

Chinese culture and successful implementation of partnering in Singapore's construction industry

ANG YEE KWAN¹ AND GEORGE OFORI²

¹JTC Corporation, The JTC Summit, 8 Jurong Town Hall Road, Singapore 609434

²Department of Building, National University of Singapore, 4 Architecture Drive, Singapore 117566

Received 18 September 2000; accepted 30 April 2001

Partnering is based on the principles of trust, mutual respect and cooperation towards the achievement of a common goal. Although partnering can help to resolve the problems of Singapore's construction industry, its usage is relatively low. This paper examines whether Chinese culture can facilitate partnering implementation in Singapore's construction industry. This is because Chinese culture contains some values that are important determinants of success of partnering. A postal survey on Chinese-owned large contractors in Singapore was undertaken to ascertain how Chinese culture influences their way of conducting business and the implementation of partnering. The study showed that Chinese contractors understand their culture as comprising certain core values that influence the operations of their businesses and their relationships with others, and that Chinese culture aids the implementation of partnering. It is suggested that Chinese construction entrepreneurs should apply the elements of their culture to formulate appropriate business practices, and to implement partnering.

Keywords: Partnering, Chinese culture, business practices, construction industry, Singapore

Background

Singapore's construction industry faces problems and conflict; its structure is considered to be complex and fragmented (Lim and Low, 1992). The level of construction productivity and its growth rate are consistently the lowest among the sectors of the Singapore economy (EPC, 1991; CPT, 1992). To meet the needs of the developed economy that Singapore will soon become, these problems should be resolved. The *Construction 21 Report* (Construction 21 Steering Committee, 1999, p. 12), the blueprint for developing Singapore's construction industry up to 2010, urges the adoption of 'progressive procurement methods' that can 'integrate the activities of the various industry players to achieve synergy and attain productivity breakthroughs'.

Partnering has worked well in the construction industries of several countries (Matthews, 1999). As a construction management concept, partnering is relatively recent, dating from the mid-1980s (Hancher, 1989) although partnering between contractors and private clients is not new (Godfrey, 1996). The Construction Industry Institute (CII, 1991) suggests that partnering was pioneered on projects of the US Army Corps of Engineers and the Arizona Department of Transportation. It has been used in several countries including the UK (Reading Construction Forum, 1998; Green, 1999), Hong Kong (Chan *et al.*, 1999) and South Africa (Allen *et al.*, 1999). Authors note that partnering is the normal way of working in Japan's construction industry (Reading Construction Forum, 1998). It is suggested that the key elements of partnering, such as trust and continuous joint evaluation, help to improve productivity on projects. However, partnering is not widely practised in Singapore's

*Author for correspondence. e-mail: bdgofori@nus.edu.sg

construction industry due to low awareness and skepticism about its workability and benefits (Ng, 1997).

Chinese form 78% of Singapore's multi-racial population (Census of Population Office, 1992). The Chinese emigrated to Singapore, mainly at the turn of the 20th century, for economic reasons, and concentrated on business activities related to employment and trade. Chinese culture and tradition mainly influenced their thinking, although many of them acquired Singapore citizenship and absorbed local cultures (Sheh, 1995). As in many Southeast Asian countries (Mackie, 1998), the ethnic Chinese are important players in Singapore's economy (Pang, 1994). The owners of construction enterprises are predominantly Chinese. This factor may be important to the successful implementation of partnering in Singapore's construction industry as the key features of Chinese culture suggests that it will enhance the application of partnering (Ofori, 1995).

The research study

Research aim, objectives, hypotheses and scope

The business culture of societies reflects their dominant values. This paper examines the cultural dimension of partnering, and whether Chinese culture can enhance the implementation of partnering in Singapore's construction industry. The objectives of this investigation are to:

- study the business culture of Chinese who own most construction enterprises in Singapore;
- study the success factors of partnering in construction;
- ascertain how Chinese culture affects, or can affect, the implementation of partnering in Singapore's construction industry; and
- propose ways of promoting the usage of partnering between Chinese contractors and clients in Singapore.

The study set out to verify three hypotheses: first, that the Singapore Chinese contractors' way of conducting business is influenced by Chinese culture; second, that Chinese culture can help to promote partnering in the Singapore construction industry; and third, that it is easier to partner between Chinese contractors and clients because of their similar culture.

Partnering has many definitions and takes different forms (see, e.g., Hamza *et al.* 1999; Li *et al.*, 2000). In the literature, two main forms of partnering are identified: short-term partnering (for a single project) and long-term partnering (more strategic in nature). This study concentrates on long-term partnering

between contractors and clients, focusing on the contractors' point of view.

Research method

The study was based on a mailed questionnaire survey. The questionnaire was prepared after a literature review on culture as it pertains to commercial organizations and specifically Chinese business culture, together with the key features and success factors of partnering. The survey sought to ascertain the understanding of Chinese culture of Chinese contractors in Singapore, their way of conducting business, their views on partnering and whether they think Chinese culture affects the implementation of partnering. The results were analysed using SPSS. Before the report on this, some relevant published work is reviewed. The topics covered are culture (including Chinese culture and its relevance to business management, and the culture of the construction industry), and partnering.

Previous work

Culture

Culture and organizations

The word 'culture' has many meanings, which have changed over the past two generations (Barthorpe *et al.*, 1999). Kroeber and Kluckhohn (1952), American anthropologists, presented 160 different definitions of culture. Bodley (1994) culled a simple version that stated that culture involves what people think, what they do, and what they produce. Culture has several properties: it is social heritage or tradition; it is shared, learned human behaviour; and it is symbolic, and based on shared, assigned meanings of the members of a group. Putti and Chia (1990) considered culture as a set of values, beliefs, norms, attitudes and habits of a group of people, pointing out that a society's beliefs and values have an impact on the way business is conducted in that society.

Hildebrandt *et al.* (1991) suggested that the implementation of an organization's culture is influenced by: nature of environment, type of company, and special character of company and employees. To Handy (1985), the factors that influence organizational culture were: organization's history, ownership and size; technology of production; goals and objectives; market; competitive scene; geographical and societal environment; and people. Johnson and Scholes (1993) considered the way culture drives organizational strategies, and emphasized that culture is influenced by external factors such as values of the society and organized groups, and by internal factors which they refer to as

the 'cultural web'. Morgan (1986) noted that culture within organizations is reflected in the way people perform tasks, set objectives and administer resources. It affects the way people consider issues, analyse and solve problems, make decisions and take actions in response to opportunities and threats.

Handy (1985) identified four primary forms of organizational culture: 'power', which is configured as a web with the primary power at the centre; 'role', in which functions and professions provide the structural pillars to support the overarching top management; 'task', in which jobs or projects are a primary focus yielding an organizational net; and 'person', in which people interact and cluster relatively freely.

Quinn (1988) proposed the 'competing values framework' for analysing corporate culture. The framework has two axes: the vertical axis ranges from 'flexibility' to 'control', and the horizontal axis from an internal to an external focus. In each quadrant of the framework were: 'open systems model' (the Adhocracy), 'rational goal model' (the Firm), 'internal process model' (the Hierarchy), and the 'human relations model' (the Team). For example, the external focus reflects an orientation towards competition, engagement, urgency, or short time lines, whereas internal focus indicates maintenance, coordination, equilibrium, or longer time lines.

Hall (1995) offered the 'compass model', which expresses cultural styles of behaviour in two main dimensions: 'assertiveness' (forceful and direct) and 'responsiveness' (emotionally expressed). She distinguished four styles: north, south, east and west. For example, the east style is 'low assertive, high responsive', whereas the west style is 'high assertive, low responsive'. Cheng (1998) advances the 'C theory', based on Chinese culture and philosophy, and Western management ideas. The theory considers two polarities: rationalistic and humanistic management.

Culture and construction

Culture is an emerging area of research in construction, with a growing literature. Barthorpe *et al.* (1999) present a useful review. There are many studies on the impact of culture on construction, as well as the culture of the construction industry, projects and organizations. Several authors highlight the importance of sensitivity to cultural differences in international projects, especially in the era of globalization (see, e.g., Hall and Jaggard, 1997; Langford, 2000). Low (1998) suggested that international contractors operating in China should note the deeply rooted cultural practices and beliefs of their Chinese business associates.

Rowlinson and Root (1997) found that the conditions of contract have limited impact on project performance. Instead, project prehistory and prior working

relationships have the most significant impact on project culture. Liu and Fellows (1996) explored the relationship between the procurement process and mechanisms and the mindset, values, beliefs and behaviour of the people involved in construction. Hall and Jaggard (1997) suggested that the key elements of culture should be understood, appreciated and incorporated into procurement arrangements. Liu and Fellows (1999) explored the impact of culture on construction project goals, including its implications for procurement and organizations. Rwelamila *et al.* (1999) found that the poor construction project performance in most African countries may be due to a failure to consider cultural issues, especially the concept of *ubuntu* (which has the following features: morality, humaneness, compassion, care, understanding and empathy) in the selection of procurement arrangements. This view was further reinforced by Rwelamila *et al.* (2000, p. 457) who referred to 'hyper barefoot empiricism' among African construction practitioners, the tendency to adopt procurement approaches which do not consider local factors, and lead to inconsistent and unpredictable outcomes.

Culture of construction industry

Newcombe (1997, p. 533) defined a project's culture as: 'the shared values, beliefs and assumptions of the stakeholders involved in a project'. Its positive consequences include: enhanced project effectiveness; reduced parochialism and rivalry; and ability to reconcile conflicting project strategies. Its negative consequences include difficulty to introduce change and innovation. Applebaum (1981) reviewed the culture inherent in the US construction industry, studying the workers' attitudes, behaviour and values.

Owing to the nature of the constructed product (location specificity and bulkiness of components (Hillebrandt, 2000)), the social base of the construction industry is decentralized and local. Thus, the industry is fragmented, with a few large firms and a multitude of small firms which often work as subcontractors (Hillebrandt, 2000). This leads to family-like relationships between the main and subcontractors, but can have adverse effects on quality and productivity. Moreover, in construction there is still a predominance of informality, personal relations, community-like networks and the acceptance of verbal decisions. Lenard (1999) noted that the construction industry is subject to historical, industrial and market forces that perpetuate the existing culture and management style, and inhibit the industry's ability to initiate change.

In response to the inherent instability of the workload of construction enterprises, they are usually short-term oriented. Thus, they rely on non-permanent

workers, which offers them flexibility but adversely affects quality and productivity (Ofori and Debrah, 1998); also, they are unwilling to invest in technology. In most countries, the construction industry's workforce is predominantly male. As Barthorpe *et al.* (1999) suggest, this 'macho' culture has certain consequences, including the industry's negative social image, adversarialism and confrontational relationships.

Chinese business culture in Singapore

Chinese philosophy

Chinese culture, which has evolved for more than 5 000 years, is influenced by three moulding forces: Confucianism, Taoism and Buddhism, which have acted together to produce a culture of humanism, making the Chinese way of life intensely practical and philosophical (Sheh, 1995; Haley *et al.*, 1998).

Confucius was born in 551 BC, when China was experiencing considerable disorder. Confucianism has significantly influenced the Chinese way of life. Its influence covers 'humanity' (*ren*), personality and character, education, 'familism', rites and music, as well as how to govern the country. *Ren* is based on humanism, which comprises courtesy, magnanimity, 'good faith', diligence and kindness. Confucianism has formed the basis of the culture of much of Asia, which regards *ren*, based on 'mutual trust', as the binding force of society (Chao, 1994; Low, 1998). Confucius also identified four core areas as important attributes: education, commitment, collective responsibility, and mutuality and respect. Confucius emphasized tolerance, harmony, solidarity, trustworthiness, contentedness and conservatism (Sheh, 1995).

Buddhism is a religion and philosophy founded by Siddhartha Gautama, also known as Buddha Sakyamuni, in India (Cheu, 2000). He was born about 563 BC. His teachings include the 'eightfold path': right understanding, right thought, right speech, right action, right livelihood, right effort, right mindfulness, and right concentration. Often the eightfold path is considered to comprise mainly wisdom, discipline, and conduct. Buddhism teaches non-violence. Mair (2000) sees Chinese religion as a composite of three great traditions, where Confucianism represents the warp, Taoism the woof, and Buddhism the applique. As the applique, Buddhism has been deeply and firmly woven into the basic fabric of Chinese society and culture.

Tao can be roughly translated into English as 'path', or 'the way'. It refers to a power that envelops, surrounds and flows through all living and non-living things. The Tao regulates natural processes and nourishes balance in the Universe. It embodies the harmony of opposites (i.e. there would be no love without hate, no light without darkness, no male without female).

Lao-Tse (604–531 BC) is widely believed to have founded Taoism in his search for a way that would avoid the constant feudal warfare and other conflicts that disrupted society during his lifetime. The result was his book: *Tao-te-Ching*. Taoism started as a combination of psychology and philosophy, but was adopted as a state religion in 440 CE. Taoists follow the art of *wu wei*, which is to achieve action through minimal action. A Taoist is kind to other individuals, largely because such an action tends to be reciprocated.

Chinese cultural values

Confucius stressed the virtues of gentlemen such as *zhong* (loyalty) *xiao* (piety), *ren* (benevolence), *ai* (love), *yi* (justice), *he* (harmony) and *ping* (peacefulness). In this study, only Chinese cultural values related to partnering are explored.

In a Chinese organization, humanism is considered an important value of a good-natured manager. Such a manager practises courtesy, magnanimity, good faith, diligence and kindness. The basis of a cordial relationship in the organization is the upholding of interpersonal harmony, and group orientation. According to Hsu (1955), when seeking a resolution of differences, the Chinese tend to compromise. Personal relationships form the basis of social order and correct behaviour among the Chinese (Butterfield, 1983; Pennett and Zhao, 1992).

The Chinese written character for 'face' represents respectability, reputation and pride. Face connotes the dignity of a person resulting from interpersonal relationships with his superiors, peers and subordinates (Tu, 1984). Face-saving behaviour ensures harmony. The notion of face views the individual not as inner-directed but sensitized to the imperative of face keeping vis-à-vis others (Hsu, 1955). Face will be lost when the person (or those related to him) fails to meet essential requirements placed upon him by virtue of his social position (Ho, 1976). In business, to give face, considerable time may be spent in socializing and exchanging pleasantries (Tan, 1990). To the Chinese, such socialization promotes harmony and builds trust.

In Chinese organizations, continuing relationships are very important. These are, in part, based on family and other ties, such as clan, shared surname, home village, region, education or other shared experience (Jacobs, 1980). *Guan xi* depends upon two or more persons having a commonality of shared identification, which may be ascriptive, or may rest upon shared experience (Jacobs, 1979). *Guan xi*, often referred to as 'connections' (Lockett, 1993), can be defined as a relationship combined with reciprocity of special relationships two persons have with each other. Cordial *guan xi* is necessary in ensuring that Chinese business networks operate reliably. Redding (1980) suggested, from

studies in Hong Kong and among overseas Chinese, that organizations exhibit nepotism, family control, patronage and the development of cliques, usually based on clans or regions of origin. In Taiwan, Saner-Yui and Saner-Yui (1984) reported the prevalence of 'relationship-oriented' as opposed to 'performance-oriented' evaluations. Menkhoff (1993) identified seven kinds of ties upon which *guan xi* could be based: kinship, locality, commonality of surname, coworkership, classmateship, sworn brotherhood and friendship.

Guan xi based on kinship ties is often considered a characteristic of Chinese commercialists worldwide (Greenhalgh, 1984). People sharing identification with their native place have locality *guan xi*. The commonality of a surname may also serve as a base for the generation of *guan xi*. Coworker *guan xi* may facilitate business contacts and transactions, provided that both business partners are engaged in related lines and that other preconditions (such as quality and price) are fulfilled. The importance of classmate *guan xi* dates from China's imperial history (Jacobs, 1979). Blood brotherhoods and the godparent system are forms of ritual kinship (Jordon, 1985). Friendship is another possible *guan xi* base.

In making decisions, Chinese tradition emphasizes 'harmony with each other', and the group as the optimization criterion, unlike the Western thinking of optimizing one's self-interest (Li *et al.*, 1992). Harmonious relationships between employees and employers, between the firm and its customers and among businessmen are primarily based on honesty and integrity.

Collective responsibility stems from the tradition of distrusting formal rules and regulations, and a dislike of written contracts, both emphasizing ethical rather than legal norms of conduct (Low, 1998). Confucianism emphasizes conciliatory human relations with mutual understanding ('mutual understanding and respect') (Low, 1998).

Trustworthiness, that is, relying on the 'moral injunction' of keeping one's word or face, is probably the predominant feature of Chinese-Chinese business transactions. It is maintained through a complex network of manners covering social obligations (Barton, 1983). Trust or trustworthiness is considered as a central mechanism and lubricant in business relationships (Menkhoff, 1998). In general, the Chinese feel more comfortable when dealing with people to whom they can relate and not merely talk (Lim, 1997).

Low (1998) concluded that the business culture of the Chinese today is influenced by many thoughts and strategies. A typical Chinese struggles to remain morally upright (Lao Tzu's teachings) as a gentleman (Confucius' teachings) and yet strives to protect his self-interest strategically (Sun Tzu's Art of War) or otherwise ('thick black theory').

Management practices of Chinese firms

Sheh (1995) studied Chinese philosophy and cultural values to reveal the logic behind Chinese management practices, the problems of Chinese organizations, and possible solutions. Chu (1991) outlined basic differences between the business culture of Chinese and Westerners. Chinese firms differ in management structure from western firms in that most of them are family businesses (Weidenbaum, 1996) with power controlled by a few family members (Lee, 1996) who fill most of the top management positions. Because of Confucian influence, Chinese business leaders emphasize collective responsibility, and promote social order and harmony.

Westwood and Kirkbride (1990, p. 1) found 'a cohesive form of Chinese business practices' among overseas Chinese communities including: a distinctive leadership style characterized by paternalism and authoritarianism; nepotism; a reliance upon personal relationships rather than bureaucratic structures; high centralization; conflict avoidance; and the pursuit of harmony in work relationships. Mackie (1998) highlights the following structural and institutional elements in Southeast Asian Chinese economic life: the Chinese family and family firm, closely guided by the father; the networks that transcend geographical boundaries; and the *bang* (speech group) and lineage or clan associations which provided mutual support. He notes that researchers stress *xinyang* (trust, creditworthiness) and *guan xi*, which reduce transaction costs in business where legal safeguards for enforcing contracts are often unreliable.

Westwood and Kirkbride (1990, p. 21) concluded that large companies owned and run by ethnic Chinese 'stand . . . at the confluence of Western and traditional Chinese values. Their size, mode of operation, international exposure and . . . modernization make it unlikely that they can continue to operate solely within the parameters of the traditional culture.' Similarly, Pang (1994) noted that large Chinese firms have been professionalized, and apply a management style that is a Chinese-Western amalgam.

Wolfgang (1994) found all the above intrinsic cultural values in Chinese traders in Singapore. The maintenance of personal networks is found both in their daily attitudes and economic actions. Menkhoff (1993) studied trust among the trading networks of Chinese businessmen in Singapore. Vimi (1994) studied how face affected performance appraisal in Singapore organizations. The principal characteristics of Chinese firms in Singapore may be summarized as follows (Siling, 1976; Limlingan, 1986; Tam, 1989; Redding, 1990; Chan, 1995; Ang, 1998): small-scale businesses with simple organizational structure; focus on one product or market, with growth by opportunistic diversification;

centralized decision making, mainly by one dominant executive; close overlap of ownership, control and family; paternalistic organizational climate; linkage of the business to the environment through paternalistic, informal networks; cost sensitive, financially efficient operations; and high degree of strategic adaptability.

Studies of the influence of Chinese culture on business management have also been undertaken within China (see e.g. Pan and Hu, 1998; Chan, 2000). Authors warn against the tendency of Western researchers studying the influence of Chinese culture on business to generalize and oversimplify (Ku, 1998). It is worth noting that there are differences among overseas Chinese societies, as well as between them and their compatriots in China. For example, Ku (1998) reviewed several studies that showed that Chinese Singaporeans investing in China failed to appreciate their Chinese partners' business principles and negotiating strategies, and the nature of the operating environment. Thus, most were dissatisfied with the outcome of their investment.

Partnering

Partnering involves a return to the old ways of conducting business, which were based on values such as trust, commitment and open communication (Fellows, 1997). Crowley and Karim (1995) and Matthews (1999) reported that typically partnering is defined by: (i) its 'attributes', such as trust, shared vision and long term commitments; and (ii) the 'process', including developing a mission statement, agreeing goals, and organizing and conducting workshops.

In partnering, participants in the same contract have the same objective that can be accomplished through cooperation and open communication (CIIA, 1995) to the benefit of all. Under a formal strategy of commitment and communication, trust and teamwork prevent disputes and foster a cooperative bond among stakeholders. Cowan *et al.* (1992) stressed that partnering is a philosophy: it represents a commitment of respect, trust, cooperation, and excellence for all stakeholders.

The Construction Industry Institute (CII, 1991) noted that partnering offers many opportunities for US participants to achieve cost savings, improve quality and develop a working atmosphere conducive to innovation, teamwork, trust and commitment. The Reading Construction Forum (1998) identified three generations of partnering. Second generation partnering required a strategic decision to collaborate in improving collective performance by all parties within the construction supply chain. In the third generation, the construction industry becomes 'state-of-the-art', producing and marketing a range of products and services.

Latham (1994) advocates the use of partnering to solve the problems of the UK construction industry. He stressed that good relationships based on mutual trust benefit clients by improving performance and reducing costs. Egan (1998) also supported partnering, a powerful tool which could be employed increasingly to deliver valuable performance improvements in the UK construction industry.

Culture and essential elements of partnering

Fellows (1997, p. 200) believed that partnering provides 'a good cooperative framework, which encourages forbearance and yields an output of enhanced trust between participants'. Essential elements required for the success of partnering are suggested in the literature (see Li *et al.*, 2000).

Generally, trust is seen as the cornerstone of a successful partnering relationship (Hellard, 1995). Trust is the expectation by one trading partner that another partner will behave in a predictable and mutually acceptable manner (Sako, 1992). Latham (1994) saw trust as the gatekeeper to progress in improving procurement and contractual relations in the UK construction industry. Lau (1999) suggested that trust is built through cooperation, negotiation and constant communication. Through personal relationships, and communication about each stakeholder's risks and goals, there is better understanding, which leads to trust and, possibly, a synergistic relationship (Uher, 1994).

Changing existing organizational cultures may help to align goals and promote trust between organizations and among individuals. A shared culture can enhance commitment and consistency of individual behaviour.

The commitment of upper management in each organization is fundamental. Senior personnel can nurture and reinforce the partnering process, and counter detractors' arguments (Kubal, 1994). All stakeholders' interests are considered in creating mutual goals, and there is commitment in satisfying each stakeholder's requirement for a successful project by utilizing win-win thinking. There must be a shared vision for the partnering relationship, with mutual goals through sharing of ideas and expectations. Stakeholders must agree to periodic joint evaluation, to ensure the plan is proceeding as intended and that all stakeholders are carrying their share of the load.

Benefits and problems of partnering

Matthews (1999) listed 94 benefits of partnering; most important for the client and contractor are: reduced exposure to litigation; lower risk of cost overruns and delays; and more efficient resolution of problems. Li *et al.* (2000) highlighted the following benefits: expedite work processes; eliminate redundant work; minimize surprises; produce cost savings for clients and

profits for contractors; meet time, quality and safety targets; and reduce claims and variations.

Harback *et al.* (1994) identified five pitfalls of partnering: unfulfilled expectations; unfinished business in which some elements of the partnering arrangement are still in dispute; assumption that all parties involved in the partnering are willing to share personal beliefs and thoughts; and adoption of a one-size-fits-all approach to all projects. Hellard (1995) also highlighted the following potential problems: those conditioned to the adversarial environment may perceive risks in trusting; top management may not be committed; and changing myopic thinking and cultures is not easy. Akintoye and Black (1999) identified five risk factors: managers' unwillingness to relinquish control; partners becoming complacent; increasing dependence on a partner; pressure to perform; and a partner reverting to adversarial relationship.

Authors urged further research on partnering. Green (1999) warned that the propaganda on the merits of partnering (such as absence of adversarial relationships, continuous improvement and customer responsiveness), may disguise the exercise of buying power, control and surveillance by powerful clients. He urged independent research into partnering. Similarly, Bresnen and Marshall (1999, p. 185), after analysing many case studies, demonstrated 'the value of deconstructing partnering in order to understand more fully the difference between rhetoric and reality, and thus the possibilities and limitations of partnering in practice'.

Partnering in Singapore

Partnering was the traditional way of doing business in Singapore: acting in good faith and one's word being one's bond. However, over the years, the relationship among different parties in the construction industry has become adversarial (Ng, 1997). This has impeded the development of the industry (Construction 21 Steering Committee, 1999).

Ng (1997) found that the level of awareness of partnering in the Singapore construction industry was low, although partnering could provide an effective remedy for the industry's adversarial approach. Teng (1998) found that short-term partnering would be feasible in public construction which has been plagued by adversarialism. The hurdles which needed to be overcome were bureaucracy, the cultural barrier and the lack of expertise. Similarly, Tan's (1999) research underlined the importance of building up a pool of partnering facilitators in Singapore to ensure the success of partnering implementation.

In the next section, the field study is presented. It includes an outline of the design of the survey, and an analysis of the results.

Field study

Survey design

The above discussion shows that some Chinese cultural values can underpin partnering. The questionnaire for the field survey was designed to test this, and was constituted as follows.

Section I: Assessed respondents' understanding of Chinese culture. There was one question on a five-point scale, denoting 1 for 'strongly disagree', 2 for 'disagree', 3 for 'neutral', 4 for 'agree' and 5 for 'strongly agree'.

Section II: Considered the influence of Chinese culture on respondents' way of conducting business. There were two 'yes/no' questions; and two questions on a five-point scale.

Section III: Studied respondents' familiarity with and understanding of partnering, prefaced by introductory definitions of partnering and its two main forms. There were four 'yes/no' questions, and several supplementary factual questions on applications, benefits and hindrances to partnering plus the influence of Chinese culture on the decision to adopt partnering, and what can promote partnering in Singapore

Section IV: Established the profile of respondents: company's specialization, registration category and year of establishment.

Stratified sampling was adopted to select building contracting firms registered with the Building and Construction Authority (BCA) which are owned by Chinese Singaporeans by consulting the *BCA Directory of Registered Contractors 1998/1999* (BCA, 1999). Only contractors in the two highest financial categories (G7: tender limit S\$50 million; and G8: unlimited) were considered for sampling. The rationale was that only relatively large contractors have the resources and expertise to adopt partnering. 77 Chinese Singapore building contractors were identified for the survey; 43 were G8 contractors and 34 were G7 contractors.

In the analysis, the five points on the (five-point) scale were converted into values from -2 to +2 (i.e. point 3 on the scale was equal to zero). The one-sample *t*-test was used to determine whether the mean rating of a sample was significantly different from the population mean, $\mu_x = 0$ (see e.g. McClave and Benson, 1994). The test statistics were computed using the formula

$$t = \sqrt{n} (\bar{X} - \mu_x) / S,$$

where \bar{X} is the sample mean, μ_x is the population mean, S is the sample standard deviation and N is the sample size.

Survey results

Twenty-seven contractors responded to the survey, giving a response rate of 35%; 14 of the respondents were G8 contractors, and 13 were G7 firms.

Chinese culture and construction business

The first section of the survey was to determine the understanding of Chinese culture by the contractors. Table 1 shows the analysis of the response of the contractors on the importance of the attributes of Chinese cultural values. From the table, the more significant Chinese cultural values identified by the contractors are: face; trust and friendship; *guan xi*; mutuality and respect; and maintaining harmony.

The aim of the second section of the survey was to determine whether Chinese culture affects the way they conduct businesses. Seventy-four percent of respondents considered Chinese culture as a major influence on the way business is conducted in their company, whereas the remaining 26% felt it is not. Each category of response had about equal numbers of G7 and G8 contractors.

Table 2 shows an analysis of the responses regarding the characteristics of Chinese culture which affect the respondents' running of their business. The more significant Chinese cultural values affecting the contractors' running of their business are: trust and friendship; mutuality and respect; *guan xi*; diligence;

Table 1 'I think an important attribute of Chinese culture is . . .'^a

Cultural value	Mean	Standard deviation	t-statistic	p-value
Face	1.22	0.70	9.099	0.000
<i>Guan xi</i>	1.11	0.80	7.211	0.000
Collective responsibility	0.52	0.89	3.017	0.006
Mutuality and respect	0.96	0.76	6.596	0.000
Trust and friendship	1.15	0.66	9.007	0.000
Maintaining harmony	0.89	0.89	5.181	0.000
Magnanimity	0.41	0.93	2.275	0.031
Diligence	0.81	0.62	6.802	0.000
Kindness	0.19	1.11	0.866	0.394 ^b
Solidarity	0.33	0.73	2.360	0.026

^a $n = 27$; $df = 26$.

^bDo not reject null hypothesis at 95% confidence level

Table 2 'Indicate the extent to which you agree that these characteristics of Chinese culture affect the running of your business'^a

Cultural value	Mean	Standard deviation	t-statistic	p-value
Face	0.70	0.78	4.716	0.000
<i>Guan xi</i>	0.93	0.73	6.592	0.000
Collective responsibility	0.59	0.75	4.121	0.000
Mutuality and respect	1.07	0.68	8.266	0.000
Trust and friendship	1.15	0.82	7.291	0.000
Maintaining harmony	0.70	1.07	3.425	0.002
Magnanimity	0.37	0.97	1.991	0.057 ^b
Diligence	0.85	0.60	7.359	0.000
Kindness	0.30	0.87	1.772	0.088 ^b
Solidarity	0.33	0.78	2.208	0.036

^a $n = 27$; $df = 26$.

^bDo not reject null hypothesis at 95% confidence level.

face; and maintaining harmony. As discussed above, many of these values are analogous to the elements needed in partnering implementation.

Table 3 illustrates the respondents' views on the characteristics of Chinese culture which affect their business relationships with others. The mean ratings are quite low, and in three cases they are equal to zero at a 95% confidence level. The more important values affecting the contractors' business relationship with others are: trust and friendship; mutuality and respect; and *guan xi*.

Table 3 'Indicate the extent to which the following characteristics of Chinese culture affect your company's business relationships with other companies'^a

Cultural value	Mean	Standard deviation	t-statistic	p-value
Face	0.56	1.01	2.850	0.008
<i>Guan xi</i>	0.78	0.89	4.533	0.000
Collective responsibility	0.33	0.73	2.360	0.026
Mutuality and respect	0.85	0.72	6.164	0.000
Trust and friendship	1.00	0.68	7.649	0.000
Maintaining harmony	0.41	0.93	2.275	0.031
Magnanimity	0.19	0.62	1.546	0.134 ^b
Diligence	0.59	0.64	4.841	0.000
Kindness	0.11	0.64	0.901	0.376 ^b
Solidarity	0.26	0.76	1.763	0.090 ^b

^a $n = 27$; $df = 26$.

^bDo not reject null hypothesis at 95% confidence level.

Seventy percent of the respondents felt that the construction companies run by Chinese Singaporeans have a Chinese-oriented business structure. Again, the breakdown of the responses from the G7 and G8 contractors was about the same.

Partnering process

Two questions requiring 'yes/no' answers were posed to ascertain the level of awareness of partnering, and the partnering experience of respondents. About 41% of the respondents had not heard of partnering. This represents an improvement in the situation from Ng's (1997) study where 69% of respondents had not heard of partnering. Significantly more G8 contractors than G7 firms had heard of partnering.

Although 59% of respondents had heard of partnering, only 33% of all respondents had practiced some form of partnering. Two-thirds of these respondents were G8 contractors. Therefore, the size and capacity of the contractors appear to play a part in partnering implementation.

Respondents who had practiced Partnering were requested to indicate its benefits. The benefits highlighted, in order of importance, are: effective utilization of resources; cost reduction; increased profit; and time savings. 'Improved quality' and 'less conflict' ranked equal sixth. The respondents also listed the difficulties encountered in their practice of partnering in order of importance as: lack of commitment from the other party; alignment of cultural differences; loss of competitiveness; and coordination.

Respondents who had not practiced partnering were also requested to mark a list of reasons for not using partnering. The most widespread reasons given were: the company does not know how to use partnering (chosen by 34% of respondents); the company is not convinced of the advantages and benefits of partnering (19%); clients are not supportive (13%); partnering is prohibitive or restrictive (13%); there is a general lack of interest in partnering (13% of respondents); and partnering is too costly in time (8%).

Those who had not practiced partnering were asked if they would implement partnering on their future projects if given the choice. Only 33% gave a positive answer; 83% of these firms were G8 contractors.

Only 56% of the contractors agreed that Chinese culture influenced or will influence their decision to adopt partnering as a procurement approach; 60% were G8 contractors. The most important Chinese cultural values affecting their decision are: trust and friendship; and mutuality and respect (see Table 4). These were followed by: maintaining harmony; and collective responsibility. The scores are generally low, and in four cases the mean ratings are equal to zero at a 95% confidence level.

Table 4 'Indicate the extent to which you agree that the following characteristics of Chinese culture influenced or will influence your decision to adopt partnering as a way of construction procurement' ^a

Cultural value	Mean	Standard deviation	t-statistic	p-value
Face	0.04	0.94	0.205	0.839 ^b
<i>Guan xi</i>	0.44	1.15	2.000	0.056 ^b
Collective responsibility	0.48	1.01	2.467	0.021
Mutuality and respect	0.74	0.76	5.036	0.000
Trust and friendship	0.93	1.04	4.649	0.000
Maintaining harmony	0.48	0.94	2.675	0.013
Magnanimity	0.00	1.00	0.000	1.000 ^b
Diligence	0.44	0.80	2.884	0.008
Kindness	0.11	0.70	0.827	0.416 ^b
Solidarity	0.37	0.84	2.294	0.030

^an = 27; df = 26.

^bDo not reject null hypothesis at 95% confidence level.

Although only slightly more than half of the respondents agree on Chinese culture influencing partnering, and despite the low scores in Table 4, 70% of the respondents felt that they would prefer to partner with a fellow Chinese. There was no significant difference among G7 and G8 contractors. This indicates their understanding that Chinese culture can facilitate partnering.

The reasons given by the respondents for the low level of partnering usage in Singapore's construction industry (in order of importance) were: general lack of knowledge of partnering in Singapore's construction industry; lack of trust in the industry; adversarial nature of the industry; general lack of interest in partnering in the industry; and lack of a championing body to promote partnering.

The respondents supported the following measures to improve the level of usage of partnering in Singapore's construction industry (in order of importance): the BCA should take a leading step to be the championing body for promoting partnering; seminars and talks should be conducted to raise awareness of partnering in the construction industry; the Singapore Contractors' Association Ltd. (SCAL) and the Real Estate Developers Association of Singapore (REDAS) should promote the partnering concept to their members; the public sector should adopt partnering as one of its procurement methods; and all clients should use partnering to procure their construction projects.

The next section is devoted to a synthesis of the review of the literature, and a discussion of the findings of the study.

Discussion

The term 'culture' is now used to describe the fabric of society. Culture is seen as playing an important role in the conduct of business.

Partnering offers many benefits for the Singapore construction industry, and its implementation can be facilitated by Chinese cultural values that support the harmonious conduct of business. Partnering is not widely applied in Singapore's construction industry. However, dominance of Chinese in the industry and their subscription to Chinese cultural values means that the implementation of partnering in Singapore's construction industry would be eased.

Potential influence of Chinese culture on partnering

The traditional Chinese way of doing business, acting in good faith and one's word being one's bond, is similar to the principles of partnering. Liu and Fellows (2001) offer an Eastern perspective on partnering. They discuss Eastern (Chinese) culture from both an Eastern and a Western perspective, offer a behavioural model of partnering, and suggest that understanding of the Eastern, Confucian, concept of self and self-cultivation, and the central role of goal setting at strategic and project levels will enhance goal attainment in partnering.

This section considers how Chinese culture affects the implementation of partnering in Singapore's construction industry, by matching the essential elements of partnering with relevant Chinese cultural values.

Trust is built on personal relationships and understanding of the parties' needs. In Chinese culture, personal relationships form the basis of social order and correct behaviour (Butterfield, 1983; Pennet and Zhao, 1992). Trustworthiness or *xinyong* is also a predominant feature of Chinese-Chinese business transactions.

A shared culture can be useful for partnering implementation. Thus, because of their similar cultural background, partnering between Chinese contractors and clients will be easier.

The commitment of top management is crucial to the successful implementation of partnering. The Chinese management style is characterized by centralized decision-making by the boss. Therefore, commitment is ensured as employees follow the wishes of the boss.

The stakeholders' interests are considered on a mutual basis in partnering. Mutuality and respect are part of the Confucian teaching of humanism. Thus, Chinese culture will complement this partnering characteristic.

Partnering attempts to establish a good working relationship between partners through mutually developing a formal strategy of commitment and communication.

Chinese traditions also emphasize maintaining harmony among people. Partnering is a long term commitment between two or more organizations for the purpose of achieving business objectives (CII, 1991). For partnering to happen, it requires extensive networking within the industry. Networking or *guan xi* is one of the most prevalent Chinese cultural values. Thus, Chinese culture can help promote the proper alignment of partnering relationships.

The field study

The results of the field study show that the contractors understand Chinese culture as comprising certain prominent values. These include values such as face, *guan xi*, mutuality and respect, and trust and friendship, which also are instrumental in influencing partnering success. Moreover, most respondents identified Chinese culture as a major influence in their running of the business, and their relationships with others. They acknowledged the following Chinese cultural values as important characteristics in their businesses: *guan xi*, mutuality and respect, trust and friendship, and maintaining harmony.

A summary of how each Chinese cultural value was ranked in four of the key survey questions (using the means) is given in Table 5, which shows that 'trust and friendship', and 'mutuality and respect' have a high ranking consistently throughout the four questions, which makes them important Chinese cultural values that affect partnering implementation.

Table 5 Summary of rankings of Chinese cultural values

Chinese cultural values	Rankings			
	Importance (Table 1)	Effect on running of business (Table 2)	Effect on business relationships with others (Table 3)	Influence on decision to adopt Partnering (Table 4)
Face	1	5	5	9
<i>Guan xi</i>	3	3	3	5
Collective responsibility	7	7	7	3
Mutuality and respect	4	2	2	2
Trust and friendship	2	1	1	1
Maintaining harmony	5	5	6	3
Magnanimity	8	8	9	10
Diligence	6	4	4	5
Kindness	10	10	10	8
Solidarity	9	9	8	7

The majority of respondents agreed that Chinese culture influences, or can influence, the adoption of partnering as a construction procurement method. Those who disagreed felt that it was beyond the means of contractors to adopt partnering because clients have the final say. Moreover, the traditional tendering approach adopted in construction procurement in Singapore makes it a major obstacle to partnering implementation which Chinese culture will not be able to clear unilaterally.

Most of the respondents would prefer to partner with another fellow Chinese due to cultural similarities. Given the predominance of Chinese in the industry, this is encouraging.

Conclusion

The procurement arrangement determines the roles and responsibilities of the participants on a construction project, and the relationships among them. The choice of such an arrangement should recognize cultural factors. The hypotheses were confirmed by the results of the study, which showed that:

- the Singapore Chinese contractors' way of conducting business is influenced by Chinese culture,
- Chinese culture can help to promote partnering in the Singapore construction industry, and
- partnering is easier between Chinese contractors and clients because of their similar culture.

Chinese culture can help to enhance partnering implementation. However, much needs to be done to realize this. More research is required on the business culture of Chinese Singaporeans and, in particular, on the construction industry. There is scope for the trade associations in construction such as the Singapore Contractors' Association Ltd. (SCAL) and the Real Estate Developers Association of Singapore (REDAS), and the Chinese organizations, such as clan associations, to collaborate to support and participate in this effort. They should also educate the industry on how Chinese culture can be used to improve project performance.

The choice of an appropriate procurement arrangement is a major determinant of project performance. Thus, programmes for developing the Singapore construction industry should have a cultural element. The use of Chinese culture to enhance partnering would contribute significantly to efforts to solve the problems facing the industry.

Partnering is still in its infancy in Singapore, despite its benefits. The intrinsic values of Chinese culture facilitate partnering implementation because of their

emphasis on *guan xi*, mutuality and respect, trust and friendship, and maintaining harmony, which are success factors in partnering implementation. The Singapore Chinese contractors need to discard their mutual distrust and embrace their Chinese roots to implement partnering. Chinese contractors should use their cultural heritage to enhance their positions in the tough and demanding construction market by applying partnering. This heritage also makes them well placed to apply partnering to enhance their competitiveness in the regional market.

References

- Akintoye and Black (1999) Operational risks associated with partnering for construction. In Ogunlana, S. O. (ed.), *Profitable Partnering in Construction Procurement*. E.&F.N. Spon, London, pp. 25–38.
- Allen, S., Matthews, J., Rowlinson, S. and McDermott, P. (1999) A review of partnering drawing upon experiences from the United Kingdom, Hong Kong and South Africa. In Bowen, P. A. and Hindle, R.D. (eds), *Customer Satisfaction: A Focus for Research and Practice in Construction*, Proceedings of a CIB Joint Triennial Symposium, Cape Town, Vol. 3, pp. 1229–39.
- Ang, T.P. (1998) *Growth strategies for Chinese family small and medium enterprises*. Unpublished undergraduate academic exercise, Faculty of Business Administration, National University of Singapore.
- Applebaum, H.A. (1981) Royal blue: the culture of construction workers. In Spindler, G. and Spindler, L. (eds), *Case Studies in Cultural Anthropology*, Holt, Rinehart and Winston, New York.
- Barthorpe, S., Duncan, R. and Miller, C. (1999) A literature review on studies in culture: a pluralistic concept. In Ogunlana, S.O. (ed.), *Profitable Partnering in Construction Procurement*, E.&F.N. Spon, London, pp. 533–42.
- Barton, C.A. (1983) Trust and credit: some observations regarding business strategies of overseas Chinese traders in Southeast Asia. In Lim, L.Y.C. and Gosling, L.A.P. (eds), *The Chinese in South East Asia*, Vol. 1, Maruzen Asia, Singapore, pp. 46–64.
- Bodley, J.H. (1994) *Cultural Anthropology: Tribes, States, and the Global System*, Mayfield.
- Bresnen, M. and Marshall, N. (1999) Achieving customer satisfaction? Client–contractor collaboration in the UK construction industry. In Bowen, P.A. and Hindle, R.D. *Customer Satisfaction: A Focus for Research and Practice in Construction*, Proceedings of a CIB Joint Triennial Symposium, Cape Town, Vol. 1, pp. 177–85.
- BCA (1999) *BCA Directory of Registered Contractors 1998/1999*, Building and Construction Authority, Singapore.
- Butterfield, F. (1983) *China: Alive in the Bitter Sea*. Bantam, New York.
- Census of Population Office (1992) *Singapore Census of Population 1990*. Department of Statistics, Singapore.

- Chan, L.W.J. (1995) Chinese entrepreneurship: a study on the second generation Chinese in Singapore. Unpublished undergraduate academic exercise, Faculty of Business Administration, National University of Singapore.
- Chan, K.B. (2000) *Chinese Business Networks: State, Economy and Culture*. Prentice-Hall, Singapore.
- Chao, Y.T. (1994) Culture and work organization: the Chinese case. In Kao, H.S.R., et al. (eds), *Effective Organizations and Social Values*, Sage, New Delhi, pp. 28–36.
- Cheng, Z. (1998) The C theory: a Chinese philosophical approach to management and decision-making. In *Proceedings of the International Symposium on Chinese Culture and Industrial Management*, Hangzhou, China, 2–4 April, World Scientific, Singapore, pp. 49–59.
- Cheu, H.T. (2000) *Buddhism in Chinese Culture*, Pelanduk, Kuala Lumpur.
- Chu, C.N. (1991) *The Asian Mind Game: Unlocking the Hidden Agenda of the Asian Business Culture – A Westerner's Survival Manual*, Rawson Associates, New York.
- CPT (1992) *Construction Productivity Taskforce Report*, Construction Productivity Taskforce, Construction Industry Development Board, Singapore.
- CII (1991) *In Search of Partnering Excellence*, Special Publication 17–1, Construction Industry Institute, Austin, TX.
- CIIA (1995) Working together: the competitive strategy. In *Proceedings of the CII Annual Conference 95*, Melbourne, Construction Industry Institute, Australia
- Cowan, C., Gray, C. and Larson, E. (1992) Project partnering. *Project Management Journal*, December, 5–21.
- Crowley, L.G. and Karim, M.A. (1995) Conceptual model of partnering. *Journal of Management in Engineering*, 11(5), 33–9.
- EPC (1991) *The Strategic Economic Plan: Towards a Developed Nation*, Economic Planning Committee, Ministry of Trade and Industries, Singapore.
- Egan, J. (1998) Rethinking construction, Department of the Environment, Transport and the Regions, <http://www.construction.detr.gov.uk>
- Fellows, R. (1997) The culture of partnering. In Davidson, C. H. and Meguid, T.A.A. (eds), *Procurement: A Key to Innovation*, I.F. Research Corporation, Montreal, pp. 193–202.
- Godfrey Jr., K.A. (1996) *Partnering in Design and Construction*, McGraw-Hill, New York.
- Green, S.D. (1999) Partnering: the propaganda of corporatism. In Ogunlana, S.O. (ed.), *Profitable Partnering in Construction Procurement*, E.&F.N. Spon, London, pp. 3–14.
- Greenhalgh, S. (1984) Networks and their node: urban society in Taiwan. *The China Quarterly*, 99, 529–52.
- Haley, G.T., Tan, C.T. and Haley, U.C.V. (1998) *New Asian Emperors: The Overseas Chinese, Their Strategies and Competitive Advantages*, Butterworth-Heinemann, Oxford.
- Hall, M.A. and Jaggard, D. M. (1997) Accommodating cultural differences in international construction procurement arrangements. In Davidson, C. H. and Meguid, T.A.A. *Procurement: A Key to Innovation*, I.F. Research Corporation, Montreal, pp. 243–50.
- Hall, W. (1995) *Managing Cultures: Making Strategic Relationships Work*, Wiley, Chichester.
- Hamza, A., Djebarni, R. and Hibberd, P. (1999) The propaganda of corporatism. In Ogunlana, S.O. (ed.), *Profitable Partnering in Construction Procurement*, E.&F.N. Spon, London, pp. 39–46.
- Hancher, D.E. (1989) *Partnering: Meeting the Challenges of the Future*, Interim Report of the Task Force on Partnering, Construction Industry Institute, Austin, TX.
- Handy, C.B. (1985) *Understanding Organizations*, 3rd Edn, Penguin, Harmondsworth.
- Harback, H.F., Basham, D.L. and Buhts, E.R. (1994) Partnering paradigm. *Journal of Management in Engineering*, January/February, 23–7.
- Hellard, R.B. (1995) *Project Partnering: Principles and Practice*, Thomas Telford, London.
- Hildebrandt, S., Kristensen, K., Kanji, G. and Dahlgard, J.J. (1991) Quality culture and TQM. *Total Quality Management*, December, 1–15.
- Hillebrandt, P.M. (2000) *Economic Theory and the Construction Industry*, 3rd Edn, Macmillan, London.
- Ho, D.Y.F. (1976) On the concept of face. *The American Journal of Sociology*, 81(4), 867–884.
- Hsu, L.K.F. (1955) *Americans and Chinese*, Crescent, London.
- Jacobs, J.B. (1979) A preliminary model of particularistic ties in Chinese political alliances: Kan-Ch'ing and Kuan-hsi in a rural Taiwanese Township. *The China Quarterly*, 78, 237–73.
- Jacobs, J.B. (1980) *Local Politics in a Rural Chinese Setting: A Field Study of Mazu Township, Taiwan*, Contemporary China Center, Canberra.
- Johnson, G. and Scholes, K. (1993) *Exploring Corporate Strategy*, Prentice-Hall, Englewood Cliffs, NJ.
- Jordon, D.K. (1985) Sworn brothers: a study of Chinese ritual kinship. In Hsieh, J.C. and Chuang, Y.C. (eds), *The Chinese Family and Its Ritual Behavior*, Academica Sinica, Institute of Ethnology, Taipei, pp. 232–62.
- Kroeber, A.L. and Kluckhohn, C. (1952) *Culture: A Critical Review of Concepts and Definitions*, Harvard University, Boston, MA.
- Ku, T.H. (1998) Understanding the Chinese business culture: a critical success factor for Singapore contractors and developers venturing into China. Unpublished undergraduate dissertation, National University of Singapore.
- Kubal, M.T. (1994) *Engineered Quality in Construction: Partnering and TQM*, McGraw-Hill, New York.
- Langford, D. (2000) The influence of culture on internationalisation of construction. In Ngowi, A.B. and Ssegawa, J. (eds), *Challenges Facing the Construction Industry in Developing Countries*, Proceedings of the Second International Conference of CIB TG29, 15–17 November, Gaborone, Botswana, pp. 12–21.
- Latham, M. (1994) *Constructing the Team*, HMSO, London.
- Lau, H.L. (1999) Trust as a human factor in management in general and in construction. In Ogunlana, S.O. (ed.), *Profitable Partnering in Construction Procurement*, E.&F.N. Spon, London, pp. 117–26.
- Lee, J. (1996) Culture and management—a study of small Chinese family business in Singapore. *Journal of Small Business Management*, 34(3), 63–67.

- Lenard, D. (1999) Future challenges in construction management: Creating cultural change through education. In Ogunlana, S.O. (ed.), *Profitable Partnering in Construction Procurement*, E.&F.N. Spon, London, pp. 555–64.
- Li, H., Cheng, E.W.L. and Love, P.E.D. (2000) Partnering research in construction. *Engineering, Construction and Architectural Management*, 7(1), 76–92.
- Li, H., Michael, G., Han, P. and Luo, S. (1992) Chinese tradition and Western decision-making theory: five perspectives. In William, C.W. (ed.), *Advances in Chinese Industrial Studies*, Vol. 3, JAI Press, London, pp. 95–106.
- Lim, L.Y. (1997) *The Theory and Practice of Mediation*. FT Law & Tax, Singapore.
- Lim, L.Y. and Low, S.P. (1992) *Just-in-Time Productivity for Construction*. SNP Publishers, Singapore.
- Limlingan, V.S. (1986) *The Overseas Chinese in ASEAN*, Vital Development Corporation, Manila.
- Liu, A.M.M. and Fellows, R. (1996) Towards an appreciation of cultural factors in the procurement of construction projects. In Taylor, R. (ed.), *North Meets South*, Proceedings of the CIB W92 Procurement Systems Symposium, University of Natal, Durban, pp. 301–10.
- Liu, A.M.M. and Fellows, R.F. (1999) The impact of culture on project goals. In Ogunlana, S.O. (ed.), *Profitable Partnering in Construction Procurement*, E.&F.N. Spon, London, pp. 523–32.
- Liu, A.M.M. and Fellows, R.F. (2001) An Eastern perspective on partnering. *Engineering, Construction and Architectural Management*, 8(1), 9–19.
- Lockett, M. (1993) Culture and the problems of Chinese management. In Weinshall, T.D. (ed.), *Societal Culture and Management*, De Gruyter, Berlin.
- Low, S.P. (1998) Cultural influence on construction marketing and management in China. In *Proceedings of The First Leeds International Construction Marketing Conference: Research into Practice*, 26–27 August, Leeds, pp. 1–12.
- Mackie, J. (1998) Business success among South-East Asian Chinese: the role of culture, values and social structures. In Hefner, R.W. (ed.), *Market Cultures: Society and Morality in the New Asian Capitalisms*, Westview, Boulder, CO.
- Mair, V.H. (2000) The impact of Buddhism on Chinese civilisation. In Cheu, H.T. (ed.), *Buddhism in Chinese Culture*, Pelanduk, Kuala Lumpur, pp. 1–18.
- Matthews, J. (1999) Applying partnering in the supply chain. In Rowlinson, S. and McDermott, P. (eds), *Procurement Systems: A Guide to Best Practice in Construction*, E.&F.N. Spon, London, pp. 252–75.
- McClave, J.T. and Benson, G. (1994) *Statistics for Business and Economics*, Dellen (Macmillan), New York.
- Menkhoff, T. (1993) *Trade Routes, Trusts and Trading Networks: Chinese Small Enterprises in Singapore*, Breitenbach, Fort Lauderdale, FL.
- Menkhoff, T. (1998) Trust and Chinese economic behavior in Singapore. In Hing, A.Y., Chang, C.T. and Lansbury, R. (eds), *Work Organization and Industry: The Asian Experience*, Armour, Singapore, pp. 122–51.
- Morgan, G. (1986) *Images of Organizations*, Sage, Beverly Hills, CA.
- Newcombe, R. (1997) Procurement paths: a cultural/political perspective. In Davidson, C.H. and Meguid, T.A.A. (eds), *Procurement: A Key to Innovation*, I. F. Research Corporation, Montreal, pp. 523–34.
- Ng, K.K. (1997) Partnering as a remedy for the adversarial nature of the construction industry in Singapore. Unpublished dissertation, National University of Singapore.
- Ofori, G. (1995) Singapore construction industry in the 21st Century. In *Proceedings of the First International Congress on Construction: Design and Build Projects—International Experiences*, 5–6 October 1995, Singapore, pp. 247–57.
- Ofori, G. and Debrah, Y. (1998) Flexible management of workers: review of employment practices in the construction industry in Singapore. *Construction Management and Economics*, 16, 397–408.
- Pan, Y. and Hu, J. (1998) *Proceedings of the International Symposium on Chinese Culture and Industrial Management*, Hangzhou, China, 2–4 April, World Scientific, Singapore.
- Pang, E.F. (1994) Chinese business enterprise in Singapore and Southeast Asia: adjusting to new challenges at home and abroad. In Sutlive, V.H. and Hamada, T. (eds), *Culture, Politics, and Economic Growth: Experiences in East Asia*, Studies in Third World Societies, Publication No. 52, Department of Anthropology, College of William and Mary, Williamsburg, VA.
- Pennett, B.J. and Zhao Y. (1992) Confucianism, needs and organizational preferences: an examination of management trainees in China. In Williams, C. W. (ed.), *Advances in Chinese Industrial Studies*, Vol. 3, JAI Press, London, pp. 77–93.
- Putti, J.M. and Chia, A. (1990) *Culture and Management: A Casebook*, McGraw-Hill, Singapore.
- Quinn, R.E. (1988) *Beyond Rational Management: Mastering the Paradoxes and Competing Demands of High Performance*, Jossey-Bass, San Francisco.
- Reading Construction Forum (1998) *The Seven Pillars of Partnering: A Guide to Second Generation Partnering*, Centre for Strategic Studies in Construction, Reading.
- Redding, S.G. (1980) Cognition as an aspect of culture and its relation to management process: an exploratory view of the Chinese case. *Journal of Management Studies*, 17(2), 127–48.
- Redding, S.G. (1990) *The Spirit of Chinese Capitalism*, De Gruyter, New York.
- Rowlinson, S.M. and Root, D. (1997) *The Impact of Culture on Project Management*, Final Report: Hong Kong/UK Joint Research Scheme, Department of Real Estate and Construction, University of Hong Kong.
- Rwelamila, P.D., Talukhaba, A. A. and Ngowi, A.B. (1999) Tracing the African project failure syndrome: the significance of ‘ubuntu’. *Engineering, Construction and Architectural Management*, 6(4), 335–46.
- Rwelamila, P.D., Talukhaba, A.A. and Kivaa, T.P. (2000) African intelligentsia: why have we embraced ‘hyper bare-foot empiricism’ in procurement practices? In Ngowi, A. B. and Ssegawa, J. (eds), *Challenges Facing the Construction Industry in Developing Countries*, Proceedings of the Second International Conference of CIB TG29, 15–17 November, Gaborone, Botswana, pp. 457–66.

- Sako, M. (1992) *Prices, Quality and Trust: Inter-firm Relationships in Britain and Japan*, Cambridge University Press.
- Saner-Yui, L. and Saner-Yui, R. (1984) Confucius say social harmony more important than performance. *Training and Development Journal*, **38**(10), 28–9.
- Sheh, S.W. (1995) *Chinese Management*, MPH Distributions, Kuala Lumpur.
- Siling, R.H. (1976) *Leadership and Values*, Harvard University Press, Cambridge, MA.
- Tam, S. (1989) Centrifugal versus centripetal growth process: contrasting ideal types for conceptualizing the developmental patterns of Chinese and Japanese firms. In Clegg, S.R. and Redding, S.G. (eds), *Capitalism in Contrasting Cultures*, De Gruyter, Berlin, pp. 153–83.
- Tan, C.H. (1990) Management concepts and Chinese culture. In Campbell, N. (ed.), *Advances in Chinese Industrial Studies*, Vol. 1, JAI Press, London, pp. 277–88.
- Tan, C.K. (1999) Partnering facilitator: a profession for building graduates. Unpublished dissertation, National University of Singapore.
- Teng, B.K. (1998) Project partnering in Singapore's public construction projects. Unpublished dissertation, National University of Singapore.
- Tu, W.M. (1984) *Confucian Ethics Today: The Singapore Challenge*, Federal Publications, Singapore.
- Uher, T.E. (1994) Partnering: who benefits? *Australian Project Manager*, October, 21–43.
- Vimi, R. (1994) A cultural approach—the concept of face and how it affects performance appraisal. Unpublished undergraduate academic exercise, National University of Singapore.
- Weidenbaum, M. (1996) The Chinese family business enterprise. *California Management Review*, **38**(4), 141–155.
- Westwood, R.I. and Kirkbride, P.S. (1990) *The Culturally Disjunctive Representation of a Corporate Culture*, Working Paper No. 90–01, Faculty of Business Administration, The Chinese University of Hong Kong.
- Wolfgang, J. (1994) *Chinese Traders in Singapore: Business Practices and Organizational Dynamics*, Breitenbach, Saarbrücken.