

Impact of culture on the application of TQM in the construction industry in Botswana

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Total quality management (TQM) as an integrated approach to management that represents a holistic management philosophy, rather than a series of techniques, is embedded with cultural values and assumptions that are consistent with its culture of origin. This study aims to determine the outcome of implementing TQM in a place that does not share its cultural base. A survey of 100 construction firms in Botswana found that, although the values embedded in TQM could be adopted within the organisations into which it is implemented, the cultural context of the greater society resisted some of the values. It was concluded that, for TQM to be successful in a particular cultural setting, it has to take on some of the host cultural values.

Keyword(s): National cultures; TQM; Competitive advantage; Management philosophy; Construction industry; Botswana.

Introduction

The purpose of this paper is to discuss the outcome of implementing TQM as a management programme that is embedded with cultural values and assumptions in places that do not share its cultural base. Specifically, the paper reports on the attempts of implementing TQM in the construction industry in Botswana. The impact of cultural differences between the TQM approach and the cultural context at both the industry and national levels started to emerge.

Quality assurance (QA) and TQM are management programmes that have been formulated with the primary aim of improving productivity. However, current trends in seeking quality in construction projects are advancing in focus from QA under ISO 9000 (BS 5750) to TQM. This is in line with the acknowledgement by many that QA does not, of itself, ensure good quality, but does ensure realization of specification, i.e. provides confidence. There is also good evidence that the full implementation of TQM increases competitiveness and customer satisfaction, reduces waste and improves the working lives of employees. However, as Japanese industry has demonstrated, provision of quality requires continuous improvement grounded in culture and founded on practices conducive to such changes.

While the need to address management of individuals who view the world differently has been recognized, the difficulty of implementing the implicit cultural assumptions embedded in well-known managerial programmes in a way that is consistent with dominant cultural values has often been overlooked. TQM as an integrated approach to management that represents a holistic philosophy rather than a series of techniques is embedded with cultural values and assumptions,

which are consistent with Japanese culture where it originated. Therefore, when TQM is implemented in places that do not share its cultural base, differences with the cultural context will support or resist it. This may lead to success or failure of TQM.

QA and TQM

BS 4778 (BSI, 1987) defines QA as “all those planned and systematic actions necessary to provide adequate confidence that a production/service will satisfy the given requirements for quality”. ISO 9000 series takes this definition further by covering among others, planning and control. The emphasis on QA generally reflects lack of confidence in the industry and hence the perceived need to employ stringent control mechanisms to supplement sanctions against “failures” (Latham, 1994). Studies of quality at sites indicate that unacceptable quality is caused more by operatives’ lack of care than by lack of skills (Bentley, 1981) but that managerial issues are, by far, the greatest impediments in achieving quality. Furthermore, quality being a strategic issue, a culture conducive to its achievement should be fostered from the top through supportive leadership. Thus, attention is progressing towards TQM, which subscribes to these issues.

The management philosophy of TQM directs all strategic and operational policies in which the company engages (Deming, 1986). This philosophy is enacted within an organizational setting like a “prepackaged culture”. TQM is, therefore, embedded with its own set of cultural beliefs, norms, values and assumptions. Culture in organizations has been described as patterns of shared assumptions (Schein, 1991) socially acquired and shared knowledge that is embodied in organizational frames of reference (Martin, 1992) or as common and clear understandings (Meyerson, 1991). Implementation of TQM requires changes to the shared assumptions, frames of reference, and understandings that most organizations have developed through interaction with their environment. These changes will impact basic beliefs and values that employees hold about work. The receptivity of TQM is influenced by both the national and industry cultures. However, the national culture, which forms deep-seated values and assumptions appears to be quite insensitive to the transient culture of the specific industry (Laurent, 1992).

TQM has been applied successfully in culturally diverse national settings and the history of these applications suggest that over time, TQM takes on some of the host country’s cultural values, rather than attempting to change them.

The key features of TQM as described by Oakland (1993) and Creech (1994) can be summarized as:

- customer satisfaction;
- continuous improvement;
- leadership (total commitment of top management to the principles of TQM);
- emphasis on team work (problem solving requires cross-boundary communication and cooperation); and
- empowerment (attitudes and expectations about ways of working must change in line with the philosophy of TQM).

Culture and its influence

Hofstede (1984; 1991) defines culture as “the collective programming of the mind which distinguishes one group from another”, while Kempner (1987) defines it as “the sum total of beliefs, knowledge, attitudes of mind and customs to which people are exposed during their social conditioning”. Both definitions recognise the fact that when people grow up in different

environments, their cultures will be different. However, among the different cultures worldwide, there are issues that qualify as common basic problems (Inkeles and Levinson, 1969). These problems were identified to be: relation to authority; conception of self, in particular the relationship between individual and society, and the individual's concept of masculinity and femininity; ways of dealing with conflicts, including control of aggression and the expression of feelings.

National cultures differ in the way the members view the world (Stewart and Bennett, 1991), how they deal with uncertainty, the degree to which individuals are integrated into groups, the extent to which the less powerful members of organizations accept and expect that power is distributed equally (Hofstede, 1991), how information is processed, conceptions of time (Hall and Hall, 1990), how individuals establish relationships with others, the modality of human activity, what a human being's relationship to nature is, and the character of innate human nature (Trompenaars, 1994).

Culture dimensions

In researching national cultures, Hofstede (1984, 1991) concluded that appropriate dimensions were:

- power distance;
- uncertainty avoidance;
- masculinity/femininity;
- collectivism/individualism; and
- long-termism/short-termism.

A dimension is an aspect of a culture that can be measured relative to other cultures. Except for the last dimension which Hofstede concluded in the more recent study (Hofstede, 1991) the earlier four correspond to the ones defined by Inkeles and Levinson (1969).

Through a study of survey data about the values of people in over 50 countries around the world, Hofstede (1984; 1991) produced charts that characterize people of different countries based on the dimensions mentioned above. According to these charts Ethiopia, Kenya, Tanzania and Zambia are characterized as collectivist-feminine. Based on the work of anthropologist Isaac Schapera (1953; 1967) the culture of Botswana should be expected to be similar to that of the other Bantu peoples of the neighbouring Zambia. In this study, therefore, Botswana is characterized as collectivist-feminine.

Similarly, Trompenaars (1994) advanced value-orientational dimension for examining cultures:

- universalism-particularism (rules relationship);
- collectivism-individualism (group-individual);
- neutral-emotional (expression of feelings);
- diffuse-specific (degree of involvement); and
- achievement-aspiration (method of according status).

The ascription-achievement orientation, for instance, addresses the means by which a given culture assigns status within the society. According to Trompenaars (1994) achievement status refers to "doing" whereas ascription status refers to "being". Ascription, as opposed to achievement, assigns status and power based on some type of characteristic of the individual, for example, age, gender, education or profession. In ascriptive societies like Botswana and Arab states, status requires no justification, and simply implies "power". In addition, these societies

associate status and power with position and they attribute obligation to one's standing in society (Hofstede, 1984). Achievement oriented societies, like Swedish and American, on the other hand, place a high emphasis on skill and knowledge, and authority is assigned on this basis.

Trompenaars (1994) further elaborated that fatalism is viewed in opposition to determinism. They each describe an individual's relationship with nature and the perception of free will within the world context and both exist in all societies and in all individuals. However, some cultures, such as the USA, which is classified as deterministic, favour the view that man is the master over his environment and they value harnessing and exploiting issues such as time, space and change (Schneider, 1992). Individuals in these societies feel unconstrained by environmental factors and are capable of self-improvement.

In societies that tend to be more fatalistic than others, such as Botswana and Arab states, individuals share a lack of personal control over events. They believe that dominion over events lie with a greater power such as God and government, and that the individual is subservient to, or in harmony with nature. Thus, responsibility for events lies not with the individual but with nature or fate.

A survey of construction companies in Botswana

The key features of TQM as described by Oakland (1993) and Creech (1994) were investigated to determine how they are implemented in the Botswana construction industry and how compatible they are with embedded culture features in both the industry and national cultures in Botswana.

The construction industry in Botswana

Botswana is a sparsely populated country with a total area of 582,000 square kilometres and a population of 1.4 million people (Central Statistics Organization, 1991). The country has experienced rapid economic growth since the time of independence in 1966, and development of the infrastructure has been one of the country's priorities. Construction activities in general constitute an average of 7.5 percent of the gross domestic product (GDP).

The major client in the construction industry is the government, through its ministries and various government institutions. Others include public corporations such as the Botswana Housing Corporation (BHC), the power corporation (BPC), the railways (BR), the telecommunications corporation (BTC), Debswana, the water utilities corporation, and a number of private organizations.

Construction companies in Botswana are listed in six categories by the Central Tender Board (CTB), based on the maximum value of a single project that a company can handle, as shown in **Table I** (CTB, 1992).

Methodology

A survey that targeted both management and artisan categories was conducted in 100 construction companies in Botswana. Two sets of semi-structured interviews, one for management staff and the other for artisans, were conducted in companies that were randomly selected from classes B, C, D and E (Table I). The study was restricted to these classes of contractors because an earlier informal interview of contractors in classes OC and A showed that most of them have not bothered to introduce TQM in their companies. Although all the companies are registered as general contractors, only 11 of them were involved in civil engineering works at

the time of the interview. The rest of the contractors (89 of them) were involved in building projects of various types. The set of interviews that was administered to the artisans provided for additional clarifications, but was based on similar questions to the set that was administered to the management.

The interview questions were based on the key features of TQM as described earlier. Question one sought the views of the respondents on their companies' policy on customer satisfaction, while question two sought their opinion on how their companies carry out continuous improvement. Questions three and four sought the opinions of the respondents on how much the top management of their companies is committed to the principles of TQM and how they encourage team work respectively. Question five sought the opinions of the respondents on how their companies empower their employees.

Results and discussion

The main objective of the survey was to determine whether the key features of TQM were implemented in the selected companies from the points of view of management and artisan employees. Further, the survey sought to determine the compatibility of TQM culture with both the organizational culture of the industry and the national culture in Botswana. The following section presents the results and discussions of the semi-structured interviews.

Question 1. Does your company have a policy to ensure customer satisfaction?

The responses of management respondents to this question established that from the management point of view all companies have policies to satisfy customers (clients) in one form or another. Examples were given where site managers and contract managers were asked to hold both formal and informal meetings with client representatives to ensure that their requirements are clearly understood. However, the respondents understood the only customer in the projects they have been involved in to be the client (client representative). The extension of the definition of the customer to include both the internal and external stakeholder in the delivery chain was not understood that way by the respondents.

Responses to this question from artisan respondents established that from their point of view nothing is done to ensure that everything possible is done to satisfy the client. Examples were given of cases where certain details on drawings such as roof flashing that would create leakage problems in future could not be corrected because this was not specified in the contract documents. Another example was use of an unnecessarily large number of reinforcing bars for structural elements, which were familiar to the experienced steel fixers, but this could not be rectified as there was no such provision in the contract documents. This concurs with observations by Seymour *et al.* (1997) that some problems on site arise due to use of global data in the design process without due regard to site conditions for operations and adequate verification of what is reasonably achievable.

TQM culture regarding customer (supplier relationship) is that at each link within the delivery chain, it is the responsibility of the customer-supplier to signal his/her requirements and ensure that the requirements placed upon him/her are met. On the other hand, the construction industry is based on a culture that encourages award of projects to the low bidder. For this reason, clients adopt a very narrow view of the relationship with designers and contractors. They select contractors on price and expect their interests to be protected through contractual provisions. As a national culture, the society in Botswana tends to be fatalistic rather than deterministic. In this respect, the workers share a perception of a lack of personal control over events, the dominion over which is believed to lie with the management. This is contrary to TQM culture, which is

based on determinism-belief that people are responsible as individuals or as a group for their actions and can affect outcomes.

Question 2. How does your company carry out continuous improvement?

Responses from management respondents established that only ten of the companies surveyed had measures in place to ensure defects are prevented from occurring. These measures include among others; regular seminars with all supervisors and artisans to highlight the latest measures for preventing defects, holding of meeting to highlight the sensitive areas before any major piece of work is started and regular training of artisans. A total of 70 percent of the respondents said that their companies were at different stages of incorporating appropriate measures to improve quality. A total of 20 percent of the respondents said that their companies had not considered any measures to improve quality on project sites.

Responses from artisan respondents established that none of them was aware that their companies had measures that specifically aimed at preventing defects. Artisans from the ten companies where management respondents indicated that they have such measures in place said they understood the programmes to be aimed towards improving productivity.

Continuous improvement is the centrepiece of TQM as represented by the PDCA (plan-do-check-act) cycle (Deming, 1986). This model is most relevant to a continuing process, such as manufacturing, but to make it appropriate to construction projects and other projects that employ multi-disciplinary teams and modular approach, Rettig and Simons (1993) modified it using PADRE (plan, approve, do, review and revise, evaluate). Corrective action, measurement and goal setting are considered the main elements of TQM, but emphasis is on prevention rather than detection of defects. This requires initiative at both the individual and group level, rather than depending on management. As stated above, Botswana society tends to be fatalistic rather than deterministic. Thus, initiatives to carry out preventive measures at individual and group levels are left to the management.

Question 3. How committed to the principles of TQM is the top management of your company?

Responses to this question by management respondents established that the primary concerns of top management in all companies surveyed are cost and profitability. A total of 40 management respondents said the top management of their companies is aware of TQM and would like to reap its benefits, but consider the effort involved in establishing it to be unattainable. Of the management respondents, 58 said that the top management of their companies has always talked about TQM but has not taken any measures to implement it. Respondents from only two companies stated that the top management of their companies has shown full commitment to TQM by taking the leading role and provide the necessary tools. In general terms, the organizational culture of the companies could be said to be dominated by short-term financial considerations.

Responses from artisan respondents established that most of them (90 per cent) could not distinguish QA from TQM. For this reason their responses to this question may be misleading. The 10 per cent of artisan respondents who could correctly distinguish QA from TQM said that, from their point of view, their management keep talking about TQM but no action is taken on the ground.

Management's commitment towards quality is not only essential, it must also be clearly communicated. Every member of the team should be aware of this commitment and be

concerned about quality. For this to work effectively, management must introduce motivational activities, such as recognizing and rewarding team members for their contribution and extra work for the success of the TQM process. Awards are an essential element of TQM implementation because they emphasize the behaviours which are valued by management and they celebrate employees' accomplishments. Due to their colonial history and the traditional administration by chiefs and their representatives, the Botswana society is more ascriptive than achievement oriented. Often, status and power, which require no justification in such societies, are associated with position, and obligation is attributed to one's standing in society. The workers, therefore, do not aspire to achieve awards, which are emphasized in the TQM culture.

Question 4. Does the management of your company encourage teamwork?

Responses by management respondents to this question established that all companies encourage teamwork when there are tangible benefits such as early completion of projects or lowering of costs. Otherwise, all respondents emphatically stated that teamwork is not encouraged in their companies.

Responses from all artisan respondents indicated that from their point of view their companies do not encourage teamwork. One respondent elaborated that the few teams in the company are rife with accusations, recriminations and blame.

A key concept of TQM culture is that functional boundaries are irrelevant, because problems cross functional lines. Committees and teams must be formed, mainly of the cross-functional variety, to coordinate activities of various individuals belonging to different departments and run the TQM process. Teams are essential for maintaining constancy of purpose; for breaking down barriers between departments and for driving out fear (Deming, 1986). Teamwork in a quality organization must be based on commitment to the customer and to continuous improvement; and team leaders must have the ability to motivate team members in ways to meet these objectives.

Contrary to TQM culture which encourages teams to solve inter-departmental problems the fatalistic nature of the Botswana culture tends to make employees feel that such problems as quality are beyond their ability and can only be solved by higher authorities. Hence, even if the management establishes quality teams, their members may not recognize their formation as can be depicted from the responses to Question 2 by artisan respondents.

Question 5. Does your company endeavour to empower its employees?

The responses to this question established that only 20 of the surveyed companies specifically empower their employees through giving them responsibility and authority to make decisions, according to management respondents. Of the management respondents, 31 stated that, because the employees are recruited on project basis, they do not spend enough time in the company for the management to have confidence in them and give them power to make decision at their levels of operation.

Responses from artisan respondents from the 20 companies whose management respondents said they specifically empower their employees concurred with this response. All the remaining artisan respondents (80 per cent) were of the opinion that, wherever their management feels they have enough competence, they are allowed to make decisions.

Employee empowerment, which stems from the TQM principle of "respect for people" has been identified as the most important element in TQM culture (Juran, 1988; Shrednick *et al.*, 1992). Changing the way tasks are accomplished and focusing on customer needs requires

enhancement of employee roles and responsibilities. This dictates that employees be empowered to make decisions and have access to information. Organizational culture may stifle this development as indicated by the responses to Question 5, because the management may feel that employees are not prepared to handle these additional responsibilities. They may also feel threatened by empowered subordinates. Similarly, empowerment requires the cognitive perception of an individual's ability to influence his/her environment and an acceptance of responsibility at the individual level (Thomas and Velthouse, 1990). Thus, the devaluation of achievement that is generated by the ascriptive nature of the Botswana culture stifles opportunities to channel and reward individual's efforts towards organizational objectives. This was clear from the responses of artisan respondents to Questions 4 and 5.

Conclusions

This paper has attempted to highlight the influence of both the organizational and national cultures on the implementation of TQM in the construction industry. The review showed that TQM is embedded in a culture that may or may not be consistent with the organizational and/or national culture of the host industry. Where inconsistency is the case, conflicts arise.

The study in Botswana showed that, in general the implementation of the key features of TQM often conflicts with the national culture. This does not mean that the latter should change in order to be consistent with the former. What is required is the awareness of this inconsistency and the development of a tool that can specifically determine the items that should be addressed so that conflicts can be minimized.

The study reported the early stages of introduction of TQM in the construction industry in Botswana. However, as TQM was introduced in the other industries at almost the same time, it will be of interest to determine whether the impacts of culture that were observed in the construction industry apply to the other industries. Also, the study needs to be extended to other countries in the region to give access to more diverse cultures and determine their impact on TQM.

Table I. Classification of construction companies in Botswana

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