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Theoretical framework of strategic behaviors in Thai contractors

An empirical case study

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Abstract

Purpose – The purpose of this paper is to analyze the differences of the influence of implication of perceptions of business environment on Thai contractors' strategic behaviors and strategic performances.

Design/methodology/approach – Using a case study methodology, the paper extensively documents nine case studies interviewing the CEOs or senior executives, functional managers, senior project managers, and some of their clients regarding research questions developed from strategy theories with evidence that has appeared in various strategy researches in construction.

Finding – A generic theoretical framework of contractor's strategic alignment has been developed to address different strategic alignments illustrating an interaction between implication of perceptions of business environment, strategic behaviors, and strategic performances.

Practical implications – This generic framework can systematically help Thai contractors in improving strategic behaviors and yield better strategic performance. The findings can also be applied to contractors in other developing countries.

Originality/value – This paper is a strategic management study in construction that holistically emphasizes the customer and the firm as the key instead of solely emphasizing the project. The study in this area is slowly gaining recognition in the construction industry.

Keywords Strategic alignment, Business environment, Thailand, Construction industry

Paper type Case study

1. Introduction

In other industries, strategic behavior has become a central theme in strategic management literature (Milosevic and Srivannaboon, 2006). Unfortunately in construction, it has shown indications of slow adaptability to change (Cheah and Yee, 2006). Evidently, the study of more than 500 US construction firms showed that the industry is struggling with the need to move from a project-based behavior that emphasizes the success of projects as the key to long-term success toward a behavior that emphasizes the customer and the firm as the key (Chinowsky, 2001). This struggle caused over 10,000 failures a year in the US construction industry. In confirmation, these failures are generally caused by the internal and external strategic factors (Alaghbari *et al.*, 2007; Wang *et al.*, 2004; Arditi *et al.*, 2000) and their implication of business perceptions which affected their strategic behaviors and strategic performances must be improved (Dincer *et al.*, 2006; Dansoh, 2005; Arditi and Kale, 2002; Arditi and Gunhan, 2005; Cheah and Garvin, 2004; Price, 2003; Price and Newson, 2003; Seadan *et al.*, 2003; Cano and Cruz, 2002; Chinowsky and Meredith, 2000;

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Chinowsky and Byrd, 2001; Huemer and Ostergren, 2000; Kuprenas *et al.*, 2000; Ngowi and Rwelamila, 1999; Venegas and Alarcon, 1997; Warszawski, 1996; Paek and Kim, 1993; Prince, 1992; Betts *et al.*, 1991; Betts and Ofori, 1992; Winch, 1989).

Evidently, slow recognition of strategy study, the need to emphasize the customer and the firm as the key, and the improvement of business perceptions are considered the industry's gaps. To fill the gaps, we documented nine case studies. As a result, a generic theoretical framework has been developed to address the different strategic alignments between the implication of perceptions of business environment, strategic behaviors, and strategic performances. The framework will help in improving strategic behaviors and thus yield better performances from Thai contractors.

2. Theoretical background

To develop a framework specifying the pattern of contractor's strategic alignment, we examined literature both generally and specifically in construction that include the following; the implication of perceptions of business environment, strategic behaviors, and strategic performances.

2.1 Implication of perceptions of business environment

People do have reasons for how they behave, but these reasons depend on how people frame the situations, and on the information they have (Simon, 1947, 1997b). To predict their behaviors in specific instances, we must know what they are attending to and what information they have. Similarly, contractors do behave the same. Strategic behaviors are results of implied perceptions. There are two cognitive styles of perception implication. Extroverts pay attention to the external environment and introverts focus more in the internal environment. In reality, there is no an absolute extrovert or an absolute introvert, but a firm may behave both in its rational thinking processes (Prince, 1992). These cognitive styles will be used as one of strategic components in the theoretical framework of this study.

The next question is – what implied attributes constitute the environments? All significant attributes must be clearly specified. The external environment consists of both objective and subjective attributes such as economic, social, and so on (e.g. Daft, 2006; Hill and Jones, 2004; Hunger and Wheelen, 2001; Johnson and Scholes, 1997; Warszawski, 1996; Porter, 1980). The internal environment consists of advantageous attributes (Beatham *et al.*, 2004; Kaplan and Norton, 1996) in specified dimensions that express abilities to compete on cost, time, quality, and innovation of products/services (Arditi and Kale, 2002).

2.2 Strategic behaviors

2.2.1 Organizational level. In response to the implied perceptions, the firm could select to grow, to stabilize, or to retrench (Daft, 2006) in many alternative ways; for example, to integrate horizontally or vertically (Cheah and Yee, 2006; Hill and Jones, 2004).

2.2.2 Business level. The firm can sustainably support in the competitive market by selecting its strategic position(s). Milosevic and Srivannaboon (2006) stated that there are multiple business strategy typologies (e.g. Treacy and Wiersema, 1995; Porter, 1980, 1985; Miles *et al.*, 1978) but the most influential one is Porter's typology. It can be attributed specifically in construction as mode and scope of competition (Arditi and Kale, 2002):

- *Mode of competition*. Mode of competition consists of cost leadership, and differentiation strategy. Approaches may be different based on the different industry setting (Hill, 1988; Murray, 1988; Kim and Lim, 1988). Arditi and Kale (2002) pointed out that the most important mode of competition are: competing in quality; competing in innovation; competing in cost; and competing in time.
- *Scope of competition*. Arditi and Kale (2002) stated that construction firms could select a focused or board scope of competition in addressing geographical location and so on.

2.2.3 Functional level. Functional strategies are adopted to vertically align and support the execution of business strategy. In the same time, they horizontally align and support other functional strategies (Daft, 2006; Milosevic and Srivannaboon, 2006; Cheah and Garvin, 2004; Porter, 1985):

- *Financial strategy*. Financial strategy consists of how to make investment decisions and how to make financing decisions (Nguyen *et al.*, 2004). Kangari *et al.* (1992) stated that inadequate knowledge of financial management is the main reason behind the high level of business failure in construction. The investment and financing decision could impact the corporate strategy as a whole (Grinblatt and Titman, 1998).
- *Technology strategy*. Tatum (1988) stated that technology strategy for construction is wide. Three strategic choices for technology development are as follows: pioneer versus follower; outsourcing versus internalizing; technical/basic research versus advanced/application research.

Nguyen *et al.* (2004) stated that having appropriate technology is one of the significant actions to leverage the firm's competency:

- *Marketing strategy*. Technology and IT have redefined the boundary of marketing strategy in construction (Cheah and Garvin, 2004; Cicmil and Nicholson, 1998). Customer-centric propositions have been a topic of major debates on culture change in construction (Cicmil and Nicholson, 1998; Seymour and Rooke, 1995). However, the industry's culture is dominated by the engineer's paradigm (Seymour and Rooke, 1995) which pays a little attention to marketing strategy (Ohmae, 1982). Regarding this phenomenon, Egan (1995) stated that there are two types of strategic marketing in construction: selling and marketing orientation.
- *Information technology strategy*. IT can be considered as the "driver" to impact corporate strategy (Cheah and Garvin, 2004). It is very important to equally share information among a project's contractually bounded parties in order to reduce the transactional cost (Nguyen *et al.*, 2004; Lansley, 1994; Winch, 1989). It should be connected to the firm's strategies especially operational strategy (Ross and Rockart, 1999).
- *Human resources strategy*. Cheah and Garvin (2004) stated that human resources encountering with "soft" issues. It should not be confused with operational aspects such as manpower deployment among different work sites or resource allocation for different tasks of a project. Instead, it is more concerned about how to manage the human assets of a firm; for example, recruiting, training,

motivating, and so on (Levy, 2000; Tulacz, 2000; Egan, 1998; Hecker, 1996; Jahn, 1996; Schuster and Zingheim, 1992). The importance of this soft issue has been emphasized trends in the construction industry (Price *et al.*, 2004; Nesan and Gary, 1999; Olomolaiye *et al.*, 1998).

- *Procurement strategy*. Olsson (2000) noted that a conventional construction is too expensive to meet particular client demands. Accordingly, procurement needs to be lean to leverage efficiency at cost reduction without sacrificing a quality via business alliances and strategic collaborative partnerships (Lamming and Cox, 1995). The primary consideration is understood as the need to obtain overall value for money and resources that meets the customer's requirement (London and Kenley, 2001; GCCP, 2000).
- *Operational or project strategy*. This strategy is concerned with how firm strategically manage their temporary operation process (Winch, 1989). These processes generate wealth for a firm. They are analogous to most project management functions (Milosevic and Srivannaboon, 2006; PMI, 2000). However, these activities can be varied in the level of control and integration (Olomolaiye *et al.*, 2002), centralization and formalization (Lansley, 1994). Most researches in construction traditionally concentrate primarily on project level management issues (Chinowsky, 2001; Cicmil and Nicholson, 1998; Winch, 1989). The success of the firm can be measured through the result of construction project execution (Beatham *et al.*, 2004; Chan and Chan, 2004). Significantly, the construction firm must emphasize in learning from its past behaviors being conducted through the firm's executed projects which yield a direct benefit in improving their future performances (Nguyen *et al.*, 2004; Kululanga *et al.*, 2002). It can then behave as the customer focused, project based, process oriented, performance improved and value generated (Chan *et al.*, 1999; Winch, 1989).

2.3 Strategic performances

The execution of projects being shaped by the firm's strategic alignments is the construction firm's vehicle to generate firm's profitability (Milosevic and Srivannaboon, 2006; Beatham *et al.*, 2004; Chan and Chan, 2004, Prince, 1992). Performances can be measured individually as a single project (Chan and Chan, 2004) or collectively as a firm (Beatham *et al.*, 2004) both subjectively and objectively (Nguyen *et al.*, 2004; Pinto and Pinto, 1991; Navarre and Schaan, 1990) in which reflect strategic results aligned with organizational objectives. Many articles have proposed the time-dependent project performance measurement (Atkinson, 1999; Shenhar *et al.*, 1997); for example, four time-dependent dimensions; during project execution and right after project completion, shortly after the project has been delivered to the client, one to two years after project completion, and three to five years after project completion. A three-year period is the most commonly used time period for exploring the strategic performances resulting from the past strategic behaviors of the firms (Arditi and Kale, 2002).

2.4 A theoretical framework: characteristics and terms

The following describes the common characteristics of a framework in general and the key terms used in our study.

2.4.1 Common characteristics of a theoretical framework. To develop a framework, the characteristics of frameworks should include at least the following:

- the variables or units of analysis;
- the laws of interaction among units of the framework;
- the boundaries within which the framework is expected to hold; and
- the propositions of the framework (Dubin, 1978).

These characteristics will be revisited and matched with those of the proposed framework, which follows.

2.4.2 Terms used in our study. To clarify key terms and maintain consistency with other studies, the following are defined as follows:

(1) *Theoretical framework*: A set of well-developed concepts related to each other through statements of interrelationships, including an integrated structure that can be used to describe or predict phenomena.

(2) *Strategic alignment*: The degree to which priorities of a firm's implication of perceptions of business environment are directly compatible with behavioral competitive attributes in each level of the firm's strategies which generate strategic behaviors and are indirectly compatible with strategic performance competitive attributes which generate strategic performances.

(3) *Implication of perceptions of business environment*: The styles of implication (extrovert or introvert and their attributes: optimistic, moderate, and pessimistic) by which a firm implies the perceptions of business environment as obstacles and disadvantages toward significant factors that affect the way the firm strategically behaves in order to be rewarded.

(4) *Strategic behaviors*: The strategic actions which are the results of the selection of the competitive attributes embedded in each level of a firm's strategies.

(5) *Strategic behavioral competitive attribute*: The source(s) of advantage embedded in each firm's strategic level: organizational (grow, stabilize, and retrench), business (mode and scope of competition), functional (e.g. competitive attributes of marketing strategy), and project (e.g. focused project strategy).

(6) *Strategic performances:* The actual objective and subjective results generated by the strategic behaviors caused by the selected strategic behavioral competitive attributes.

(7) *Strategic performance competitive attribute*: The possible consequence(s) generated by the firm's strategic behaviors which express the objectively collective firm's performances (e.g. sales revenue), and subjectively collective performances (e.g. a satisfaction of clients with finished projects) in running a contractor business.

2.5 Methodology

We divided the research into three phases. In phase 1, a literature review was conducted to obtain an understanding of the general research regarding the topic specified in sections 2.1-2.3. In parallel, we performed case study research over a period of 11 months by studying for the period of the past three years (2005-2007), what the

cases implied regarding their perceptions of business environment, how they behaved strategically, and the results generated. The cases were nine Thai contractors as shown in Table I. In total, 60 to 135 minute semi-structured interviews with strategic question shown in Table II were conducted with the CEOs or senior executives, function managers, senior project managers, and some of their clients in order to obtain information. We also visited some of the cases' construction sites and reviewed related documents to validate our findings. To select the cases, we defined multiple criteria and identified the cases most relevant to such criteria as a position (CEO/president/owner, senior executive, functional manager, project manager), years of experience in the construction industry (at least three years), years in running as a contractor (at least three years), etc. The distribution of people interviewed and time spent are shown in Table III.

In phase 2/data analysis, we recorded each interview via semi-structured questionnaires prepared regarding the initial research questions shown in Table II. We summarized case studies based on the interviews and related information. Different responses or opinions of the people interviewed to the strategic questions in Table II were theoretically categorized into attributes based on related strategy

Case	Years in business	Company size	Number of staff (approx.)	2007s sales revenue (million baht)
A	35	Medium	200	2,300
B	5	Small	30	420
C	30	Small	15	320
D	22	Large	1,200	8,000
E	20	Small	30	80
F	43	Medium	200	1,300
G	40	Small	20	150
H	45	Medium	200	2,000
I	40	Very large	2,000	17,000

Table I.
Characteristics of the cases

Question areas	Detail of questions asked
Implication of perceptions	During 2005-2007, how high specified external and market factors were as an obstacle to be rewarded a construction project to the case? During 2005-2007, how high specified internal factors were as a disadvantage to be rewarded a construction projects to the case?
Organizational behaviors	During 2005-2007, how did the cases horizontally and vertically grow?
Business behaviors	During 2005-2007, what was mode and scope of competition of the case?
Functional behaviors	During 2005-2007, how did the case do functionally behave in order to response to the case's mode and scope of competition?
Project behaviors	During 2005-2007, generally, how did the case's construction project strategically behave in order to respond to the case's functional strategy which was responsive to mode and scope of competition?
Strategic performances	What were strategic performances both objectively and subjectively in 2007 compared to the ones in 2004?

Table II.
Strategic questions asked through a collective 60-135 minute interview

Table III.
The distribution of people interviewed and time spent for each case

Question areas	Small size (case B, C, E, G)		Middle size (case A, F, H)		Large and very large size (case D, I)	
	People interviewed	Time spent (minutes)	People interviewed	Time spent (minutes)	People interviewed	Time spent (minutes)
Implication of perceptions Organizational behaviors Business behaviors Functional behaviors	CEO and/or senior executive[a]	60-90	CEO or senior executive Functional managers[b]	45-60	CEO or senior executive Functional managers and senior project manager[c]	30-45 60-90
Project behaviors Strategic performances Total collective time spent for each case	60-90		90-120		90-135	

Notes: [a]Cases B, C, E and G are small size contractors with 15-30 employees so a group of executives such as CEO and/or senior executive who dominate the entire operation can sufficiently provide strategic information needed through a collective 60-90 minute interview. [b]Cases A, F, and H are middle size contractors with approximately 200 employees. CEO or senior executive can generally provide strategic information in the area of implication of perceptions, organizational and business behaviors through 45-60 minute interview. Key functional managers such as construction, procurement, and HR manager then fulfill strategic functional information through a collective 45-60 minute interview. [c]Cases D and I are large and very large size contractors with 1,200 and 2,000 employees respectively. CEO or senior executive can provide strategic information in the area of implication of perceptions, organizational and business behaviors through 35-45 minute interview. Key functional managers such as construction, procurement, HR, and senior project manager then fulfill information needed through a collective 60-90 minute interview

theories which helped in furthering to perform within-case and cross-case analysis as shown in Table IV. In phase 3, a panel of committee validated the essential findings.

2.6 Results: the pattern of strategic alignment and their embedded attributes

We analyzed, based on real world data during the year 2005-2007, the pattern of the case's strategic alignment between the implication of perceptions of business environment, strategic behaviors, and strategic performances. The analyzed results are summarized in Table IV.

2.6.1 Implication of perceptions of business environment. As we have noted in results generated from the case study, there are generally two main styles of the implication of perceptions of business environment: extrovert and introvert. Each category can be further classified as: optimistic, moderate, or pessimistic. An optimistic firm tends to subjectively and objectively imply collectively more opportunities than obstacles and more advantage than disadvantage, a moderate firm implies in the middle, and a pessimistic firm always implies; objectively and subjectively everything negatively. The firms in the case study will select appropriate strategic behavioral competitive attributes, which are compatible with their implied perceptions.

2.6.2 Strategic behaviors. Based on their implied perceptions, the cases will behave regarding these following selected strategic behavioral competitive attributes:

- *Organizational strategic behavioral competitive attributes*. With regard to the implied perceptions, the cases may initially select organizational attributes for horizontal and vertical growth. The horizontal growth is designed to sustain the cases' business as a contractor which could be either: to grow; to stabilize; or to retrench. And the vertical growth is to expand upstream or downstream as: material supplier; designer; or a project/real estate developer.
- *Generic or business strategic behavioral competitive attributes*. The cases narrowly or broadly selected the mode and the scope of competition in response to the organizational ones. Mode of competition consists of: lower cost; faster construction time; better quality of specification; using advanced technology/innovation of construction services/products.

  The first mode represents a cost leadership strategy, which is widely used in bidding for a public project and the others represent differential strategies, which are widely used in bidding for a private project where factors other than price are considered.

  Scope of competition consists of: geographical attribute: domestic and overseas; segmental attribute: public and private sector; type-of-work attribute: building, infrastructure, system contractor and design/build.
- *Functional strategic behavioral competitive attributes*. In order to vertically support a firm's business strategy and horizontally support other functional strategies, the cases selected a set of the following strategic functional behavioral competitive attributes. Financial competitive attribute, which is how cash is raised to support the investment decision: the ratio in percentage between debt and equity. Procurement competitive attributes which are the following factors influential in procuring material suppliers and subcontractors in order to satisfy value for money: price; quality/quantity; long term relationship; and credit term. Technology competitive attributes which are: pioneer or follower; and

Table IV.
The pattern of strategic alignment and embedded attributes of the cases

Case	A	B	C	D	E	F	G	H	I
Implication of perceptions									
Extrovert	Pessimistic	Optimistic	Optimistic	Optimistic	Moderate	Moderate	Moderate	Moderate	Optimistic
Introvert	Optimistic	Optimistic	Optimistic	Optimistic	Pessimistic	Optimistic	Moderate	Optimistic	Optimistic
Strategic behaviors									
Organizational	Stabilize	Grow	Grow	Grow	Retrench	Stabilize	Grow	Grow	Grow
Horizontal	Project development	None	Project development	Designer	None	None	None	None	None
Vertical									
Business (Strategic Position)									
Mode of competition	Cost leadership	Differentiate	Cost leadership	Differentiate	Cost leadership	Cost leadership	Cost leadership	Cost leadership	Differentiate
Scope of competition									
Geographic	Domestic	Domestic	Domestic	Domestic, Overseas	Domestic	Domestic	Domestic	Domestic	Domestic
Type of customers	Public	Private and public	Public	Private and public	Public	Public	Public	Public	Public and private
Type of works	Building	Building	Infrastructure and building	Building and infrastructure	Infrastructure and building	Building	Infrastructure and building	Building and infrastructure	Infrastructure and building
Functional									
Financial (debt: equity)[a]	60:40	65:35	60:40	65:35	40:60	70:30	80:20	80:20	60:40
Procurement	Relation	Price	Relation	Quality	Price	Price	Quality	Price	Quality
Technology[b]	Follower: outsource	Follower: outsource	Follower: none	Pioneer: outsource	Follower: none	Follower: none	Follower: none	Follower: none	Pioneer: outsource
IT[c]	Intermediate	Intermediate	Intermediate	Advanced	Basic	Intermediate	Basic	Intermediate	Advanced
Marketing	Sell oriented	Market oriented	Sell oriented	Market oriented	Sell oriented	Sell oriented	Sell oriented	Sell oriented	Market oriented

(*continued*)

Case	A	B	C	D	E	F	G	H	I
HR									
Recruiting	Permanent focus	Temporary focus	Temporary focus	Permanent focus	Permanent focus	Permanent focus	Permanent focus	Temporary focus	Permanent focus
Motivating	Performance	Performance	Performance	Performance	Performance	Performance	Performance	Performance	Performance
Training	Intermediate	Very few	Very few	Intermediate	Very few	Few	Intermediate	Few	Intermediate
Project									
Project strategy	Cost focus	Quality focus	Cost focus	Quality focus	Cost focus	Cost focus	Quality focus	Cost focus	Quality focus
Project structure[d]	Weak matrix	Projectized	Projectized	Strong matrix	Very weak matrix	Weak matrix	Very weak matrix	Strong matrix	Very strong matrix
PM collective authority	Low to medium	High to full	High to full	Medium to high	Low to medium	Low to medium	Low to medium	Medium to full	Medium to high
Project KM	Documents	Documents	Documents	Documents	Documents	Documents	Experienced staffs	Electronics media	Documents
Project communication[e]	Intermediate	Intermediate	Basic	Advanced	Basic	Intermediate	Basic	Intermediate	Advanced
Strategic Performances									
Objectively (2007)[f]									
Sales revenue (mil. bt.)	Same as 2004	More than 2004	More than 2004	More than 2004	Less than 2004	Less than 2004	More than 2004	More than 2004	More than 2004
Net profit (%)	7	4	3	4	3	7	4	4	2
Defect cost	Lower than 2004	Lower than 2004	Lower than 2004	Lower than 2004	Greater than 2004	Lower than 2004	None	N/A	Lower than 2004

(*continued*)

Table IV.

Table IV.

Case	A	B	C	D	E	F	G	H	I
Subjectively (2007)[g]									
Customer satisfaction	Same as 2004	Same as 2004	Lower than 2004	Better than 2004	Lower than 2004	Same as 2004	Better than 2004	Same as 2004	Lower than 2004
Stock holder satisfaction	Lower than 2004	Lower than 2004	Lower than 2004	Better than 2004	Lower than 2004	Lower than 2004	Better than 2004	Same as 2004	Lower than 2004
Employee satisfaction	Same as 2004	Same as 2004	Same as 2004	Same as 2004	Lower than 2004	Same as 2004	Same as 2004	Same as 2004	Same as 2004
Supplier satisfaction	Same as 2004	Same as 2004	Same as 2004	Same as 2004	Lower than 2004	Lower than 2004	Same as 2004	Same as 2004	Same as 2004
Subcontractor satisfaction	Same as 2004	Same as 2004	Same as 2004	Same as 2004	Lower than 2004	Lower than 2004	Same as 2004	Same as 2004	Same as 2004

Notes: [a]Debt/equity ratio comes from the case's balance sheet; [b]*Follower*: the case who did invest later in new construction technology after this construction technology had been proved successful by a pioneer(s); *Pioneer*: the case who took a risk becoming a first mover in using new construction technology; *Outsource*: the case who outsourced external experts to invent or create their needed construction technology instead of internalizing. [c]*Basic*: enough PCs in the case's head office connected via LAN; *Intermediate*: enough PCs in the case's head office connected via LAN and an internet access and there were a use of construction related software such as cost control, project management and so on; *Advanced*: the same as "Intermediate" but additionally with a case's portal web site for exchanging information externally. [d]*Weak and very weak matrix*: the case's head office centralized key project activities such as financial, procurement, HR, QA/QC, cost control and so on. Only limited or none of key staffs were individually deployed to the case's projects; *Strong and very strong matrix*: the case decentralized key project activities by deploying key project staffs to work individually (part time or full time), in a particular project.; *Projectized*: not, at all, centralized but fully deployed key project staffs individually to the case's project or even outsourced a sub contractor to run the project. [e]*Basic*: enough PCs but not connected via LAN; *Intermediate*: enough PCs and connected via LAN; *Advanced*: enough PCs and connected both internal via LAN and external via an internet connection. [f]Objectively strategic performances in 2007, which were strategically resulted from strategic behaviors in last three years (2005-2007) were compared to the objective ones in 2004. This reflects an efficiency of the past strategic behaviors. [g]Subjectively strategic performances in 2007, which were strategically resulted from strategic behaviors in last three years (2005-2007) were compared to the subjective ones in 2004. This reflects an effectiveness of the past strategic behaviors in the point of view of CEO, senior executive, related functional managers such as construction manager and a procurement manager

outsourcing or internalizing. Information technology competitive attribute which is how IT is utilized to enhance the other functional strategies' efficiency such as types of IT application used and so on. Marketing competitive attribute which best distinguishes the firm's marketing strategy specified by how they invest and set their marketing strategy: marketing oriented, which is not perceived as isolated from the core process but invests and plans for long term marketing; and sell oriented, which is perceived as marketing isolated from the business core process with no investment and planning for long term marketing. HR competitive attribute which best distinguishes the firm's HR strategy: how the firm strategically recruits; how the firm strategically rewards; and how the firm strategically manages the firm's tacit knowledge.

- *Project or operational strategic behavioral competitive attributes*. In order to align with both a firm's business and other functional strategic behavioral competitive attributes, the cases selected a set of the following operational strategic behavioral competitive attributes. Project strategy attributes which are as follows: cost focus; time focus; quality focus, and safety focus. Project structure attributes which are the following structures: very weak matrix; weak matrix; strong matrix; very strong matrix; and projectized. Project manager authorization attributes which are how high are these following authorities: to approve a project plan; to proceed or stop construction works, if necessary or in case of emergency; to manage project finance; to procure materials; to procure construction tools and equipment; to procure subcontractors; to acquire and procure project staff such as engineers, supervisors, technicians; to acquire and procure labor such as workers; to approve changes such as budgets, schedules, quality; to administer project contracts, and to manage the project client's relationship. Project knowledge management attributes which are as follows: manage via project documents; manage via electronic media; and manage experienced or capable staff. Project communication attributes, which are how the case uses IT to enhance information exchange and communication both internally and externally as follows: advanced support; intermediate support; and basic support.

2.6.3 Strategic performances. Once the cases strategically behave according to all selected strategic behavioral competitive attributes, then the strategic performances will be generated. The strategic performance competitive attributes would be as follows. Objectively strategic performance competitive attributes: sales revenue; net profit; defect costs incurred due to work not meeting contractually required quality; penalties or fines subject to the contracts caused by project delays; and costs incurred by construction accidents on the projects. Subjectively strategic performance competitive attributes: customer/client satisfaction with finished projects; stock holder satisfaction with an annual dividend or a stock price; employee satisfaction with the firm's HR strategy; and supplier and subcontractor satisfaction in doing business with the firm.

2.7 Propositions and a theoretical framework

Accordingly, we translated the previous results into a generic proposition as follows: the differences in implication of perceptions of business environment directly yield differences in strategic behaviors and indirectly yield differences in strategic

performances (see Figure 1). We separated the generic proposition into two: *P1*. the differences in implication of perceptions of business environment directly yield differences in strategic behaviors; *P2*. the differences in strategic behaviors directly yield differences in strategic performances. In depth analysis was conducted through the context of these two separated propositions.

P1. The differences in implication of perceptions of business environment directly yield differences in strategic behaviors.

P1.1. Optimistic extrovert tends to grow using differentiate as mode of competition with board scope of competition.

P1.2. Pessimistic and moderate extrovert tend to grow using cost leadership as mode of competition with focused scope of competition.

P1.3. Optimistic extrovert tends to be market oriented.

P1.4. Optimistic extrovert tends to focus in quality as a project strategy.

P1.5. Optimistic extrovert tends to use not less than strong matrix as a project structure.

P1.6. Optimistic extrovert tends to authorize medium to full authority to a project manager.

P1.7. Optimistic and moderate introvert tend to grow using dept rather than equity.

P1.8. Pessimistic introvert tends to grow using equity rather than dept.

P1.9. Optimistic introvert with differentiate as mode of competition tends to be a pioneer in using new construction technology.

P1.10. Optimistic introvert tends to exploit at least intermediate use of IT to vertically support mode and scope of competition and horizontally support other functional strategies.

P1.11. Pessimistic introvert tends to exploit only basic use of IT to vertically support mode and scope of competition and horizontally support other functional strategies.

P1.12. Optimistic introvert tends to provide very few to immediate HR training to vertically support mode and scope of competition and horizontally support other functional strategies.

P2. The differences in strategic behaviors directly yield differences in strategic performances.

P2.1. Board scope of competition tends to generate more sales revenue than focused scope of competition.

P2.2. Focused scope of competition tends to generate more net profit percentage than board scope of competition.

P2.3. Using dept rather than equity tends to generate more sales revenue than using equity rather than dept.

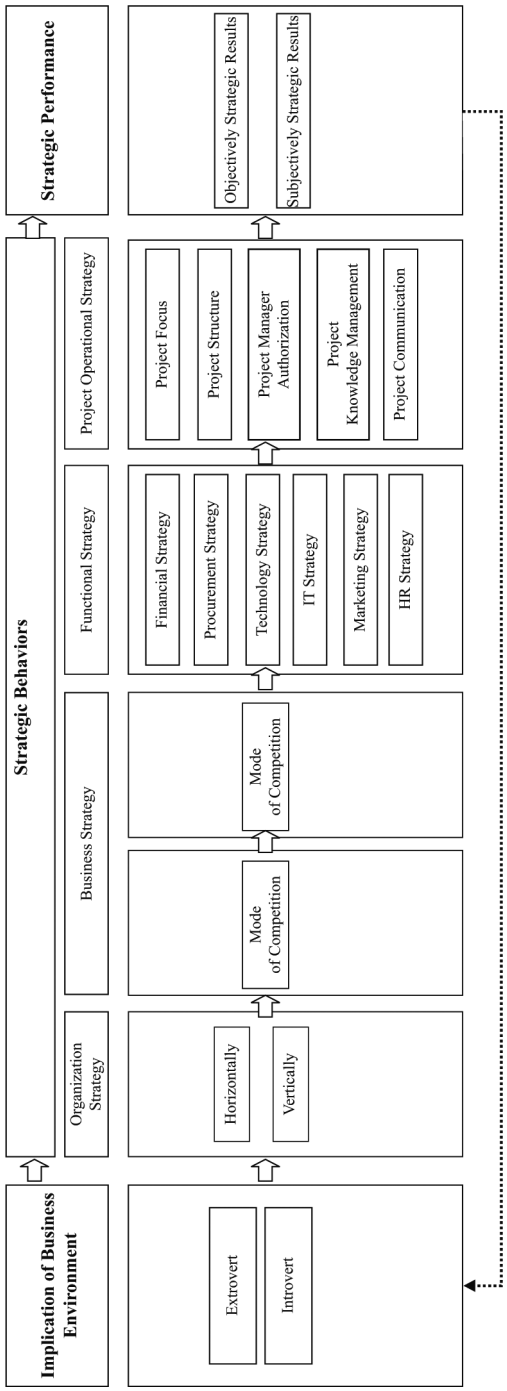

Figure 1.
Theoretical framework of contractor's strategic behaviors

P2.4. Procuring based on relation and/or quality with suppliers and/or subcontractors tends to generate more sales revenue than procuring based on price.

P2.5. Procuring based on relation and/or quality with suppliers and/or subcontractors tends to generate lower defect cost than procuring based on price.

P2.6. Exploiting at least intermediate use of IT to vertically support mode and scope of competition and horizontally support other functional strategies tends to help in lowering defect cost and increasing of sales revenue.

P2.7. Advanced use of IT to vertically support mode and scope of competition and horizontally support other functional strategies generates better strategic performances both objectively and subjectively than a basic and an intermediate use of IT.

P2.8. Sell oriented tends to maintain customer satisfaction.

P2.9. Market oriented tends to maintain and increase customer satisfaction.

P2.10. Quality focus as project strategy tends to generate more sales revenue than other project strategies.

P2.11. Quality focus as project strategy tends to maintain or increase customer satisfaction.

P2.12. Strong matrix as project structure tends to maintain and increase strategic performance both objectively and subjectively.

P2.13. Weak matrix as project structure tends to generate more net profit percentage than other project structures.

P2.14. Managing project knowledge using experienced staffs tends to generate more sales revenue and better customer satisfaction.

P2.15. At least intermediate use of IT to support project communication tends to generate better sales revenue and stakeholder satisfaction than basic use of IT as project communication support.

The units of analysis of the first group of propositions (*P1* and its sub-propositions) are the implication of perceptions of business environment and strategic behaviors. The word "tends to" helps us express the law of interaction specifying that the implication of perceptions of business environment shapes strategic behaviors. Similarly, the units of analysis of the second group of proposition (*P2* and its sub-propositions) are strategic behaviors and strategic performances. As well, the word "tends to" behaves as the law of interaction specifying that strategic performances are generated by selected strategic competitive attributes of strategic behaviors.

To construct a theoretical framework, we used the information in Table II and a set of significant propositions outlined previously to constitute all nature of strategic alignments. Figure 1 conceptualizes the theoretical framework.

3. Conclusion

In this study, we explained an inductive logical process as a means to derive our propositions. The general process of developing these propositions was based on case study research, which heavily used within-case and cross-case studies (column and row in Table IV). We also developed propositions, which we generalized into typology-free propositions. We then developed a single proposition suggesting the most generic relationship within strategic alignments of contractors. Our framework meets the major characteristics for a theoretical framework, as suggested by Dubin (1978).

The framework addresses the significant influence of the implication of perceptions of business environment directly on strategic behaviors, and indirectly on strategic performances collectively as a firm instead of as a project. It is expected to logically help firms in selecting the focus and content of strategic alignment as the source of their competitive advantage and is new to the literature of construction. Its strengths include a rigorous research design based on a diverse set of companies/projects and real-world data. It is generalizable across different types and sizes of contractors and different levels of strategy. In addition, the framework includes and relates multiple levels of participants (such as CEOs, senior executives, functional managers, project managers, and some of their customers) into a coherent structured set of relationships that are based on propositions which describe and may be used for predicting the phenomena of strategic alignment in different configurations of their attributes. The finding can also be applied in contractors in other developing countries.

One limitation in this study is the relatively small number of cases. However, Eisenhardt (1998) argued that four to ten cases are the right measure and should be adequate for analytic generalization. In addition, the study may suffer from a bias of firm management views. Nevertheless, we were able to minimize any such bias by using multiple data sources (review of related documents received from the firms, the existing literature, etc.), and validating finding with a panel of experts.

4. Further research

The excitement of studying strategic alignment in construction has just begun. The framework significantly implies that different implications of perceptions of business environment directly yield different strategic behaviors, which, in turn, directly yield different strategic performances. According to this, three strategic questions could be generated – the first question is how contractors can gain significant information to shape a correct perception of the business environment, the second is what configuration of strategic alignment should be selected in order to respond to the implied perceptions, and the third is what the generated consequences would be. This is simply saying that, regarding the study of strategic alignment in construction, there are three different strategic areas to be further studied regarding the entity of the firm:

(1) The process or mechanism for which will help the contractors in systematically gaining significant information for effectively implying business perceptions,

(2) The relationship among strategic competitive attributes that constitute strategic behaviors which are embedded in each level of aligned strategy,

(3) The relationship between strategic competitive attributes and strategic performances.

In furthering this study, a large sample study should be conducted to ensure the generalizability and statistical robustness of this research.

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