

RESEARCH METHODOLOGY

3.1 Research Hypotheses

A study is conducted and analysed by investigating the validity of the following propositions:

Proposition 1:

More efficient and effective exchange of knowledge between external and internal parties of construction firms leads to higher innovation performance.

Proposition 2 :

A long-term view in construction firms enhances the firm to adjust to changes in the environment and increase innovation performance.

Proposition 3 :

The better developed the absorptive capacity of the construction firm, the higher the innovation performance.

Proposition 4 :

A context with less strict regulations and restrictions has a positive impact on the development of new knowledge for innovation within construction firms.

Proposition 5 :

Coordination between construction firm and its external knowledge resources can help to gain competitive advantage.

Proposition 6 :

Coordination of temporary network, in the form of detailed contracts, has a negative impact on exchange of knowledge for competitive advantage between internal and external knowledge resources in construction industry.

Proposition 7 :

Coordination of permanent network, in the form of trust, has a positive impact on exchange of knowledge for competitive advantage between internal and external knowledge resources in construction industry.

3.2 Research Instrument

This research adopt the experience surveys approach to investigate the application of knowledge-based approach to innovation as a competitive strategy among construction enterprises in Malaysia. In the attempt to understand the knowledge-based strategies within construction industry in Malaysia, several construction firms in Malaysia were approached for an interview to discuss on the issues on the topic. These firms are Gamuda

Berhad, Road Builder Berhad, IJM Corporation Berhad, MTD Capital Berhad, WCT Engineering Berhad, Gadang Holdings Berhad, Pintaras Jaya Berhad and Company X.

The criteria of selection for the companies are:

- 1) The core business of the firm is construction.
- 2) The firm is a major player in construction industry in Malaysia.
 - 3) Only firm employing at least one hundred employees were considered in the sample in order to ensure a minimum operating structure of each firm.

3.3 Sampling Design

Convenient sampling method was adopted to collect primary data from firms that grant interview. This is because most management will only grant interview if there is reference from a contact within the company.

3.4 Data Collection Procedure

Major construction firms were approached through list of contact. Reference letter from the faculty and university were sent via facsimile and e-mail for

justification of the survey purpose. Upon the agreement form the targeted interviewee company, an appointment will be scheduled. Based on the proposition and questionnaire developed, a semi-structure interview were carried out. Due to the limitation of time given during the semi-structure interview, not all of the questions may be answered. These questions are conducted via follow-up interview via e-mail and telephone. Apart from that, secondary data was collected via corporate webpage, annual report, Bursa Kuala Lumpur publications, magazines and newspapers.

3.5 Data analysis techniques

Pattern-matching technique was adopted involving generalizing a particular set of results to theoretical propositions (Yin, 1984). This is due to the nature of the study that it is emphasizing on the study of the experiences of the strategic management within construction industry, the analysis results were relied on analytical generalization rather than statistical generalization.

RESEARCH RESULTS

4.1 Summary Statistic of Respondents

Table 4.1 (a) illustrate the characteristics of the construction firms.

Table 4.1(b) illustrates the evidence of knowledge transfer in construction firms.

Table 4.1(c) illustrates the types of knowledge transfer in construction firms.

Table 4.1(d) illustrates the evidence of innovation in construction firms.

Table 4.1(e) illustrates the factors affecting innovation in construction firms.

4.1.1 Summary of findings of MTD Capital Bhd via e-mail response

Findings on MTD Capital Bhd are not included in the table analysis because the information obtained is based on the e-mail response from the management of the company rather than face to face interview. The information obtained may be limited as there is no two-way interaction as face to face interview. Details from the respondent are as below:

- i) Name of organization : MTD Capital Bhd
- ii) Core business : Construction and property
- iii) Year of establishment : 1980
- iv) Year of listing on Bursa Malaysia: 1994

- v) Paid up Capital : RM278 million
- vi) Grouped companies : Yes
- vii) International construction experience: Yes
- viii) Diversification : Yes
- ix) Number of Employees : 400 (year 2004)
- x) Group turnover : RM577.6 million (2004)
- xi) Procedures for continuous learning and training programme for staffs : Yes
- xii) Evidence of knowledge transfer
 - a) Between individual professionals : Medium (on project basis)
 - b) Between Managers : Medium
 - c) Inter-department : Low
- xiii) Forms of knowledge transfer
 - a) Tacit knowledge : Medium High
 - b) Explicit knowledge : Medium
- xiv) Evidence of reward systems to attract talented professionals : Yes
- xv) Transfer of individually held competence to organization : No
- xvi) Investment in research & development : Minimum
- xvii) Evidence of innovation in business management and operation :
Yes and increasing
- xviii) Effective exchange of knowledge internally and externally will leads
to higher level of innovation : Agreed
- xix) Development of mission statement : Yes

- xx) Experience of alliance or joint venture in construction projects : Yes, quite frequent
- xxi) Do coordination of temporary network, in the form of detailed contracts have negative impact on exchange of knowledge? : Yes, but minimum.
- xxii) Do coordination of permanent network, in the form of trust have positive impact on exchange of knowledge? : Yes
- xxiii) Less stringent regulations and restrictions will help encourage development of new knowledge for innovation in construction.