coordination (0.68), mutual responsibility (0.72) and aggressive (0.75). Ideally, it would have been appropriate to have the teamwork factor classified under this component. However, it was classified under the Business Culture. Organizations in every industry are set in motion through the immense contribution of its workforce. Obviously, organizations sacrifice the individual will for the common good of the group. Group orientation makes parsimonious use of information because it is the blood that energizes and revives the activities of the group. Though the group orientation recorded only four loadings, however, it has higher factor loadings. With reference to Ankrah (2007), team orientation which is similar to the group orientation possesses a better bearing on project performance. Team work on project according to Baiden et al. (2006) enhances free flow of information among individual members and trust. Therefore, the GO in the organization as identified by the study will require barrier-free communication to work effectively and efficiently. Furthermore, it is classified in the category of clan culture by Cameron and Quinn (2006), teamwork orientation by Ankrah (2007) and O'Reilly et al. (1991)

Summary of identified typologies

Four typologies were realized after the critical factors were subjected to the exploratory factor analysis. Based on Costello and Osborne's (2005) criteria on factor analysis which are discussed earlier, 32 factors were able to pass the 0.50 relevant factor loading. Subsequently, the factors were spread among the four components (typologies) extracted through the analysis. The four typologies are WO, GO, SO and BO, which can be further categorized under either external or internal environment of the organization. Workplace Culture, Group Culture and System Culture fall within the internal environment, since these are aimed at strengthening and stabilizing the structures within the organization. The Business Culture can be considered as the only typology which is classified under the external environment because it focuses more on

competition for work. Moreover, the typologies describe the important aspects of the organization by focusing on the work environment, employees, processes, procedures and competitive advantage of the organization.

Limitation of research

The factors considered in the study might not guarantee an exhaustive or comprehensive list because concepts have varying degrees of the factors which can measure it adequately. Moreover, factors used have in-built challenges. Therefore, the factors used for the study were sourced from other concepts and have been empirically adduced to be suitable for the study. Furthermore, the study considered only Indigenous building and civil engineering contractors in the Ghanaian Construction Industry.

Conclusion

Every individual is well concerned about their personality. The metaphor used for the organization is culture which can be simplified as the image of the organization. The problems raised by the study led to the development of the overall aim of the study which was to explore the organizational culture typologies in the Ghanaian Construction Firms. Workplace Culture, Business Culture, System Culture and Group Culture were the culture typologies identified among Ghanaian Construction Firms. Further culture-related studies in the Ghanaian Construction Industry will be based on this study since it is the first of its kind in Ghana. The study also contributed the body of knowledge with regard to organizational culture in developing countries. It is proposed that further research should establish the relationship of the identified organizational typologies to business management concepts like productivity improvement, innovation and partnership.

Disclosure statement

No potential conflict of interest was reported by the authors.

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Appendix 1. Results for communalities for 47 constructs.

Communalities	Initial	Extraction
Taking risk	1	0.479
Innovative	1	0.616
research and development	1	0.453
Utilize available opportunity	1	0.459
Taking individual responsibility	1	0.415
Stable in operation	1	0.486
Calm	1	0.526
Management respect for subordinates	1	0.440
Fairness	1	0.440
Tolerance	1	0.577
Opportunities for professional growth	1	0.555
Praise for good performance	1	0.587
Action oriented	1	0.562
Results oriented	1	0.592
Enthusiasm for the job	1	0.543
Highly organized	1	0.470
Analytically minded	1	0.583
Precision	1	0.531
Accuracy	1	0.603
Meticulous	1	0.425
Collaboration	1	0.549
Teamwork	1	0.528
people oriented	1	0.560
Coordination	1	0.553
enabling working environment	1	0.528
Mutual responsibility	1	0.458
Aggressive	1	0.585
An emphasis on quality	1	0.622
Being distinctive	1	0.578
Being competitive	1	0.543
Working long hours	1	0.424
Being reflective	1	0.520
Having a good reputation	1	0.505
Being socially responsible	1	0.542
Having a clear guiding philosophy	1	0.656
Hierarchical	1	0.580
Compartmentalized	1	0.506
Organized	1	0.667
Systematic	1	0.757
clear lines of responsibility and authority	1	0.640
rule oriented	1	0.362
Job security	1	0.253
Low conflict	1	0.294
High pay for good performance	1	0.408
High expectation for performance	1	0.334
Sharing information freely	1	0.319
Achievement oriented	1	0.368

Extraction method: principal component analysis

Bold means rejected factors for the Factor Analysis because they recorded communalities less than 0.400.

Appendix 2. Results for communalities for forty-one constructs.

Communalities	Initial	Extraction
Taking risk	1	0.495
Innovative	1	0.710
research and development	1	0.502
Utilize available opportunity	1	0.406
Taking individual responsibility	1	0.430
Stable in operation	1	0.471
Calm	1	0.516
Management respect for subordinates	1	0.438
Fairness	1	0.466
Tolerance	1	0.567
Opportunities for professional growth	1	0.551
Praise for good performance	1	0.595
Action oriented	1	0.542
Results oriented	1	0.581
Enthusiasm for the job	1	0.525
Highly organized	1	0.485
Analytically minded	1	0.584
Precision	1	0.532
Accuracy	1	0.595
Meticulous	1	0.426
Collaboration	1	0.534
Teamwork	1	0.521
people oriented	1	0.628
Coordination	1	0.561
enabling working environment	1	0.537
Mutual responsibility	1	0.584
Aggressive	1	0.631
An emphasis on quality	1	0.651
Being distinctive	1	0.547
Being competitive	1	0.576
Working long hours	1	0.412
Being reflective	1	0.535
Having a good reputation	1	0.521
Being socially responsible	1	0.545
Having a clear guiding philosophy	1	0.658
Hierarchical	1	0.496
Compartmentalized	1	0.525
Organized	1	0.670
Systematic	1	0.751
clear lines of responsibility and authority	1	0.646
High pay for good performance	1	0.399

Extraction method: principal component analysis.

Bold means rejected factors for the Factor Analysis because they recorded communalities less than 0.400.