GROWTH FACTORS OF CONSTRUCTION FIRMS IN KOTA KINABALU, SABAH.

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All the materials in this thesis are original except for quotations, summaries and reference which had been duly acknowledge.

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ABSTRACT

GROWTH FACTORS OF CONSTRUCTION FIRMS IN KOTA KINABALU, SABAH

This research aims to determine growth factors for construction contracting firms operating in Kota Kinabalu, Sabah. The objective is achieved by analyzing relationships between proportionate growths in sales of these firms against the factors stipulated in two proposed models. The first model is called organization characteristic which consists of four theories with nine factors (organizational theory – size, age; human capital theory – experience, education, trainings; social capital theory – relationships, social networks; motivation theory – NACH. LOC). The second model is called organization strategies and consists of two strategies and six factors (marketing strategies – price, product, promotion; management strategies – project, value, finance). Questionnaires data was collected from 183 Managing Directors of construction firms in Kota Kinabalu. Results from analysis reveal that 78.8% and 63.5% of the variance are able to be explained by model 1 and 2 respectively, with age, experience, relationships, social networks, NACH, LOC, price, product, promotion, project management and finance management (total eleven factors) significant. Hopefully, this research has contributed to researches in this field and played its part in paving way for future researches to identify a more sustainable and replicable model, hence assisting the construction community to face the challenge of 21st century.

ABSTRAK

KAJIAN TERHADAP FAKTOR-FAKTOR PERTUMBUHAN SYARIKAT-SYARIKAT PEMBINAAN DI KOTA KINABALU, SABAH

Kajian ini bertujuan mengenalpasti faktor-faktor pertumbuhan bagi syarikat-syarikat pembinaan yang beroperasi di Kota Kinabalu, Sabah. Objektif ini dicapai dengan menganalisis perhubungan antara pertumbuhan berkadaran jualan syarikat-syarikat pembinaan dengan faktor-faktor yang dibentangkan dalam dua model yang dicadangkan. Model pertama dinamakan ciri-ciri organisasi, iaitu terdiri daripada empat teori bersamaan sembilan faktor (teori organisasi – saiz, usia; teori kapital manusia – pengalaman, pembelajaran, latihan; teori kapital sosial – kehubungan, rangkaian social; teori motivasi – NACH, LOC). Model kedua adalah strategi organisasi, yang terdiri daripada dua strategi bersamaan enam faktor (strategi pemasaran – harga, produk, promosi; strategi pengurusan – projek, nilai, kewangan). Soal selidik telah dikumpul daripada 183 pengarah pengurusan bagi syarikat-syarikat pembinaan di Kota Kinabalu. Hasil daripada analisis jawapan-jawapan mereka, telah didapati bahawa 78.8% dan 63.5% varians dapat dipenuhi oleh model 1 dan model 2 masing-masing, dengan usia, pengalaman, kehubungan, rangkaian sosial, NACH, LOC, harga, produk, promosi, pengurusan projek dan pengurusan kewangan (kesemuanya sebelas faktor) didapati mustahak. Adalah diharapkan bahawa kajian ini telah memberikan sumbangan kepada penyelidikan dalam bidang ini, dan memainkan peranan dalam membuka jalan untuk kajian-kajian yang lebih lengkap dan sempurna pada masa depan, dan selanjutnya membantu masyarakat pembinaan menghadapi cabaran-cabaran sengit abad ke-21 ini.

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CHAPTER 1

INTRODUCTION

1.1 Overview of Construction Industry

As an industry, construction plays a significant role in the economy. The construction industry (CI) provided for the homes in which people live and the places they use for work and recreation. Construction also provides for essential facilities and infrastructures, such as schools, hospitals, roads, water and electricity supply, and telecommunications.

The industry and its activities are closely linked to other parts of the economy. Important linkages include the manufacturing, wholesale and retail trade industries, as well as the finance and insurance industries. Significant parts of the professional services industry, such as the architectural and engineering professions, are also closely linked to the CI.

Despite its prominent roles, construction market performances are considered to be fundamentally flawed not only in developing but also in developed country (Hindle, 2001). In any other industries, market forces will ensure service providers not meeting the customer expectation to be displaced. However, this does not happened in CI, which leads Carr (2000) to believe that there is a structural impediment to development in CI and the industry need to adopt new form of organization structure, which can understand the customers better. Love, Irani and Edwards (2004) emphasis on a new approach on inter-organization collaboration, cooperative and learning and move towards assimilating a symbiotic client-driven project team entity, away from the traditional fragmented project teams where professional within it aspire to different goal and objectives.

Eaton (1994) further highlighted the chronics problems of CI, which are low productivity, insufficient quality, poor coordination and high cost while Low and Tan (1994) characterized the industry as 4D (Discontinuous, Dispersed, Diverse, and Distinct in Nature). As an industry with unstable workload due to unstable demand, construction firms faced difficulties to improve quality. Metri (2005) insisted that the success of TQM (Total Quality Management) in manufacturing and other industries is forcing construction organizations to adopt TQM. Jaafari (1996) however cautious that to force quality on the industry without concern about the characteristic, structure, hereditary environment and the unique way CI behaves doom to fail.

On marketing aspect, Yisa *et al.* (1996) pointed out that Construction firms are generally unclear on what should be emphasized on and how to decide on organizational marketing orientation. Consequently, marketing is less developed and performed in most firms at *ad hoc* basis. Bennett (2005) supported this view and further elaborated that firm adopting long term approaches to marketing management across cycles tended to attain superior performance. Unfortunately, short term approaches to marketing were common place in CI.

Traditional indicators for performances in CI, i.e cost, time and quality can no longer provide balance view on project performance, according to Lee (2000). Firms can no longer compete solely on the basis of cost, but must formulate competitive strategy (Chandler, 1997). Love and Holt (2000) argued that the present construction Business Performance Measurement (BPM) is myopic, most often being project specific, profit orientated and neglected broader stakeholder issues and highlighted the need to shift from BPM to Stakeholder Perspective Measurement (SPM), which consider long term relationship with customers, suppliers, employees, financiers and community.

Ofori (2000) emphasized that twenty first century CI needs to transform from 3D (Dirty, Dangerous, Demanding) to 3P (Professional, Productive, Progressive) in order to compete in global market. However, CI in developing countries faced additional challenges compare to those in developed countries due to general situation of socio-economic stress, chronic resource shortage, institutional weakness and general inability to deal with key issues. Another study on future of CI by Siehler (1999) found that triggered by Asian Financial Crisis, there had been a switch in objective of Global construction firms in last few years, from market share to profitability.

In short, despite being one of the major industries, CI falls short compare to other industries in term of process, quality, marketing and value managements due to nature of the industry which is projects-based and having inconsistent demands.

1.2 Construction Industry in Malaysia

In 2005-06, the construction industry contributed 2.7% (RM 7,133 Million) to Malaysia's Gross Domestic Product (GDP). The industry also employed 798,200 workers, either as employees or as self-employed contractors, which represented 7.4% of all the employed persons in Malaysia (Malaysia Finance Ministry Annual Finance Report, 2005-2006).

However, compare with the economy which grew at 5.3%, the construction sector continued to contract albeit at a slower rate of -1.6% in 2005 (Malaysian Construction Industry Directory 2006-2007). The sector remained in recession as the 8th Malaysia Plan was nearing the end and most infrastructure projects had been completed or nearing completion. The residential sector which supported growth in the CI since second quarter of 2003, although showing signs of slow down, has remained resilient. Growth in the sector is expected to recover with the

implementation of 9th Malaysia Plan beginning 2006 in which the Government allocated RM 200 billion with another RM 20 billion to be sourced through Private Financing Initiatives (PFI) for development (CIDB Malaysia Annual Report, 2006).

Demand for construction services in Malaysia domestic market is driven mainly by private sector which constitutes approximately 75% of the market. This can be further breaks down to Residential (35%), Infrastructure (25%) and Commercial (15%). The balance 25% is Government market. Some Malaysian construction firms had ventured into international market, mainly in India, Middle East and other ASEAN countries and enjoyed certain degree of successes.

In line with the trends in other countries, Construction Industry Development Board (CIDB) was established in 1992 in Malaysia to develop and encourage development of CI. By the year 2006, there are 71,305 registered (with CIDB) contractors in Malaysia.

Table 1.1 Numbers of Registered Contractors (with CIDB) by States and Grades

State	G1	G2	G3	G4	G5	G6	G7	Total
Johor	4,487	1,028	1,244	233	229	79	210	7,510
Kedah	2,977	597	465	112	142	51	162	4,506
Kelantan	2,745	224	355	83	166	52	115	3,740
Labuan	277	20	44	7	8	5	9	370
Melaka	1,506	236	351	55	85	31	70	2,334
Negeri Sembilan	2,965	370	495	74	98	27	59	4,088
Pahang	2,617	368	484	125	129	33	91	3,847
Perak	3,222	679	698	144	170	58	102	5,073
Perlis	1,201	81	82	17	25	9	17	1,432
Pulau Pinang	2,138	648	703	119	137	62	191	3,998
Sabah	**4,034**	**566**	**660**	**138**	**170**	**80**	**251**	**5,899**
Sarawak	1,286	413	470	115	174	61	222	2,741
Selangor	6,716	1,423	2,208	406	603	222	844	12,422
Terengganu	2,674	231	434	102	129	40	123	3,733
Kuala Lumpur	2,715	1,210	2,498	537	920	354	1,378	9,612
TOTAL	41,560	8,094	11,191	2,267	3,185	1,164	3,844	71,305

(Source: Malaysian Construction Industry Directory 2006-2007)

Future of construction industry in Malaysia remains uncertain, with ever increasing amount of contractors competing in ever contracting domestic market as most infrastructure projects were already completed. Other external risks such as high oil prices and tightening of the US market will have downside effects on the demand in the private sector and incur negative variance on the public sector supply of the Malaysian CI too.

1.3 Construction Industry in Sabah and Kota Kinabalu

"To intensify development of construction sector" is high on the list of the 8-points measures (second on the list in fact) announced by Sabah Business Council to boost the state's economy (Zatul-Karamah A.B.U *et. al.*, 2003), highlighted the importance to construction industry towards the state's economy.

According to Malaysian Construction Industry Directory 2006-2007, Sabah has 5,899 registered contractors, the 4th highest in Malaysia only after Selangor, Kuala Lumpur and Johor. Similar to patterns in other states in the country, most of these construction firms are small in size.

Table 1.2 Numbers of Registered Contractors by Districts and Grades in Sabah

District	G1	G2	G3	G4	G5	G6	G7	Total
Tawau	401	41	53	10	7	4	13	529
Semporna	147	12	11	2	3	0	0	175
Lahad Datu	321	26	32	3	5	2	0	389
Sandakan	434	50	78	15	9	6	11	603
Tuaran	203	21	10	2	4	0	0	240
Kota Kinabalu	**1,212**	**200**	**315**	**87**	**129**	**67**	**225**	**2,235**
Kudat	375	45	50	11	6	1	1	489
Keningau	291	24	26	3	2	0	1	347
Tambunan	139	9	24	0	1	0	0	173
Papar	211	12	17	2	2	0	0	244
Beaufort	165	14	24	2	1	0	0	206
Sepitang	135	12	20	1	1	0	0	169
TOTAL	4,034	566	660	138	170	80	251	5,899

(Source: Malaysian Construction Industry Directory 2006-2007)

More than 35% of all the registered Sabah construction firms are based in the state capital, Kota Kinabalu (KK). In terms of higher grades (G5 to G7) and bigger size firms, concentration in the state capital is even more obvious (~80%). Most of these construction firms have operations and projects through out towns and villages in the State. However, the head offices (registration office) are based in KK for easy access to financial and human capital resources. Several big construction firms from West Malaysia also operating in KK. These firms mainly focus on mega projects funded by the federal government.

1.4 Problem Statement

From contracting trend of growth in the industry (in Malaysia) over the past few years, the future of local construction firms look uncertain indeed. Hence, it is worthwhile to start problems analysis by looking into the industry environment.

To enter CI, individual only need to have a low amount of capital compared to other industries. Thus, the industry is considered as having a low entry barrier (Mastura and Abdul-Rashid, 2005). Low entry barriers are good news for new entrants, however bad news for existing firms as high numbers of new contracting enterprises leads to intense competition and high business failure rate.

There are no exact threats of substitute for the industry as a whole. However, as experienced by many developed / industrialized countries, numbers of new construction projects on infrastructures and buildings will significantly reduce as the country edging nearer towards "fully developed" stage and maintenance on existing infrastructures and buildings will then take the center stage. Nevertheless, as Carr (2000) believed, there are some "revolutions" within the industry in recent years, whereby traditional systematic process of planning, design and construction by separate entities is giving ways to a new form of inter-organization collaborations, call

Design-Built, Concurrent Engineering or Lean Construction, which is widely believed to be able to catalyze further growth to the industry.

"Power of Buyers" is traditionally not strong in the industry, as most contractors' marketing efforts are not being directed towards seeking works in a particular market area or from a certain client, but towards getting on the tender lists of construction works for central government, local authorities and nationalized industries (Hillebrandt and Cannon, 1990). This trend is however changing too and as the number of construction firms increased, the buyers have more choices to select from. Moreover, good relationships with buyers are a barrier of entry for another competing company (Mastura and Abdul-Rashid, 2005).

"Power of Suppliers" is not strong in CI as most of the products and materials essential to the industry have many suppliers, with the exception of some specialized equipments or installations. However, as pointed out by Edum-Fotwe *et al.* (1998), good relationship with companies in supply chain can give added advantages, such as better credit terms.

Competition within the industry is furious, especially in a market with contracting demands but increasing supplies. Ability to identify the market segment, market focus and niche market is crucial to survival. As Bennett (2005) put it, incorporate possible influence of cycle into corporate strategy, engage objective and task budgeting and build market share during down turn ultimately increase chances of survival.

Having examined the industry environment, a company position in the industry needs to be determined, which leads us to the heart of this research, whereby under this type of environment, what are the important factors that will lead

to a construction firm growth and to what extend organizational factors, motivation factors, human capital factors, social capital factors, marketing and management strategy influence this growth.

1.5 Objective and Scope of Study

The aim of this study is to investigate growth factors for construction firms in Sabah. The scope is being limited to Kota Kinabalu (KK), the capital city for state of Sabah in East Malaysia, with the target to obtain valuable local data. It will be interesting to compare the eventual findings of this research with findings by other researchers through out the world to identify possible existence of any unique local factors to the growth.

Due to the above mentioned purposes, global multinational construction firms had been excluded from this study. Construction firms from West Malaysia and Sarawak which operate in KK is, however being included, due to their common objectives with the local firms – i.e. long term growth (multinational firm normally comes and goes on project basis with no intention on long term operation locally).

No upper or lower limit on firm size had been set for this study. The objective is to identify different approaches and response by big and small firms to certain common factors. Neither had any construction trades been excluded from the study. Civil, structural, mechanical, electrical, IT, landscape and specialist contractors will all be covered, with the target to identify whether are there any market segment which is particularly competitive.

The study, however focus solely on contractor firms and exclude all consultancy firms. This is due to consultancy firms are generally considered as part of Professional Services Industry rather than in Construction Industry.

Specifically, the main objectives of this study are to discover:-

1. To what extend Organizational Factors (size of firm and age of firm) influence the growth?,
2. To what extend the MD Motivation Factors (NACH and internal LOC) affect a firm growth?,
3. To what extend Human Capital Factors (MD Experience, MD Education, MD Trainings) influence the growth?,
4. To what extend Social Capital Factors (Firm Relationships, MD Social Networks) influence the growth?,
5. To what extend the firm's Marketing Strategy (Pricing, Product, Promotion) affect its growth?,
6. To what extend the firm's Management Strategy (Project Management, Finance Management, Value Management) affect its growth?,
7. To establish a model from the above factors and strategies.

1.6 Significance of the Study

The results of this study will have important implication for the construction firms in KK. Other than some organization factors such as size and age which are not entirely under their control, it is hope that construction firms can improve their performance after knowing some of the key factors influencing growth in this industry, possibly starts by reviewing their present corporate strategies and practices.

Besides, this study also aims to improve consultants, consumers and political leaders understanding on the industry for better development and planning. It is also hoped to serve as a guideline to improve quality and process in the industry as a whole, to satisfy needs of the customers of twenty first century.

Finally, not many researches had been conducted on the Construction Industry in the country, particularly from East Malaysia perspective. The study hopes to serve as a platform for further future researches in various aspects of construction industry in East Malaysia generally and Kota Kinabalu, specifically.

1.7 Organization of Study

The study is being organized into five chapters, which are Introduction, Literature Review, Research Methodology and Framework, Analysis of Results, and Discussion and Conclusion respectively.

Chapter One, Introduction, provides an overview of the construction industry, then zooms specifically into background of construction industry in Malaysia, Sabah and Kota Kinabalu. It subsequently derives the Problem Statements, Objective and Scope of Study, Significant of Study and Organization of Study. Chapter Two, Literature Review, reviews studies done previously by others and their findings. Some of these previous studies are nearly the same as this study, with focus on different countries or states while some others focus on certain segments of CI only. Independent and dependant variables this research set out to study will be discussed too.

Chapter Three, Research Methodology and Frameworks discusses on the Research Framework, Hypothesis, and methods and questionnaires plan to be used to conduct survey for the research. Findings of the studies will be presented in Chapter Four, Analysis of Result while the findings will be discussed and concluded in Chapter Five, Discussion and Conclusion.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

Due to the importance of construction industry as one of the major contributors to the economic growth, many researchers through out the world had conducted researches on growth factors for construction firms. Among those reviewed in this study are as listed below:

Table 2.1 Summary of previous researches on Construction Growth Factors reviewed.

Item	Author	Year	Title	Type	Data Gathering Method	Data Analysis Method
1	Mastura and Abdul-Rashid	2005	Resource-Based View and Critical Success Factors: A Study on Malaysia Contracting Enterprises.	Research Paper	Questionnaire (sample size = 172)	Multiple Regression
2	Fox and Skitmore	2002	Key factors in the future developmet of the construction industry.	Research Paper	Questionnaire (sample size = 76)	Multiple Regression
3	Yisa and Edwards	2001	Evaluation of Business Strategies in the UK Construction Engineering.	Research Paper	Questionnaire (sample size = 54)	Descriptive
4	Love and Holt	2000	Construction Business Performance Measurement.	Concept Paper	N/A	N/A
5	Yisa, Ndekugri & Ambrose	1996	A Review of Changes in the UK Construction Industry.	Concept Paper	N/A	N/A

Many other researchers chose to focus on the influence of certain particular factors on the Construction Industry, rather than general cross-factors researches. Bennett (2005), Cheng (2001) and Hindle (2001) for example, study the industry

performance from marketing point of view. Champ (2001), Carr (2000), Atkinson (1999), Druker (1997) and Jaafari (1996) on the other hand focus on the impact of Human Resource Management (HRM) Strategies.

Metri (2005), Dulaimi and Tanamas (2000), Low and Tan (1994) are more concern on the lack of Quality Management in the industry while Abdul Kadir (2006), Jensen *et al.* (2006), Love *et al.* (2004), Ofori (2000) and Edum-Fotwe *et al.* (1998) highlighted the new structure the industry is to be operated in the future. Shashar (2004) and Mohammad-Suleiman (2003) specifically dealt with impact of technology advancement, in the form of IT on CI.

2.2 Definition of Construction Firms

Dictionary.com (2007) defines "construction" as "act and art to construct" and "construct" is being defined as "to build or form by putting together parts; frame; devise". "Firm" on the other hand, means "a partnership or association for carrying on a business". Hence construction firms are business entities which the nature of works is to build.

There are two parties involve in a construction process - the consultant, whom designs accordingly to customer and statutory requirements, and the contractor, whom builds accordingly to consultant's designs. However, many classify the consultancy service into Professional Service Industry. Hence, to avoid argument, this study defines construction firms as solely contractor firms.

2.3 Definition of Growth Factors

Hall (1995) indicated that there are three types of empirical studies using econometrics to identify factors influencing a firm performance, whereby performance

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