

A.	<p>TITLE OF RESEARCH: <i>Tajuk penyelidikan:</i></p> <p>TOWARDS DEVELOPMENT OF GROWTH INDEX FOR CONSTRUCTION COMPANIES IN MALAYSIA</p>
B.	<p>PERSONAL PARTICULARS OF RESEARCHER / MAKLUMAT PENYELIDIK:</p>
(i)	<p>Name of Research Leader: <i>Nama Ketua Penyelidik:</i></p> <p>Prof. Madya Dr. Abu Hassan Abu Bakar</p>
	<p>Name of Co-Researcher <i>Nama Penyelidik Bersama:</i></p> <ol style="list-style-type: none"> 1. Prof. Dato' Dr. Omar Osman 2. Dr. Ilias Said 3. Dr. Wira Mohd Shafiei 4. Mr. Arman Abdul Razak
(ii)	<p>School/Institute/Centre/Unit : <i>Pusat Pengajian /Institut/Pusat/Unit :</i></p> <p>Housing, Building and Planning</p>

C. Research Platform (Please tick (/) the appropriate box):

Pelantar Penyelidikan (Sila tanda (/) kotak berkenaan):

A. Life Sciences
Sains Hayat

B. Fundamental
Fundamental

C. Engineering & Technology
Kejuruteraan & Teknologi

D. Social Transformation
Transformasi Sosial

E. Information & Communications Technology (ICT)
Teknologi Maklumat & Komunikasi

F. Clinical Sciences
Sains Klinikal

G. Biomedical & Health Sciences
Bioperubatan Sains Kesihatan

D. Duration of this research :

Tempoh masa penyelidikan ini :

***Duration : 3 Years**

Tempoh :

From : 22/10/2007

Dari:

To: 21/9/2010

Ke :

E. ABSTRACT OF RESEARCH

(An abstract of between 100 and 200 words must be prepared in **Bahasa Malaysia and in English**. This abstract will be included in the Annual Report of the Research and Innovation Section at a later date as a means of presenting the project findings of the researcher/s to the University and the community at large)

Abstrak Penyelidikan

(Perlu disediakan di antara 100 - 200 perkataan di dalam **Bahasa Malaysia dan juga Bahasa Inggeris**. Abstrak ini akan dimuatkan dalam Laporan Tahunan Bahagian Penyelidikan & Inovasi sebagai satu cara untuk menyampaikan dapatan projek tuan/puan kepada pihak Universiti & masyarakat luar).

Abstrak

Secara umum, kebanyakan syarikat memiliki beberapa objektif yang bertujuan untuk kekal dan berjaya dalam perniagaan mereka. Dalam jangka masa yang pendek syarikat lebih menumpukan kepada memaksimumkan keuntungan, manakala untuk jangka masa panjang keuntungan tidak lagi menjadi fokus utama kerana salah satu tujuan yang mungkin mendominasi pengurusan syarikat adalah pertumbuhan. Objektif kajian ini adalah untuk mengenalpasti faktor-faktor yang menentukan pertumbuhan syarikat pembinaan di Malaysia, mengenalpasti faktor-faktor yang memberikan peranan penting dalam menentukan pertumbuhan syarikat, mengenal pasti laluan pertumbuhan dan membina indek pertumbuhan untuk syarikat pembinaan di Malaysia. Pengumpulan data dilakukan dengan menggunakan kaedah survey iaitu menggunakan soal selidik yang melibatkan syarikat pembinaan Gred 7 yang diklasifikasikan di bawah Lembaga Pembangunan Industri Pembinaan (CIDB). Sejumlah 600 set borang soal selidik telah dihantar melalui perkhidmatan pos. Daripada jumlah tersebut, 102 borang telah diterima, lengkap dan boleh digunakan untuk analisis. Data telah dianalisis dengan menggunakan kaedah statistik yang relevan seperti frekuensi, teknik indeks relatif penting (RII), analisis faktor dan analisis regresi untuk mendapatkan hasil. Penemuan kajian ini menunjukkan bahawa faktor orientasi berasaskan pelanggan menjadi faktor terpenting dalam menentukan pertumbuhan syarikat pembinaan Malaysia. Kajian ini juga mendapati bahawa faktor pengurusan dan kualiti produk, dan sumber manusia mempunyai pengaruh positif yang signifikan dengan prestasi pertumbuhan samada dalam pertumbuhan pekerjaan atau jualan.

Abstract

Most firms in general have multiple objectives aimed to sustain and succeed in their business. In the short term, firms pay more attention to profit maximization. For the long term however, profit is no longer the prime focus because one of the objectives which may dominate the management of a firm is its growth. The objectives of this study are to establish factors determining growth of construction companies in Malaysia, to establish their path of growth and to establish growth index for construction companies in Malaysia. Data collection for the purpose of this research was done through a questionnaire survey which was carried out involving large construction companies from grade G7 as classified under the Construction Industry Development Board of Malaysia (CIDB). Questionnaires were sent to 600 respondents via postal service. From 600 questionnaires disseminated, 102 of the questionnaires were returned, completed and useable. Data was analyzed by using relevance statistical methods such as frequency, relative important index (RII), factor analysis and regression analysis to establish findings. Findings of this research show that the customer orientation factors was found to be the utmost important factor in determining growth of Malaysian construction companies. It was also found that management and product quality factor and human factor had a positive significant influence with growth performance both in term of growth in employment or turnover.

F. SUMMARY OF RESEARCH FINDINGS

Ringkasan dapatan Projek Penyelidikan

1. Good management of a company was found to be the utmost important factor that contributes to the growth of construction companies.
2. For main categories, it shows that customer orientation was found to be the utmost important factor that influences firms' growth.
3. It also found that management and product quality, and human factor had a great relation with employment and turnover growth.
4. In term of growth path, it was found that most of large construction companies in Malaysia stated as small contractors and began their operations within the local market.
5. It also was found that most of construction companies grew systematically from a local market coverage to a regional one and then to a national market.

G. COMPREHENSIVE TECHNICAL REPORT*Laporan Teknikal Lengkap*

Applicants are required to prepare a comprehensive technical report explaining the project.
(This report must be attached separately)

Sila sediakan laporan teknikal lengkap yang menerangkan keseluruhan projek ini.

[Laporan ini mesti dikepilkan]

List the key words that reflect our research:

Senaraikan kata kunci yang mencerminkan penyelidikan anda:

English	Bahasa Malaysia
Construction Companies	Syarikat Pembinaan
Firm Growth	Pertumbuhan Firma
Company Performance	Prestasi Syarikat
Construction Industry	Industri Pembinaan

H. a) Results/Benefits of this research*Hasil Penyelidikan*

No. Bil:	Category/Number: Kategori/ Bilangan:	Promised	Achieved
1.	Research Publications (Specify target journals) <i>Penerbitan Penyelidikan (Nyatakan sasaran jurnal)</i>	3 Journals 3 proceedings	1 accepted 2 preparation 5 proceedings
2.	Human Capital Development		
	a. Ph. D Students	1	1(belum siap)
	b. Masters Students	1	1
	c. Undergraduates (Final Year Project)		
	d. Research Officers		
	e. Research Assistants	1	1
	f. Other: Please specify		
3.	Patents <i>Paten</i>		
4.	Specific / Potential Applications <i>Spesifik/Potensi aplikasin</i>		
5.	Networking & Linkages <i>Jaringan & Jalinan</i>		
6.	Possible External Research Grants to be Acquired <i>Jangkaan Geran Penyelidikan Luar Diperoleh</i>		

- Kindly provide copies/evidence for Category 1 to 6.

b) Equipment used for this research.

Peralatan yang telah digunakan dalam penyelidikan ini.

Items <i>Perkara</i>	Approved Equipment	Approved Requested Equipment	Location
Specialized Equipment Peralatan khusus	1 unit Personal Computer 1 unit Laser Jet Printer		HBP
Facility Kemudahan			
Infrastructure Infrastruktur			

- Please attach appendix if necessary.

I. BUDGET / BAJET

Perbelanjaan :Expenditure

Project Account No. : 1001 / PPBGN / 811005

Total Approved Budget : RM 150,000.00

Total Additional Budget : RM 15,000.00

Grand Total of Approved Budget : RM 165,000.00

Yearly Budget Distributed

Year 1 : RM

Year 2 : RM

Year 3 : RM

Additional Budget Approved

Year 1 : RM

Year 2 : RM

Year 3 : RM

Total Expenditure : RM 164959.44

Balance : RM 43.56

- Please attach final account statement from Treasury


Signature of Researcher
Tandatangan Penyelidik

15/2/2011
Date
Tarikh

H.

COMMENTS OF PTJ'S RESEARCH COMMITTEE
KOMEN JAWATANKUASA PENYELIDIKAN PERINGKAT PTJ

General Comments:

Ulasan Umum:

The Penyelidikan + Pembangunan
RPP menerima dan menyokong
dehi ni.



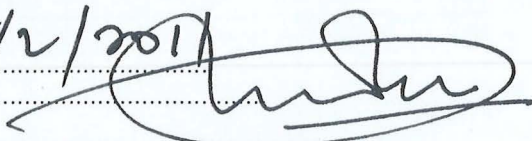
Signature and Stamp of Chairperson of PTJ's Evaluation Committee

Tandatangan dan Cop Pengerusi Jawatankuasa Penilaian PTJ

Date :

Tarikh :

11/2/11



Signature and Stamp of Dean/ Director of PTJ

Tandatangan dan Cop Dekan/ Pengarah PTJ

Date :

Tarikh :

18/2/11

Professor Ir. Dr. Mahyuddin Ramli

Dekan

P. P. Perumahan, Bangunan & Perancangan

Universiti Sains Malaysia

11800 Pulau Pinang

JABATAN BENDAHARTI
 SUB KUMP WANG UNIV PENYELIDIKAN (1001)
 PENYATA PERBELANJAAN PADA 31 OKTOBER 2010

NAMA PROJEK :

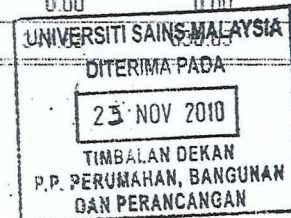
TOWARDS DEVELOPMENT OF GROWTH INDEX FOR CONSTRUCTION
 COMPANIES IN MALAYSIA

TEMPOH :

KETUA PROJEK : DR. ABU HASSAN ABU BAKAR

PUSAT PENCIPTAAN PERUMAHAN, BANGUNAN DAN PERANCANGAN

AKAUN	PTJ	PROJEK	DONOR PERUNTUKAN PROJEK	PERBELANJAAN TERKUMPUL SEHINGGA THN LALU	PERUNTUKAN SEMASA	TANGUNGAN SEMASA	BAYARAN SEMASA	BELANJA SEMASA	BAKI PROJEK
111	PPBGN	811005	103,000.00	94,119.94	8,880.06	0.00	0.00	0.00	8,880.06
115	PPBGN	811005	0.00	2,304.08	-2,304.08	0.00	0.00	0.00	-2,304.08
221	PPBGN	811005	23,000.00	27,647.46	-4,647.46	483.00	-452.37	30.63	-4,678.09
223	PPBGN	811005	2,500.00	300.00	2,200.00	0.00	0.00	0.00	2,200.00
224	PPBGN	811005	4,500.00	0.00	4,500.00	0.00	0.00	0.00	4,500.00
226	PPBGN	811005	2,500.00	0.00	2,500.00	0.00	0.00	0.00	2,500.00
227	PPBGN	811005	6,200.00	14,028.33	-7,828.33	0.00	0.00	0.00	-7,828.33
228	PPBGN	811005	2,500.00	220.00	2,280.00	0.00	0.00	0.00	2,280.00
229	PPBGN	811005	5,800.00	6,045.00	-245.00	0.00	800.00	800.00	-1,045.00
335	PPBGN	811005	15,000.00	14,136.00	864.00	0.00	0.00	0.00	864.00
441	PPBGN	811005	0.00	5,295.00	-5,295.00	0.00	0.00	0.00	-5,295.00
552	PPBGN	811005	0.00	30.00	-30.00	0.00	0.00	0.00	-30.00
			165,000.00	164,125.81	874.19	483.00			43.56



SENARAI JUMLAH-JUMLAH KECIL :

110	EMOLUMEN	103,000.00	96,424.02	6,575.98	0.00	0.00	0.00	6,575.98
220	PERKHIDMATAN DAN BEKALAI	47,000.00	48,240.79	-1,240.79	483.00	347.63	830.63	-2,071.42
330	ASET	15,000.00	14,136.00	864.00	0.00	0.00	0.00	864.00
440	PEMBERIAN DAN KENAAN BAY	0.00	5,295.00	-5,295.00	0.00	0.00	0.00	-5,295.00
550	PERBELANJAAN LAIN	0.00	30.00	-30.00	0.00	0.00	0.00	-30.00
		165,000.00	164,125.81	874.19	483.00	347.63	830.63	43.56



INSTITUT PENGAJIAN SISWAZAH
INSTITUTE OF POSTGRADUATE STUDIES

UNIVERSITI SAINS MALAYSIA

Ruj Kami : P-RD0024/09(R)

Tarikh : 24 September 2009

Nurkhuraishah Binti Abdul Karim
No. 7, Lorong BLM 1/6, Bandar Laguna Merbuk,
08000 Sungai Petani
Kedah

Puan,

Pendaftaran Untuk Mengikuti Pengajian Siswazah

Sukacita kami mengesahkan bahawa puan telah didaftarkan sebagai calon pengajian siswazah di universiti ini dan butiran pendaftaran puan adalah seperti berikut :-

Pusat Pengajian/Pusat/Unit	:	Pusat Pengajian Perumahan, Bangunan & Perancangan
Ijazah	:	Doktor Falsafah
No. Pendaftaran	:	P-RD0024/09(R)
Tarikh Daftar	:	18 Ogos 2009
Tarikh Kuatkuasa Pencalonan	:	01 September 2009
Tarikh Maksimum Pencalonan	:	31 Ogos 2014
Jenis Pencalonan	:	Penuh Masa
Bidang/Pengkhususan	:	Pengurusan Binaan(HBP)

2. Sila maklumkan kepada kami dengan kadar segera sekiranya berlaku pertukaran alamat surat-menyurat untuk mengelak sebarang kesulitan. Puan juga dipohon untuk menyatakan nombor pendaftaran di dalam semua urusan surat-menyurat dengan pihak kami.

Sekian.

Yang benar,

(MOHD ZULKARNAIN MOHAMAD TAJULARIFFIN)

Penolong Pendaftar (Kemasukan)

b.p. Dekan

Telefon : 04-6532936

E-mel : mzulkarnain@notes.usm.my

s.k. Dekan, Pusat Pengajian Perumahan, Bangunan & Perancangan

(PU) Profesor Madya Dr. Abu Hassan Bin Abu Bakar
(PB)

MZMT/es/suratpendaftaran(BM)/grasis



30 SEP 2009

11800 Universiti Sains Malaysia, Pulau Pinang, Malaysia ☎ 1 300 888 876 ☎ (6) 04 - 653 2931/40

General ☎ (6) 04 653 2606 ✉ helpdesk_ips@notes.usm.my • Examination ☎ (6) 04 653 2945 ✉ exam_ips@notes.usm.my

Admission ☎ (6) 04 653 2960 ✉ admission_ips@notes.usm.my • Data & Record ☎ (6) 04 653 2983 ✉ records_ips@notes.usm.my



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11800 USM • Pulau Pinang • Malaysia • Tel:604-653 3888 • ext.2941/2944/2946/2948 • Faks:604-653 2931 • dean_ips@usm.my • www.ips.usm.my

Ruj Kami: P-RM0012/07(R)

Tarikh : 05 Disember 2007

Mohamad Nizam Bin Yusof
18-1-18, Sri Nibung Apartment,
Jalan Tun Dr. Awang
11900 Bayan Lepas, Pulau Pinang



Tuan/Puan,

Pendaftaran Untuk Mengikuti Pengajian Siswazah

Ingin pihak kami mengesahkan bahawa tuan/puan telah didaftarkan sebagai calon Pengajian Siswazah di Universiti ini dan butiran pendaftaran tuan/puan ialah seperti berikut:-

Pusat Pengajian/Pusat/Unit : P. P. Perumahan, Bangunan & Perancangan
Ijazah : Sarjana Sains (Pengurusan Projek)
No. Pendaftaran : P-RM0012/07(R)
Tarikh Daftar : 05 Disember 2007
Tarikh Kuatkuasa Pencalonan : 01 Disember 2007
Tarikh Maksimum Pencalonan : 30 November 2010
Jenis Pencalonan : Penuh Masa
Bidang/Pengkhususan : Pengurusan Binaan(HBP)

2. Sukacita sekiranya tuan/puan memberitahu kami dengan segera jika berlaku pertukaran alamat. Sila tuan/puan guna no. pendaftaran dalam semua urusan surat-menyurat.

Sekian, terima kasih.

Yang benar,

(MOHD ZULKARNAIN MOHAMAD TAJULARIFFIN)

Penolong Pendaftar

b.p. Dekan

Telefon: 04-6532936

E-mel: mzulkarnain@notes.usm.my

s.k. Dekan/Pengarah, Pusat Pengajian Perumahan, Bangunan & Perancangan

(PU) Prof Madya Abu Hassan Bin Abu Bakar
(PB)

MZMT/nm/surat pendaftaran(BM)/grasis

**BORANG LAPORAN PEMBETULAN/PINDAAN TAMBAHAN YANG DIPERAKUKAN OLEH JEMAAH
PEMERIKSAAN TESIS**

*(Borang ini hanya digunakan untuk pembetulan/pindaan tambahan selain dari laporan pemeriksa-
pemeriksa yang perlu dicatatkan oleh penyelia calon)*

Nama Calon : Mohamad Nizam Bin Yusof

Tajuk Tesis : Main Factors Contributing to Growth of Malaysian Construction
Companies

Ijazah : Sarjana Sains (Pengurusan Projek)

Penyelia : 1. Prof. Madya Dr. Abu Hassan Abu Bakar
2. En. Arman Abdul Razak

Pusat Pengajian : Perumahan, Bangunan dan Perancangan

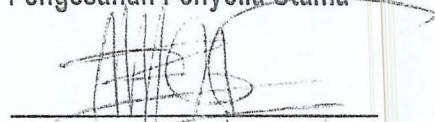
Tarikh Viva : 25 Januari 2011 (Selasa)

Mukasurat	Komen Pemeriksa semasa sesi viva	Pembetulan	Catatan
6	Clearly indicate the original source of 'major cities' and justify	The sentence of "major cities" has been removed and change to "selected cities" with justification	See page 6 ✓
12	Objective should be clearly addressed to give some overview about this chapter.	Objective for chapter 2 has been provided ✓	See page 12
18	Citations about previous researchers are not right.	Has been revised	See page 18 -19 ✓
19	Clearly mentioned sentence like 'several studies'	Has been modified	See page 20 ✓
32	Justify why only two priority factors selected.	Justification has been provided	See page 34 ✓
38	Clearly justify the group categorization of factors influencing firm growth.	Justification has been provided	See page 39 ✓
52	Justify the usage of this likerts' scale.	Justification has been provided	See page 54 ✓

57	Justify the usage of frequency, relative important index, factor analysis and multiple regression.	Justification has been provide	See page 59-62 ✓
96	Elaborate more on implications of findings.	Implication of findings has been elaborated	See page 97 ✓
99-109	- Internet based references – write the date and time. - Citations do not appear in the references.	-Internet based references has been followed Harvard Style -Citation (reference included),	See page 100-111 ✓

Saya telah menyemak dan mengesahkan semua pembetulan/pindaan yang dikehendaki oleh Pemeriksa Dalam dan Pemeriksa Luar telah dicatat sepenuhnya oleh Penyelia Utama/Penyelia Bersama

Pengesahan Penyelia Utama



Tarikh: 10/2/2011

Penyelia Bersama

 10/2/2011

Internal Examiner



10/2/2011
 DR. MOHD HANIZUN BIN HANAFI
 LECTURER
 CONSTRUCTION MANAGEMENT DIVISION
 SCHOOL OF HOUSING, BUILDING AND PLANNING
 UNIVERSITI SAINS MALAYSIA
 11800 USM, PENANG

Pengesahan Dekan



Tarikh: 11/2/11

PENYERAHAN TESIS MUTAKHIR

Bahagian A : Untuk diisi oleh Pelajar
(Sila tanda (√) dalam kotak yang disediakan)

Dekan
Institut Pengajian Siswazah
Universiti Sains Malaysia
11800 Pulau Pinang.

Penyerahan Tesis Mutakhir

Bersama-sama ini saya, MUHAMMAD NIZAM BIN YUSOF (nama) mengemukakan

Tesis mutakhir Sarjana / Doktor Falsafah bertajuk :

Tajuk

MAIN FACTORS CONTRIBUTING TO GROWTH OF
MALAYSIAN CONSTRUCTION COMPANIES

Terjemahan

FAKTOR-FAKTOR UTAMA YANG MENYUMBANG
KEPADA PERKEMBANGAN SYARIKAT PEMBINAAN
MALAYSIA

Sila nyatakan Bidang Penyelidikan bagi tujuan penyediaan Transkrip Akademik

Bidang Penyelidikan (BM) PENGURUSAN PEMBINAAN

Bidang Penyelidikan (BI) CONSTRUCTION MANAGEMENT

Disertakan :

- (i) 3 keping CD yang mengandungi tesis saya
- (ii) Borang Penamaan Skrol Ijazah

Saya juga ingin mengesahkan bahawa tesis tersebut telah disemak oleh Penyelia Utama saya dan Dekan*/Pengarah*, Pusat Pengajian/Pusat/Dekan IPS dan komen mereka adalah seperti yang tercatat pada Bahagian B dan C borang ini (muka surat 2).

Sekian, terima kasih.

[Signature]
(Tandatangan Pelajar)

11-2-2011

(Tarikh)

Untuk kegunaan Institut Pengajian Siswazah

Pengesahan Penerimaan oleh IPS

Nama Staf :

Tarikh :

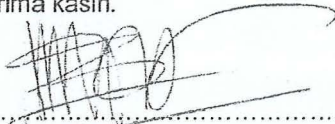
PENGESAHAN PEMBETULAN/PINDAAN TESIS OLEH PENYELIA UTAMA

Bahagian B : Untuk diisi oleh Penyelia Utama

Nama Penyelia PROF MADYA DR ABU HASSAN ABU BAKAR
Pusat Pengajian/Pusat PERUMAHAN BANGUNAN DAN PERANCANGAN
Saya telah menyemak tesis Encik/Puan/Cik MUHAMMAD NIDAM B. YUSOF

Saya ingin mengesahkan bahawa saya berpuashati dengan pembedulan/pindaan yang dilaksanakan oleh pelajar.

Sekian, terima kasih.


.....
(Tandatangan Penyelia Utama)

11-2-2011
.....
(Tarikh)

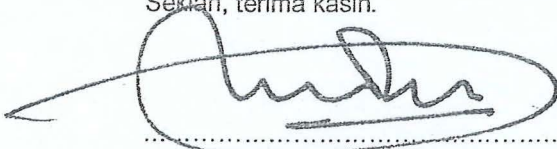
PENGESAHAN OLEH DEKAN/PENGARAH PUSAT PENGAJIAN/PUSAT

Bahagian C : Untuk diisi oleh Dekan/Pengarah, Pusat Pengajian/Pusat/IPS

Saya *Assoc. Prof. Dr. Mohd. Aslan Rafiq* Dekan/Pengarah,
Pusat Pengajian/Pusat *U. P. Perumahan, Bangunan dan Perancangan* ingin :-

- (i) Mengesahkan perakuan yang dibuat oleh Penyelia Utama pelajar ini seperti yang tercatat di Bahagian B di atas.
- (ii) Mengesahkan bahawa saya berpuashati dengan pembedulan/pindaan yang dilaksanakan oleh pelajar sebagaimana yang dipersetujui oleh Jemaah Pemeriksaan Tesis.

Sekian, terima kasih.


.....
(Tandatangan & Cop Dekan/Pengarah)

11/2/11
.....
(Tarikh)

Peraturan Pengesahan Tesis

*Sekiranya Dekan Pusat Pengajian merupakan Penyelia Utama atau Penyelia Bersama kepada pelajar, maka pengesahan di Bahagian C perlu dimajukan kepada Dekan, Institut Pengajian Siswazah.

RESEARCH UNIVERSITY GRANT

FINAL REPORT

TOWARDS DEVELOPMENT OF GROWTH INDEX FOR CONSTRUCTION COMPANIES IN MALAYSIA

PRINCIPAL RESEARCHER

Prof. Madya Dr. Abu Hassan Abu Bakar

CO-RESEARCHERS

Prof. Dato' Dr. Omar Osman

Dr. Ilias Said

Dr. Wira Mohd. Shafiei

Mr. Arman Abdul Razak

PUSAT PENGAJIAN PERUMAHAN, BANGUNAN DAN PERANCANGAN

UNIVERSITI SAINS MALAYSIA

FEBRUARY 2011

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ABSTRACT

Most firms in general have multiple objectives aimed to sustain and succeed in their business. In the short term, firms pay more attention to profit maximization. For the long term however, profit is no longer the prime focus because one of the objectives which may dominate the management of a firm is its growth. Growth can be construed as a change in assets, turnover, profits, number of employees and share price during the process of organizational change. The objectives of this paper are to establish factors determining growth of construction companies in Malaysia and also to establish which factors have greater impact on growth. Data collection for the purpose of this study was done through a questionnaire survey which was carried out involving large construction companies from grade G7 as classified under the Construction Industry Development Board of Malaysia (CIDB). Questionnaires were sent to 600 respondents via postal service and by hand. From 600 questionnaires disseminated, 102 of the questionnaires were returned, completed and useable. Data was analyzed by using relevance statistical methods such as frequency, relative important index (RII) and regression analysis to establish findings. Findings of this research show that the customer orientation factors was found to be the utmost important factor in determining growth of Malaysian construction companies. It was also found that management and product quality factor and human factor had a positive significant influence with growth performance both in term of growth in employment or turnover.

Keywords: Construction Companies, Firm Growth, Company Performance, Construction Industry

1. INTRODUCTION

1.1 Research Background

Malaysia is one of the most rapidly develop among developing countries. The construction industry is one of the major industries that contribute to Malaysia's economic growth. It represents about 3-5% of the Malaysia's Gross Domestic Product (GDP) and provided employment for about 10% of the total labour force. In Malaysia, construction sector can be divided into four broad categories: office; retail; residential and infrastructure. This industry is a dynamic in nature. Its environment has become more dynamic due to the increasing uncertainties in technology, budgets, and development process (Chan & Chan, 2004). According to Sanvido et. al (1992) a building project is completed as a result of a combination of many events and interactions, planned or unplanned, over the life of a facility, with changing participants and process in a constantly changing environment.

Change is a continuous process; as such, the firm must be in position to respond continuously to changing environmental conditions. Not all firms are equally able to change (Pettus, 2003). Traditional economic theory assumption that firms will pursue an objective of profit maximization, however Bridge and Dodds (1978) stated that one objective which may dominate the management of firm is growth or expansion of the firm through time. This agreed by Rimmer, (1988) noted that profit is importance for promoting and measuring growth, but profit maximization is not of prime importance because it is a short term strategy. Investment that promotes growth will eventually in the long term gain higher return.

Growth involves four considerations, including the type of growth (intensive, integrated or diversified); its geographical focus; how it will take place; and how quickly it will occur (Higgins & Vincze, 1993). According to Penrose (1959) growth does not take place automatically, but must be planned strategically and implemented effectively by managers who have firm-specific experiences internal to the firm. There are several ways to achieve growth. According to Greenley (1989) the growth may be realized by developing internal resources and personnel, or by seeking external involvement through acquisition, merger, joint venture and other strategic alliance. It also can be achieved by enhancing efficiency, improving financial control and increasing turnover (Ofori & Chan, 2000)

In most countries, the government plays a major role in promoting the growth and development of all sectors including construction industry. According to Stern et al (2005) good governance has been widely recognized as fundamental to growth and development. After surveying more than a century of comparative development experience in forty developing countries, Reynolds (1983) concludes that one of the most important explanatory variables of development is political organization and the administrative competence of government. It also agreed by Strassmann and Wells (1988) noted that construction contractors throughout the world tend to see government as an agency for promoting their interests – opening and protecting market, facility currency transfers, arranging insurance and extending loans.

Malaysia's government also plays an active role in promoting the growth and development of construction industry. In particular, it has allocated greatly resource to nurture the growth of Bumiputera construction companies.

The assumption of the traditional economic theory is that firms will pursue an objective of profit maximization. However, according to Weinzimmer (2000), organizations can benefit from growth in many ways, including greater efficiencies through economies of scale, increased power, the ability to withstand environmental change, increased profits and increased prestige for organizational members. As noted by Bonaccorsi and Giannangeli (2008), growth does not come at zero cost for firms. A firm's decision to grow is the essentially the result of an assessment regarding the profitability of a new market opportunity. Hisatomi (1990) emphasize that efficiency, effectiveness, reputation as well as increasing market share is important for the survival of a firm.

Contracting is a very complex business, yet it is relatively easy to be registered as a contractor in Malaysia. The Construction Industry Development Board of Malaysia or CIDB (2006) noted that low barriers to entry into the industry have swollen the ranks of contractors with many small scale companies registered as grade G1 contractors under the CIDB grade of registration with G1 being the entry level grade. This grading of contractors, from G1 to G7, is also directly commensurate to the magnitude of projects the contractors may be involved in. Currently, there are approximately 64,000 contractors registered with CIDB, out of which approximately 57% are G1 grade contractors (CIDB, 2008). According to Ghani (1988), the failure rate and bankruptcies

in construction companies in Malaysia are high.

During the economic crisis of the 1980s and 1990s, many Malaysian construction companies and contractors especially those that were Bumiputera (comprising of individuals of Malay and/or indigenous descent) owned, could not successfully execute their construction projects and had to diversify into other business activities. Contractors of the lower grades suffered more hardship than their higher counterparts, which led them to total bankruptcy (Ghani, 1988).

In his study, Abu Bakar (1993), found that most construction companies in Malaysia started as small, local market companies during the 1970-1980s period of construction boom. They expanded at different rates and levels of success and growth. About a quarter failed to progress beyond the local level, and one-third made the local-regional-national transition in 3-5 years. In recent years, with the completion of 'mega-projects' and subsequent economic prudence, local projects were insufficient to sustain the 70,000 odd contractors. Thus, many of the lower ranking contractors have left the industry (CIDB, 2006). This leads to the question of why is there inconsistency in growth among construction companies within the Malaysian construction industry.

1.2. Research Questions

- i) What are the factors that determine growth for the construction companies in Malaysia?

- ii) What are the key factors that determine growth for the construction companies in Malaysia?
- iii) What is the growth path for the construction companies in Malaysia?
- iv) What is the growth index for construction companies in Malaysia?

1.3. Research Objectives

There objectives of this research are:

- i) to identify factors determining growth of construction companies in Malaysia;
- ii) to rank the factors determining growth according to their importance;
- iii) to establish their path of growth;
- iv) to establish growth index for construction companies in Malaysia

2. LITERATURE REVIEW

2.1 Firm Growth

In her seminal book, Penrose (1959) characterizes the phenomenon of growth in firms and companies as follows:

“The term ‘growth’ is used in ordinary discourse with two different connotations. It sometimes denotes merely increase in amount; for example, when one speaks of growth in output, export, and sales. At other times, however, it is used in its primary meaning implying an increase in size or improvement in quality as a result of a process of development, akin to natural biological processes in which an interacting series of internal changes leads to increases in size accompanied by changes in the

characteristics of the growing object”.

Penrose's original contribution in 1959 shaped the direction of growth. From a totally 'inside-out' perspective, firm's growth is now conceived as the endogenous outcome of perennial intra-firm knowledge creation (Volpe and Biferali, 2008). Firm growth demands the ability to master technologies, engender labor skill, organize the production process as well as efficiently serve a market. A firm will exploit a growth opportunity as long as the benefits outweigh the costs, given the level of ability with which the firm was endowed at start-up (Bonaccorsi and Giannangeli, 2008).

According to Skrt and Antoncic (2004), in order for the firm to grow, the entrepreneur needs to formulate an exact, clear mission and vision for his or her firm. Strategic planning can be considered important in driving firm growth. Precisely formulating visions and strategy, incorporating the elements of internationalization and networking in the firm vision, focusing on growth, profit, and market, performing analyses of market and competition, accurately formulating generic business strategies and achieving company wide support for strategies can all be beneficial for the growth of smaller firms.

Weinzimmer (2000) has concluded that many researchers have examined the influence of strategy factors on organizational growth; the relationship between characteristics of top management and organizational growth; strategy and industry characteristics on organizational growth; and industry and top management characteristics on organizational growth. In his conclusion, three sets of determinants had been identified;

namely, industry attributes, organization strategies and top management characteristics.

Moreover, according to Schneider *et al.* (2007), it has been suggested in the literature that employee development is especially important for start-up companies to achieve organizational performance and in particular high growth. Bonaccorsi and Giannangeli (2008) have concluded that the relationship between initial size and growth is more complex. By specifically, considering very small firms in the sample, there is evidence of a positive relationship, suggesting that there is a minimum size below which no growth whatsoever occurs. Entrepreneurs' competencies may be a triggering factor only if they are associated with larger initial size. True growth is more than adding something to the company – people, office space, sales force (Recklies, 2001). Firm growth is a multidimensional construct that can include increases (1) in asset and employment size, (2) in sales volume and profitability, as well as (3) in the variety of business functions, products and services.

2.2. Measures of Growth

The field of measurement is required and needs to be recognized in order to ensure the quality of almost any industry; to identify factors affecting quality; and to measure growth (Rossi *et al.*, 2002). Growth can be seen as a very important measurement of firm performance. According to Baum *et al.* (2001), firm growth is frequently equated with success. Rossi *et al.* (2002) added that measurement of growth is somehow at a turning point nowadays. The total quality paradigm is a good reference as it essentially means active participation of all involved subjects within an organization.

Firms size is measured in terms of total number of workers, including employees, founders, and contract workers (Bonaccorsi and Giannangeli, 2008). A firm's growth can be measured in terms of inputs (investment funds, employees), in terms of the value of the firm (assets, market capitalization, economic value added elements) or outputs (sales, revenues, profit). Each of the measures illustrates some feature of growth and each is subject to limitations as a growth indicator. Input, output and value growth in a firm may not be aligned, and so diverse growth measures should not be expected to correlate. The relationship between growth, size and age of firms is very sensitive with respect to the definition of growth and size (Stam *et al.*, 2006).

2.3. Factors Contributing To Firms' Growth

There are several factors that contribute to firms' growth. It differs between small and large firms and also may vary from country to country, depending on their economic, geographical and cultural differences. In the study on small business growth, Morrison *et al.* (2003) noted that human factor was considered to be the overwhelming force that determines whether a business will prosper or not. Hillebrant and Cannon (1990) identify management as the most important determinant of the capacity as well as capability of construction firms. They suggest that construction is particularly management-intensive because of the large number of decisions which require to be taken from day to day, on site as well as within the organization. Based on the study of small firms in the island nations of the South Pacific, Yusuf (1995) found that good management, access to financing, personal qualities of the entrepreneur, and

satisfactory government support were the most important factors to success.

Abu Bakar (1993) examined the factors affecting growth of construction companies in Malaysia and found that good financial backing, good cash flow management, technical expertise and good company management as some of the key factors that contribute to the success of companies. In the manufacturing industry, Wjewardena and De Zoysa (2005) have identified six principal factors that are perceived to be major contributors to the success or growth of manufacturing firms in Sri Lanka. These factors, in their order of importance, are customer orientation, product quality, efficient management, supportive environment, capital accessibility and marketing strategy. Meanwhile CIDB (2006) has identified 8 critical success factors that are pertinent for a successful business in the construction industry, which include productivity, quality, human resources, innovation, environment friendly practices, knowledge, industry sustainability and professionalism.

Based on the literature review relating to firm growth, twenty-seven growth factors that were listed by researchers have been selected. These factors were used for the purpose of establishing growth factors for construction companies in Malaysia. A detailed analysis of growth factors is presented in Table 1. The analysis revealed that a majority of authors agreed that good company management, skilled workers, maintaining high quality of product, market specialization and good financial backing are deemed as important growth factors to the company. From Table 1, it can also be seen that most of the authors list joint venture, good cash flow management and innovation to

be considered as firm growth factors as well.

Table 1: Variable of Growth Factors used by Several Authors

Growth Factors*	Authors								
	Porter (1980)	Abu Bakar (1993)	Ofori & Chan (2000)	Ligthelm (2004)	Marmet (2004)	Wjewardena & De Zoysa (2005)	CIDB (2006)	Heffernal (2007)	Phaladi & Thwala (2008)
1	x	x	X		x				
2		x		x		x	x	x	x
3	x	x		x		x	x	x	x
4	x	x	X						
5	x	x		x	x	x	x		x
6	x	x	X		x	x	x	x	
7						x			
8		x					x		x
9		x		x	x	x		x	x
10	x	x				x			
11	x	x				x			x
12		x							
13				x	x		x		
14					x				
15		x							x
16		x	x		x		x		
17					x			x	
18			x				x		x
19			x				x		
20						x		x	
21						x			
22						x			
23			x				x	x	
24						x			
25						x			
26						x			
27						x			

*Note: 1- Joint Venture; 2- Market Specialization; 3- Good Company management; 4- Diversify Expertise; 5- Skilled Workers; 6- Maintaining High Quality of Products; 7- Use of new technology and automation 8- Technical Expertise; 9- Availability of capital; 10- Internal Efficiency; 11- Good Cash Flow Management; 12- Effective Organization Structure; 13- Sufficient Knowledge and Experience; 14- Good Team Members; 15- Good Site Management; 16- Innovation; 17- Research & Development; 18- Upgrading and educating members; 19- Safety and Security; 20- Commitment to Customers'

Satisfaction; 21- Good Relations with Customers; 22- Competitive prices of products/services 23- Technological Edge ; 24- Availability of bank loans & other credit ; 25- Open economic policy of the government; 26- Political stability & peaceful environment; 27- Government assistance / tax incentives

2.4 Growth Path

There are several alternatives of growth path that a firm can choose. Construction companies have several possible growth paths to follow in their effort to develop. Studies show that the appropriate approach depends on the features of the company and the prevailing economic conditions, and support measures and incentives.

Gonzalez-Vega et. al. (1997) mentioned that managing growth requires finding the proper mix between depth and breadth to balance outreach with viability. According to Hawkins (1987), the proper way for a business to expand is by releasing growth. The worst way to grow is to push grow. Every business has a natural rate of growth. If that rate is not reached, a business can shrivel. If it is surpassed, the business struggles to keep pace (Churchill, 1997).

As an entirety, it can be said that growth path entail growth strategies such as diversification, development, penetration, internationalization, mergers, and acquisition especially in the areas of market and product. A dominant path of growth is preferred to a mix of growth strategies (Hashai et. al., 2006). Growth changes the character of the business. It tends to breed the need for more growth. But rapid expansions are often followed by rapid declines (Churchill, 1997).

According to Flanagan (1990), the market growth trend for construction firms is from local - national - international - multinational - global. Abu Bakar (1993) had looks at the growth trend of local contractors within the national market boundary. He found that most of contractors started as small and local market companies during the 1970-1980s construction booms. Between 3-5 years, about a quarter failed to progress beyond the local level and one-third made the local-regional-national.

Ofori and Chan (2000) studied the growth paths of construction enterprises in Singapore and found that most local construction companies have grown by working at home, either as main contractors or as specialist subcontractors and most of large contractors grew by diversifying rather than construction work. Ofori and Chan (2000) noted that diversification attracts the most attention compared to others growth path. Finally according to Edna McConnell Clark Foundation (2005), while the answer were many and varied, two trends emerged; the interplay between opportunity and strategy as the organizations grew; and the need for multi-site organization to balance – and rebalance – the degree of local autonomy and central control.

2.5 Growth Index

Indices are widely used in performance evaluation and have proved useful in locating weaknesses in overall design and system (Bell and Morse, 1999). The Growth Index is a measure having value (from 0-1) of success of a construction companies. It used to support the argument for growth of the construction companies. Index for growth is established by combining indexes of all factors that contribute to the growth of company

at any particular time (Abu Bakar, 1993).

For example:

$$GIt = 1/3 (1/3(MCt) + 1/3(Pet) + 1/3(TOt))$$

Where GIt is the Growth Index at t time;

MCt is the position of the market coverage of the construction companies at t time;

Pet is the position of the number of the permanent employee of the construction companies at t time;

TOt is the position of annual turnover of the construction companies at t time.

3. THEORETICAL FRAMEWORK

The main variable of interest to this study is the dependent variable of growth performance which is measured by the annual turnover and the number of permanent employees. The independent variables that may influence the dependent variable are the factors that contribute to the firm growth. The relationship between the dependent and independent variables is as shown in figure 3 below:

4. RESEARCH METHODOLOGY

For the purpose of data collection, a questionnaire survey was conducted among the large sized construction companies registered as grade G7 contractors under CIDB classification. This questionnaire was divided into four main sections that covered respondents' background, firm's performance, firm's growth factors and firm's growth path (see Appendix A). Questionnaires were sent to 600 randomly selected respondents via postal service and by hand out of a total population of 3,000 G7 contractors. From 600 questionnaires disseminated, 102 (17% response rate) of the questionnaires were returned, completed and useable. Data was analyzed by using relevance statistical methods such as frequency and regression analysis to establish findings. Besides this, the collected data was also analyzed using the relative importance index (RII) of the various factors that contribute to firm growth factors. The outline of the research methodology can be summarized as in Figure 4.

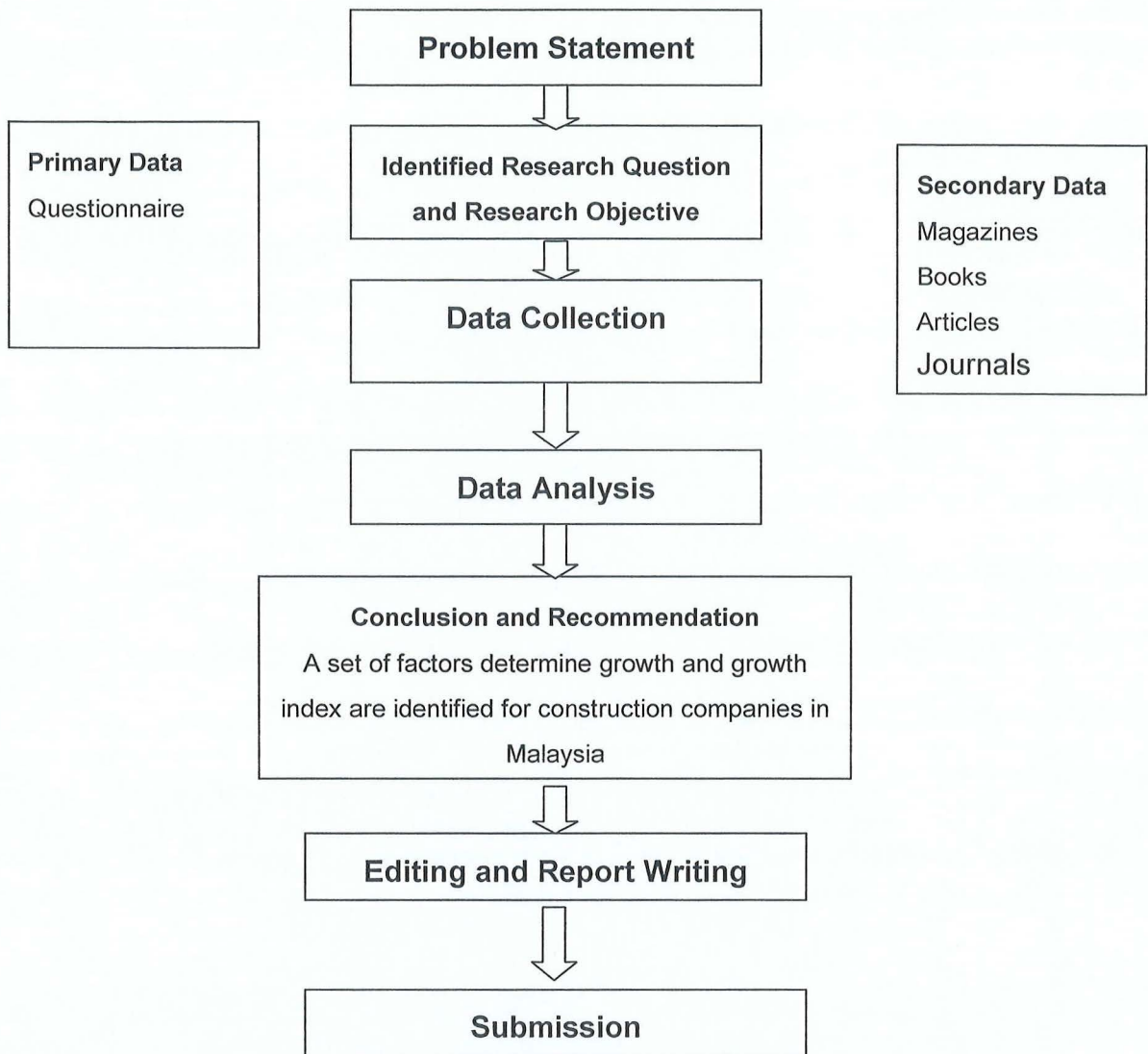
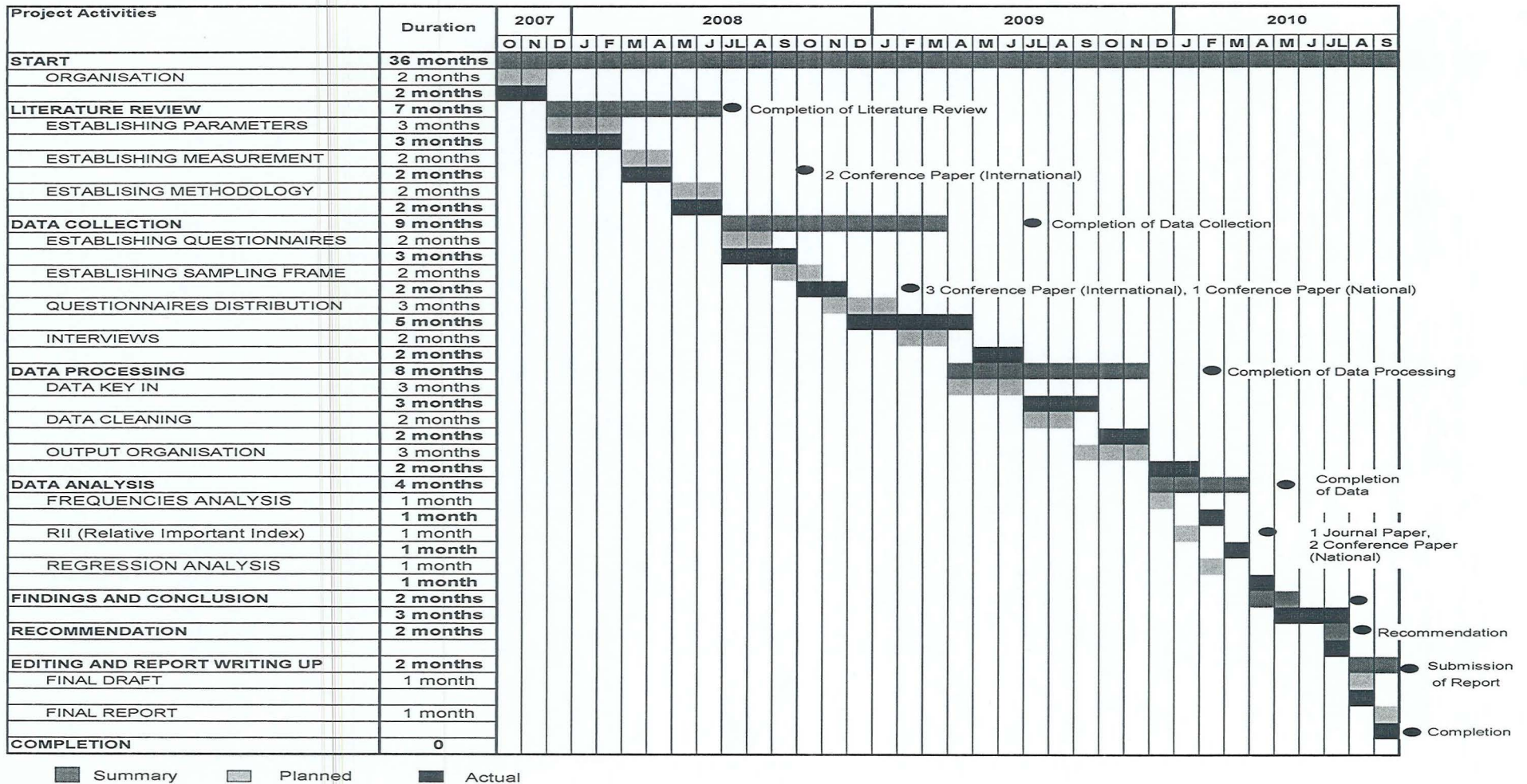


Figure 2: Methodology of research

5. GANTT CHART (PLANNED VERSUS ACTUAL)



6. RESEARCH FINDINGS

There are several findings that have been found through this study. Good management of a company was found to be the utmost important factor that contributes to the growth of construction companies. These factors are management related and it is in line with previous studies (Hillebrant,1990; Abu Bakar,1993; Yusuf,1995) which found that good management of companies were ranked as the main factors that contribute to the growth of companies. The top ten most important factors contributing to growth of construction companies are: good company management; good cash flow management; sufficient knowledge and experience; good team members; technical expertise; good site management; commitment to customer satisfaction; availability of capital; availability of skilled workers; and good relations with clients. These factors should be aptly given more attention by construction companies that aim to achieve growth in their firms.

For main categories, it shows that customer orientation was found to be the utmost important factor that influences firms' growth. While, management factor was ranked 2 as the important factor that influences firms' growth. The list of main factors according to ranking of important are shown as below:

Table 4.7.1: List of main factors according to ranking of important

Factors	RII (Average)	Rank
Customer Orientation	0.8601	1
Management Factor	0.8546	2
Human Factor	0.8473	3
Environmental Factor	0.7976	4
Product Quality	0.78112	5

As been mentioned before, firm growth can be measured by several of indicators such as profit, sales, market coverage, employment and many more other factors. However, this study used two indicators, namely, number of permanent employees and annual turnover as the basis for growth measurement. From the analysis, management and product quality, and human factor had a great relation with employment growth. The factor of management and product quality considered to be the highest significant factors that determining the employment growth. Similar with the result in employment growth, it also found that management and product quality factor is the most significant factor towards turnover growth. The second highest significant factor with turnover growth is human factor, followed by customer orientation.

In term of growth path, it was found that most of large construction companies in Malaysia stated as small contractors and began their operations within the local market. It also was found that most of construction companies grew systematically from a local market coverage to a regional one and then to a national market.

7. PROJECT ACHIEVEMENT

7.1 Publication

a) Conferences

No.	International
1.	Abu Bakar, A.H., Ilias Said, Mohd Wira Mohd Shafie, Arman Abdul Razak and Mohamad Nizam Yusof (2008), Growth Factors for Construction Companies in Malaysia, In Proceeding in International Conference on Built Environment of Developing Countries, Sustainable Built Environment: Bridging Theory and Practice, (ICBEDC 2008), 3-4 December 2008, USM, ISBN 987-983-3986-40-8, pp. 1242-1258.
2.	Abu Bakar, A.H., Ilias Said, Arman Abdul Razak and Mohamad Nizam Yusof (2008), The Implementation of Strategic Management Practices in The Malaysian Construction Industry, in the Proceeding of International Conference on Economic and Management Perspectives (ICEMP'08), 17-19 October 2008, Selamis Bay Conti Hotel, Northern Cyprus.
3.	Mohamad Nizam Yusof, Indah Yunitasari and Abu Hassan Abu Bakar, (2008), Strategic Management in Construction Industry: Case Study in Indonesia, In Proceeding of 7 th Annual Conference Management in Construction Research Association, (MiCRA 20008), 18-19 June 2008, International Islamic University, pp. 275-295.
4.	Mohamad Nizam Yusof, Indah Yunitasari and Abu Bakar, A.H. (2008), The Practice of Strategic Management in Medan Indonesia, in Proceeding of Asea Pacific Conference on Management of Technology and Technology Entrepreneurship 2008, 29-30 October, 2008, Hotel Equatorial Melaka, Organized by Universiti Teknologi Malaysia.
5.	Mohamad Nizam Yusof, Ira Modifa and Abu Hassan Abu Bakar, (2008), Improving Construction Project Performance Through Project Manager : An Indonesia Experience, In Proceeding in International Conference on Built Environment of Developing Countries, Sustainable Built Environment: Bridging Theory and Practice, (ICBEDC 2008), 3-4 December 2008, USM, ISBN 987-983-3986-40-8, pp. 1001-1015.

6.	Mohamad Nizam Yusof, Ira Modifa and Abu Hassan Abu Bakar (2008), The Role of Project Manager in Improving Construction Project Performance: Case Study in Medan, in the Proceeding of International Conference on Project Management (ICoPM 2008), 18-20 November 2008, University Malaya, pp. 540-549.
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No.	National
1.	Mohamad Nizam Yusof, Indah Yunitasari and Abu Hassan Abu Bakar, (2008), Strategic Management in Construction Industry: Case Study in Indonesia, In Proceeding of 7 th Annual Conference Management in Construction Research Association, (MiCRA 20008), 18-19 June 2008, International Islamic University, pp. 275-295.

b) Journal Paper

No.	International
1.	Abu Bakar, A.H., Arman Abdul Razak, Mohamad Nizam, Y. and Nurkhuraishah Abd. Karim (2010). Factors Determining Growth of Companies: A Study on Construction Companies in Malaysia. <i>African Journal of Business Management</i> . (ISI – IF 1.1) [Accepted].
2.	Abu Bakar, A.H., Arman Abdul Razak and Mohamad Nizam Yusof (2010), The Growth Path of Large Construction Companies in Malaysia [Manuscript Preparation]
3.	Abu Bakar, A.H., Arman Abdul Razak and Mohamad Nizam Yusof (2010), The Growth Index for Construction Companies in Malaysia [Manuscript Preparation]

7.2 Human Capital Development

Human Capital	Number
PhD Student	1
MSc Student	1
Temporary Research Assistant	1
Total	3

8. EXPENDITURE

No	VOT	Amount Received (RM)	Amount Spent (RM)	% Spent
	V11000	103,000.00	94,119.94	
	V15000	0.00	2,304.08	
	V21000	23,000.00	27678.09	
	V23000	2,500.00	300.00	
	V24000	4,500.00	0.00	
	V26000	2,500.00	0.00	
	V27000	6,200.00	14,028.33	
	V28000	2,500.00	220.00	
	V29000	5,800.00	6,845.00	
	V35000	15,000.00	14,136.00	
	V41000	0.00	5,295.00	
	V52000	0.00	30.00	
TOTAL		165,000.00	164,953.44	99.9%

Balance: **RM 43.56**

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APPENDIX

Factors Determining Growth of Companies: A Study on Construction Companies in Malaysia

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ABSTRACT: Most firms in general have multiple objectives aimed to sustain and succeed in their business. In the short term, firms pay more attention to profit maximization. For the long term however, profit is no longer the prime focus because one of the objectives which may dominate the management of a firm is its growth. The objectives of this paper are to establish factors determining growth of construction companies in Malaysia and also to establish which factors have greater impact on growth. Data collection for the purpose of this study was done through a questionnaire survey which was carried out involving large construction companies from grade G7 as classified under the Construction Industry Development Board of Malaysia (CIDB). Questionnaires were sent to 600 respondents via postal service and by hand. From 600 questionnaires disseminated, 102 of the questionnaires were returned, completed and useable. Data was analyzed by using relevance statistical methods such as frequency, relative important index (RII) and regression analysis to establish findings. Findings of this research show that the good management of a company was found to be the utmost important factor that contributes to the growth of construction companies. Effective organization structure, use of new technology and automation as well as commitment to customers' satisfaction had a good correlation with employment growth. It was also found that market specialization; good company management, availability of bank loans and other credit facilities and use of new technology as well as automation are significant factors towards growth in turnover.

Keywords: Construction companies, growth, Malaysia

INTRODUCTION

The construction industry is dynamic in nature and its environment has become more dynamic due to increasing uncertainties in technology, budgets and development process (Chan and Chan, 2004). As a complex industry comprising a wide array of firms, discipline and practices, change to the organization and activities of the sector might be beneficial to some, but disadvantageous for others (Harty et al., 2006). Change is a continuous process and as such, the firm must be in a position to respond continuously to changing environmental conditions. Not all firms are equally able to change (Pettus, 2003). In the face of these changes, it is increasingly difficult to manage the construction business in today's environment (Betts and Ofori, 1992).

Churchill (1997) accentuates the fact that businesses must understand the pressure to grow so that they can plan and prepare for it, choose the right timing for expected major changes in size and control the speed of growth. Recklies (2001) also added that growth has to be part of the corporate development. It has to take into account internal resources and external forces, and, ideally, it is a planned part of the corporate strategy.

The assumption of the traditional economic theory is that firms will pursue an objective of profit maximization. However, according to Weinzimmer (2000), organizations can benefit from growth in many ways, including greater efficiencies through economies of scale, increased power, the ability to withstand environmental change, increased profits and increased prestige for organizational members. As noted by Bonaccorsi and Giannangeli (2008), growth does not come

at zero cost for firms. A firm's decision to grow is the essentially the result of an assessment regarding the profitability of a new market opportunity. Hisatomi (1990) emphasize that efficiency, effectiveness, reputation as well as increasing market share is important for the survival of a firm.

Contracting is a very complex business, yet it is relatively easy to be registered as a contractor in Malaysia. The Construction Industry Development Board of Malaysia or CIDB (2006) noted that low barriers to entry into the industry have swollen the ranks of contractors with many small scale companies registered as grade G1 contractors under the CIDB grade of registration with G1 being the entry level grade. This grading of contractors, from G1 to G7, is also directly commensurate to the magnitude of projects the contractors may be involved in. Currently, there are approximately 64,000 contractors registered with CIDB, out of which approximately 57% are G1 grade contractors (CIDB, 2008). According to Ghani (1988), the failure rate and bankruptcies in construction companies in Malaysia are high.

During the economic crisis of the 1980s and 1990s, many Malaysian construction companies and contractors especially those that were Bumiputera (comprising of individuals of Malay and/or indigenous descent) owned, could not successfully execute their construction projects and had to diversify into other business activities. Contractors of the lower grades suffered more hardship than their higher counterparts, which led them to total bankruptcy (Ghani, 1988).

In his study, Abu Bakar (1993), found that most construction companies in Malaysia started as small, local market companies during the 1970 - 1980s period of construction boom. They expanded at different rates and levels of success and growth. About a quarter failed to progress beyond the local level, and one-third made the local-regional-national transition in 3 - 5 years. In recent years, with the completion of 'mega-projects' and subsequent economic prudence, local projects were insufficient to sustain the 70,000 odd contractors. Thus, many of the lower ranking contractors have left the industry (CIDB, 2006). This leads to the question of why is there inconsistency in growth among construction companies within the Malaysian construction industry.

The objectives of this paper are to establish factors determining growth of construction companies in Malaysia and also to seek which factors play a more important role in determining growth.

FIRM GROWTH

In her seminal book, Penrose (1959) characterizes the phenomenon of growth in firms and companies as follows:

"The term 'growth' is used in ordinary discourse with two different connotations. It sometimes denotes merely increase in amount; for example, when one speaks of growth in output, export, and sales. At other times, however, it is used in its primary meaning implying an increase in size or improvement in quality as a result of a process of development, akin to natural biological processes in which an interacting series of internal changes leads to increases in size accompanied by changes in the characteristics of the growing object".

Penrose's original contribution in 1959 shaped the direction of growth. From a totally 'inside-out' perspective, firm's growth is now conceived as the endogenous outcome of perennial intra-firm knowledge creation (Volpe and Biferali, 2008). Firm growth demands the ability to master technologies, engender labor skill, organize the production process as well as efficiently serve a market. A firm will exploit a growth opportunity as long as the benefits outweigh the costs, given the level of ability with which the firm was endowed at start-up (Bonaccorsi and Giannangeli, 2008).

According to Skrt and Antoncic (2004), in order for the firm to grow, the entrepreneur needs to formulate an exact, clear mission and vision for his or her firm. Strategic planning can be considered important in driving firm growth. Precisely formulating visions and strategy, incorporating the elements of internationalization and networking in the firm vision, focusing on

growth, profit, and market, performing analyses of market and competition, accurately formulating generic business strategies and achieving company wide support for strategies can all be beneficial for the growth of smaller firms.

Weinzimmer (2000) has concluded that many researchers have examined the influence of strategy factors on organizational growth; the relationship between characteristics of top management and organizational growth; strategy and industry characteristics on organizational growth; and industry and top management characteristics on organizational growth. In his conclusion, three sets of determinants had been identified; namely, industry attributes, organization strategies and top management characteristics.

Moreover, according to Schneider et al. (2007), it has been suggested in the literature that employee development is especially important for start-up companies to achieve organizational performance and in particular high growth. Bonaccorsi and Giannangeli (2008) have concluded that the relationship between initial size and growth is more complex. By specifically, considering very small firms in the sample, there is evidence of a positive relationship, suggesting that there is a minimum size below which no growth whatsoever occurs. Entrepreneurs' competencies may be a triggering factor only if they are associated with larger initial size. True growth is more than adding something to the company – people, office space, sales force (Recklies, 2001). Firm growth is a multidimensional construct that can include increases (1) in asset and employment size, (2) in sales volume and profitability, as well as (3) in the variety of business functions, products and services.

MEASURES OF GROWTH

The field of measurement is required and needs to be recognized in order to ensure the quality of almost any industry; to identify factors affecting quality; and to measure growth (Rossi et al., 2002). Growth can be seen as a very important measurement of firm performance. According to Baum et al. (2001), firm growth is frequently equated with success. Rossi et al. (2002) added that measurement of growth is somehow at a turning point nowadays. The total quality paradigm is a good reference as it essentially means active participation of all involved subjects within an organization.

Firms size is measured in terms of total number of workers, including employees, founders, and contract workers (Bonaccorsi and Giannangeli, 2008). A firm's growth can be measured in terms of inputs (investment funds, employees), in terms of the value of the firm (assets, market capitalization, economic value added elements) or outputs (sales, revenues, profit). Each of the measures illustrates some feature of growth and each is subject to limitations as a growth indicator. Input, output and value growth in a firm may not be aligned, and so diverse growth measures should not be expected to correlate. The relationship between growth, size and age of firms is very sensitive with respect to the definition of growth and size (Stam et al., 2006).

FACTORS CONTRIBUTING TO FIRMS' GROWTH

There are several factors that contribute to firms' growth. It differs between small and large firms and also may vary from country to country, depending on their economic, geographical and cultural differences. In the study on small business growth, Morrison et al. (2003) noted that human factor was considered to be the overwhelming force that determines whether a business will prosper or not. Hillebrant and Cannon (1990) identify management as the most important determinant of the capacity as well as capability of construction firms. They suggest that construction is particularly management-intensive because of the large number of decisions which require to be taken from day to day, on site as well as within the organization. Based on the study of small firms in the island nations of the South Pacific, Yusuf (1995) found that good management, access to financing, personal qualities of the entrepreneur, and satisfactory government support were the most important factors to success.

Abu Bakar (1993) examined the factors affecting growth of construction companies in Malaysia and found that good financial backing; good cash flow management, technical expertise

and good company management as some of the key factors that contribute to the success of companies. In the manufacturing industry, Wjewardena and De Zoysa (2005) have identified six principal factors that are perceived to be major contributors to the success or growth of manufacturing firms in Sri Lanka. These factors, in their order of importance, are customer orientation, product quality, efficient management, supportive environment, capital accessibility and marketing strategy. Meanwhile CIDB (2006) has identified 8 critical success factors that are pertinent for a successful business in the construction industry, which include productivity, quality, human resources, innovation, environment friendly practices, knowledge, industry sustainability and professionalism.

ANALYSIS OF GROWTH FACTORS

Based on the literature review relating to firm growth, twenty-seven growth factors that were listed by researchers have been selected. These factors were used for the purpose of establishing growth factors for construction companies in Malaysia. A detailed analysis of growth factors is presented in Table 1. The analysis revealed that a majority of authors agreed that good company management, skilled workers, maintaining high quality of product, market specialization and good financial backing are deemed as important growth factors to the company. From Table 1, it can also be seen that most of the authors list joint venture, good cash flow management and innovation to be considered as firm growth factors as well.

Table 1. Variable of growth factors used by several authors

Growth Factors*	Authors								
	Porter (1980)	Abu Bakar (1993)	Ofori & Chan (2000)	Ligthelm (2004)	Marmet (2004)	Wjewardena & De Zoysa (2005)	CIDB (2006)	Heffernal (2007)	Phaladi & Thwala (2008)
1	x	x	x		x				
2		x		x		x	x	x	x
3	x	x		x		x	x	x	x
4	x	x	x						
5	x	x		x	x	x	x		x
6	x	x	x		x	x	x	x	
7						x			
8		x					x		x
9		x		x	x	x		x	x
10	x	x				x			
11	x	x				x			x
12		x							
13				x	x		x		
14					x				
15		x							x
16		x	x		x		x		
17					x			x	
18			x				x		x
19			x				x		
20						x		x	
21						x			
22						x			
23			x				x	x	
24						x			
25						x			
26						x			
27						x			

*Note: 1- Joint Venture; 2- Market Specialization; 3- Good Company management; 4- Diversify Expertise; 5- Skilled Workers; 6- Maintaining High Quality of Products; 7- Use of new technology

and automation 8- Technical Expertise; 9- Availability of capital; 10- Internal Efficiency; 11- Good Cash Flow Management; 12- Effective Organization Structure; 13- Sufficient Knowledge and Experience; 14- Good Team Members; 15- Good Site Management; 16- Innovation; 17- Research and Development; 18- Upgrading and educating members; 19- Safety and Security; 20- Commitment to Customers' Satisfaction; 21- Good Relations with Customers; 22- Competitive prices of products/services 23- Technological Edge ; 24- Availability of bank loans and other credit ; 25- Open economic policy of the government; 26- Political stability and peaceful environment; 27- Government assistance / tax incentives

RESEARCH FRAMEWORK

The main variable of interest to this study is the dependent variable of growth performance which is measured by the annual turnover and the number of permanent employees. The independent variables that may influence the dependent variable are the factors that contribute to the firm growth. The relationship between the dependent and independent variables is as shown in Figure 1 below:

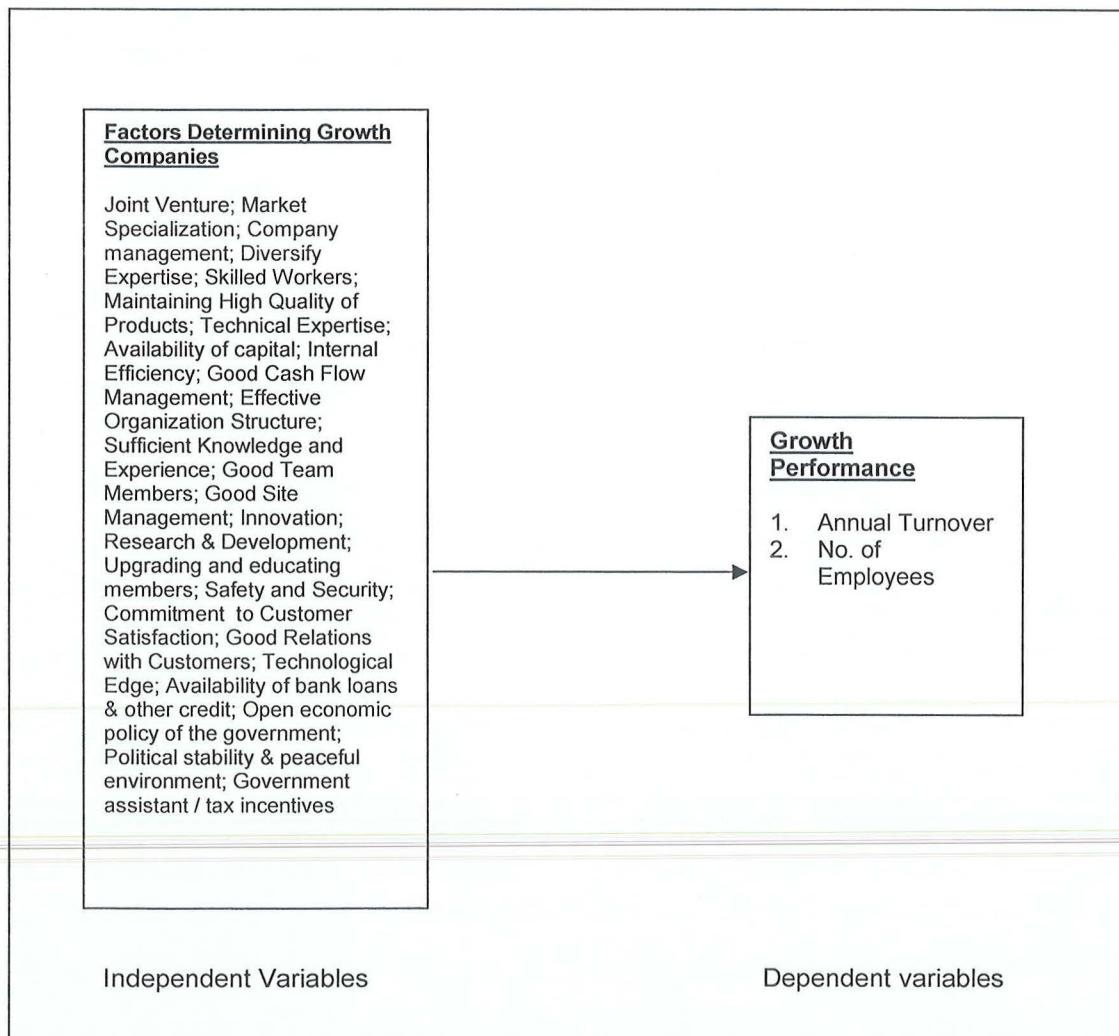


Figure 1. Research model of firm growth.

METHODOLOGY

For the purpose of data collection, a questionnaire survey was conducted among the large sized construction companies registered as grade G7 contractors under CIDB classification. This questionnaire was divided into four main sections that covered respondents' background, firm's background, firm's performance and firm's growth factors. Questionnaires were sent to 600 randomly selected respondents via postal service and by hand out of a total population of 3,000 G7 contractors. From 600 questionnaires disseminated, 102 (17% response rate) of the questionnaires were returned, completed and useable. Data was analyzed by using relevance statistical methods such as frequency and regression analysis to establish findings. Besides this, the collected data was also analyzed using the relative importance index (RII) of the various factors that contribute to firm growth factors (Tam et al., 2000).

As previously mentioned, the dependent variable in this study is firm growth. Firm growth can be measured by several attributes such as turnover/sales, employment, assets, market shares, and profits. However, in the context of this study, growth in employment and turnover is used as an indicator of firm growth. In order to carry out regression analysis, the dependent variable was split into high growth (increase more than 50%), low growth (increase below than 50%), unchanged and declining.

ANALYSIS

Respondent's Background

The respondent's position in the firm is important in acquiring the desired feedback. From the analysis, the job designations of respondents were mainly managing directors representing 27.2%. Engineer/quantity surveyors contributed the second highest percentage of 25.5%. Other positions of the respondents were project managers (15.7%), general managers (10.8%) and others, contributing to 6.9%. In terms of status of the firm of the respondents, 80.4% were from private limited companies, 16.7% came from partnership companies and only 2% were from cooperation/consortium based companies. In terms of value of the respondents' firm's annual work, 26.5% of the respondents were involved in projects worth between RM11 – RM20 million, 24.5% of the respondents dealt with projects worth more than RM41 million, 16.7% of the respondents from projects worth between RM 5 million – RM 10 million and 15.7% of the respondents were handling projects worth between RM 31 million - RM 40 million. In terms of firms' age, 52.4% of the respondents were from firms that were set up more than 10 years ago. Firms founded between 5 – 10 years constituted 38.1%, followed by 7.1% for firms established between 3 – 5 years. Firms that began operations for less than 3 years contributed to only 2.4%. This clearly shows that most of the firms involved in this study are well experienced in construction works

Frequency distribution on Employment and Turnover Growth from the Start Off to Current Operation

Table 2 shows the frequency distribution on employment and turnover growth level from the start off to current operation. From the Table 2, it can be seen that 55% of the respondents can be considered as having undergone high growth in terms of growth in employment. In terms of turnover growth, 48% of the respondents can be considered as having high growth. The analysis shows that most of the respondents have a high growth in both variables.

Table 2. Frequency distribution on Employment and Turnover Growth from the Start Off to Current Operation.

Growth Levels	Number of Firm (%)	
	Number of Employees	Turn Over
High Growth (> 50%)	55	48
Low Growth (<50%)	4	29.5
Unchanged (0%)	41	22.5
Total	100	100

Ranking of firm Growth Factors

Table 3 shows the firm growth factors and their overall ranking. By using Relative Important Index (RII), firm growth factors could be ranked accordingly. In terms of importance, good management of company is ranked 1. Good cash flow management is the second most important factor that contributes to firms' growth, followed by sufficient knowledge and experience, good team members, technical expertise, good site management, commitment to customer satisfaction and so on as shown in Table 3. The last five factors including focus on job safety and security, active in innovation, active in research and development, diversify expertise and forming joint venture are considered and perceived to be the least important factors that influence firm growth.

Table 3. Ranking of firm growth factors.

Firm Growth Factors	$\sum w$	RII	Rank
Good management of company	479	0.9392	1
Good cash flow management	459	0.9000	2
Sufficient knowledge and experience	456	0.8941	3
Good team members	453	0.8882	4
Technical expertise	452	0.8862	5
Good site management	449	0.8803	6
Commitment to customer satisfaction	447	0.8764	7
Availability of capital	446	0.8745	8
Availability of skilled workers	444	0.8705	9
Good relations with clients	441	0.8647	10
Internal efficiency	439	0.8607	11
Maintaining high quality of products	439	0.8607	12
Availability of bank loans and other credit	432	0.8471	13
Political stability and peaceful environment	431	0.8450	14
Effective organization structure	430	0.8431	15
Competitive prices of products/services	428	0.8392	16
Market specialization	418	0.8196	17
Open economic policy of government	416	0.8156	18
Government assistance / tax incentives	406	0.7960	19
Technological edge	403	0.7901	20
Upgrading and educating members	396	0.7764	21
Use of new technology and automation	394	0.7725	22
Focus on job safety and security	389	0.7627	23
Active in innovation	382	0.7490	24
Active in research and development	374	0.7333	25
Diversify expertise	370	0.7254	26
Forming Joint venture	349	0.6843	27

Multiple Regression of Employment on the full set of independent variables (Firm Growth Factors)

The result of multiple regression analysis, which regressed the firm growth factors against employment growth, is shown in Table 4. The enter method was used to run this analysis. As it can be seen, the 27 variables together significantly explained 53.1% of the variance in employment growth ($F=2.938$, $p<0.01$, $R^2= 0.531$). According to Table 4, only three variables including effective organization structure, use of new technology and automation and commitment to customer satisfaction had significant positive regression weight. Among these factors, uses of new technology and automation is the most significant predictor, with a t -value equal to 3.071 and p -value equal to 0.003, indicating that the more uses of new technology and automation demonstrate higher employment growth when compared with firms that do not use new technology and automation. From Table 4, it can also be seen that there are two predictors that have a significant negative weight, namely, forming joint venture and maintaining high quality of product.

Table 4. Multiple Regression of Employment Growth on the full set of independent variables (Firm Growth Factors).

Firm Growth Factors	Employment growth		
	$R^2=0.531$ Adjusted $R^2=0.35$ $F=2.938^{**}$		
	Standardized Coefficients	t	Sig.
Constant		-.595	.554
Sufficient knowledge and experience	.111	.794	.430
Market Specialization	-.209	-1.381	.172
Diversify expertise	-.347	-1.863	.067
Availability of Skilled Workers	-.178	-1.325	.189
Technical Expertise	-.053	-.247	.805
Good Team Member	.167	.785	.435
Forming Joint Venture	-.449	-3.104	.003**
Good Management of Company	.172	1.185	.240
Internal Efficiency	.020	.089	.930
Good Cash Flow Management	-.013	-.096	.924
Effective Organization Structure	.511	2.444	.017*
Good Site Management	-.181	-1.239	.219
Focus on Job Safety and Security	-.157	-1.070	.288
Upgrading and Educating Members	-.087	-.500	.619
Active in Innovation	-.027	-.113	.911
Active in Research and Development	.262	1.093	.278
Availability of Capital	-.042	-.268	.790
Availability of bank loans and other Credit	-.275	-1.447	.152
Technological Edge	-.102	-.535	.594
Use of New Technology and Automation	.645	3.071	.003**
Maintaining High Quality of Product	-.459	-2.181	.033*
Commitment to Customer Satisfaction	.493	2.736	.008**
Competitive price of products / services	-.088	-.629	.532
Good Relationships with Clients	-.066	-.323	.748
Open Economic Policy of Government	.003	.013	.989
Government Assistance / tax incentives	.095	.669	.505
Political Stability and peaceful Environment	.260	1.518	.133

Dependent Variable: Employment Growth

*Significant level at $p<0.05$ **Significant level at $p<0.01$

Multiple Regression of Turnover Growth on the full set of independent variables (Firm Growth Factors)

Table 5 summarizes the multiple regression results of the dependent variable (turnover growth) and progress with firm growth factors. The enter method was used to run this analysis. As it can be seen, the 27 variables together significantly explained 55.7% of the variance in turnover growth ($F=3.262$, $p<0.01$, $R^2= 0.557$). The results show that only a few of the firm growth factors have a significant influence on turnover growth, where factors concerning market specialization, good management of company, availability of bank loans and other credit and use of new technology and automation were positive significant predictors of turnover growth. The most significant impact on turnover growth is availability of bank loans and other credit facilities, with a t -value equal to 4.261 and p -value equal to 0.000, indicating that more availability of bank loans and other credit facilities demonstrate higher turnover growth when compared with inadequate bank loans and other credit. From Table 5, it can also be seen that there are five predictors which had a significant negative weight, namely, diversify expertise, forming joint venture, technological edge and political stability and peaceful environment.

Table 5. Multiple regression of turnover growth on the full set of independent variables (firm growth factors).

Firm Growth Factors	Turnover Growth		
	R ² =0.557 Adjusted R ² =0.386 F=3.262**		
	Standardized Coefficients	t	Sig.
Constant		-2.572	.012
Sufficient knowledge and experience	.089	.655	.515
Market Specialization	.533	3.631	.001**
Diversify expertise	-.471	-2.599	.011*
Availability of Skilled Workers	-.204	-1.558	.124
Technical Expertise	.389	1.882	.064
Good Team Member	-.010	-.048	.962
Forming Joint Venture	-.415	-2.947	.004**
Good Management of Company	.460	3.259	.002**
Internal Efficiency	-.235	-1.081	.283
Good Cash Flow Management	.075	.557	.579
Effective Organization Structure	-.066	-.324	.747
Good Site Management	-.100	-.701	.486
Focus on Job Safety and Security	-.019	-.135	.893
Upgrading and Educating Members	.254	1.495	.139
Active in Innovation	-.617	-2.658	.010**
Active in Research and Development	.428	1.840	.070
Availability of Capital	-.265	-1.723	.089
Availability of bank loans and other Credit	.788	4.261	.000**
Technological Edge	-.603	-3.266	.002**
Use of New Technology and Automation	.533	2.613	.011**
Maintaining High Quality of Product	.066	.321	.749
Commitment to Customer Satisfaction	.274	1.566	.122
Competitive price of products / services	.105	.774	.441
Good Relationships with Clients	.099	.499	.620
Open Economic Policy of Government	-.193	-1.059	.293
Government Assistance / tax incentives	-.059	-.429	.669
Political Stability and peaceful Environment	-.624	-3.754	.000**

Dependent Variable: Turnover Growth

*Significant level at $p<0.05$ **Significant level at $p<0.01$

DISCUSSION

There are several findings that have been found through this study. From the analysis, good management of a company was found to be the utmost important factor that contributes to the growth of construction companies. These factors are management related and it is in line with previous studies (Hillebrant,1990; Abu Bakar,1993; Yusuf,1995) which found that good management of companies were ranked as the main factors that contribute to the growth of companies. The top ten most important factors contributing to growth of construction companies: good company management; good cash flow management; sufficient knowledge and experience; good team members; technical expertise; good site management; commitment to customer satisfaction; availability of capital; availability of skilled workers; and good relations with clients. These factors should be aptly given more attention by construction companies that aim to achieve growth in their firms.

As been mentioned before, firm growth can be measured by several of indicators such as profit, sales, market coverage, employment and many more other factors. However, this study used two indicators, namely, number of permanent employees and annual turnover as the basis for growth measurement. From the analysis, effective organization structure, use of new technology and automation and commitment to customer satisfaction had a great correlation with employment growth. The factor concerning use of new technology and automation was considered to be the highest significant factor that influences employment growth. When turnover growth is looked at, it was found that market specialization, good management of company, availability of bank loans and other credit and use of new technology and automation are significant factors towards turnover growth. The highest significant factor for turnover growth is the availability of bank loans and other credit facilities. From these findings, it can be concluded that factor regarding the use of new technology and automation, and, availability of bank loans and other credit are the most significant factors that determine growth of construction companies. In terms of availability of bank loans and other credit, this finding is in line with previous studies (Storey, 1994; Haibo and Gerrit, 2009) where they had found that availability of financial resource is the most significant factor influencing the growth of firms. Availability of bank loans and other credit is crucial for the growth of a firm because it provides the organization with the required financial slack, facilitates the necessary response to changing conditions and increases the willingness of the firm to innovate and change (Zahra, 1991; Castrogiovanni, 1996).

The study also found that forming joint ventures was considered as an unimportant factor for both aspects of employment growth as well as turnover growth. Although, forming joint ventures was found to have a negative significance with a firm's growth, it does not mean that joint venture endeavors should be ignored because currently construction joint ventures are becoming increasingly popular in order to achieve the objectives of the construction companies.

Based on these findings and from the literature review, it can be stated that the objectives of this study have been successfully achieved. The first objective, which was to establish factors determining growth of construction companies in Malaysia, had been discussed and resolved in the literature review section; where as the second objective of finding out which factors play an important role in determining growth, had been explained and adduced through the findings.

CONCLUSION AND RECOMMENDATIONS

Firm growth is an important indicator of a thriving economy. This study was conducted to identify factors in determining the growth of construction companies. Good management of a company was found to be the utmost important factor that contributes to the growth of construction companies. This study had also successfully found the significant factors that influence growth of construction companies, whether in terms of employment growth or turnover growth. These factors can act as a basic guideline for construction companies in Malaysia that have the aim to further develop and grow. Construction companies that achieve growth will subsequently go on to contribute more actively towards the development of Malaysia's economy and social elements. According to Autio (2007), growing firms have long attracted the attention of policy makers worldwide and high growth enterprises are seen as important contributors to

employment, innovation, and competitiveness. However, it is not suggested that a firm will automatically succeed or grow by addressing all these issues, but rather, it is almost certain that a firm will have a more possible tendency to decline if these factors are ignored.

This result provides important implications for the construction companies. Companies with growth ambitions should not only rely on a competitive strategy; they should also rationally evaluate the overall capabilities of the firm. The results of this study can be utilized as a basis for the top management of a firm to make a strategic choice in enabling the company to grow. Right and appropriate decisions are crucial for construction companies to remain active and grow in today's challenging business environment. The limitation of the study is its relatively small sample size as the main focus was on large sized construction companies under the G7 category. In order to further test these conclusions, the scope of the study would need to be widened to other categories. In future studies, data from other categories of contractors could be collected and with the larger samples, more conclusive findings would be able to be established. Future research should also concentrate on new areas such as the barriers or challenges to a firm's growth. These areas are important because when companies grow, there are a number of challenges that must be faced and ultimately overcome. By using the findings from this and future studies, construction companies, especially in Malaysia, would be able to progressively grow and emerge as vital players within the industry, either locally, regionally or even at a global scale.

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GROWTH FACTORS FOR CONSTRUCTION COMPANIES IN MALAYSIA

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Abstract:

In General, most firms have multiple objectives to sustain and success in their business. For the short term, firms pay more attention to profit maximization. However for the long term, profit is no longer a prime objective because one of the objectives which may dominate the management of firm is growth. It is a change in assets, turnover, profits, number of employees and share price during the process of organizational change. Growth does not take place automatically, but must be planned strategically and implemented effectively by the organizations. The strategies for growth are vital for companies' success. Thus, the main objective of this paper is to establish factors determining growth of construction companies in Malaysia. This paper starts of with reviewing past literature on growth of firm and attempt to establish a new area that need further investigation. Study focuses on the growth factors that responsible for the growth of construction companies in Malaysia.

Keywords: Construction Companies, Growth, Strategies, Malaysia

INTRODUCTION

The construction industry is a dynamic in nature. Its environment has become more dynamic due to the increasing uncertainties in technology, budgets, and development process (Chan & Chan, 2004). According to Sanvido et. al (1992) a building project is completed as a result of a combination of many events and interactions, planned or unplanned, over the life of a facility, with changing participants and process in a constantly changing environment.

Change is a continuous process; as such, the firm must be in position to respond continuously to changing environmental conditions. Not all firms are equally able to

IMPROVING CONSTRUCTION PROJECT PERFORMANCE THROUGH PROJECT MANAGER: AN INDONESIA EXPERIENCE

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Abstract:

The project manager's responsibilities are to plan and control the company resources efficiently and complete the project on schedule, within costs and within specified quality towards project successful. However, many reports show otherwise. Studies on this issue are pointing toward the poor understanding of a good practice as a basic problem of failures in the project management. The objective of this paper is to study good practice of project management tools and technique that applied by project managers in construction project. This paper also measures how these tools and techniques were applied in construction projects. This is a case study approach and was carried out in Medan, Indonesia. Three large projects in Medan were taken as the case studies including RSU Pirngadi, Plaza Medan Fair and Redevelopment Pasar Petisah. The data obtained from project reports, questionnaires and interview with the project managers of the relevant projects. The variables were then separated into two classifications that could be defined as success and failure. The findings of the research found that a good project management practices produces a high project performance.

Keywords: Project Management, Project Manager, Construction Industry, Performance, Medan, Indonesia

INTRODUCTION

There are some companies that have built reputations for being able to consistently manage projects effectively (Gay & Layson, 2003). However, the vast majority of organization has a more spotty reputation. These are some characteristics that can be used to point out the need of project management:

- Project completed late, over budget, or not meeting the functionality requirements of client.
- Weak standard process and techniques used inconsistently by project managers
- Project management is reactive and not seen as providing value
- The time required to manage projects proactively is not built into the work plan, since it is considered 'overhead'
- Projects are successful in spite of a lack of planning and project management, through heavy stress and overtime work throughout the life cycle

THE ROLE OF PROJECT MANAGER IN IMPROVING CONSTRUCTION PROJECT PERFORMANCE: CASE STUDY IN MEDAN

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Effective project management techniques are important to ensure successful project performance. A poor strategy or incorrect budget or schedule forecasting can easily turn an expected profit into loss. This is especially true for the construction industry where projects have relatively short life cycle and the project activities are non-repetitive with rather complex interrelationships, so that there is little opportunity to improve a wrong strategy.

The most common constraints in the construction industry in developing countries is the over supply of unskilled labor restricted supply of management manpower. According to Abu Bakar

THE ADOPTION OF STRATEGIC MANAGEMENT PRACTICES BY CONSTRUCTION COMPANIES IN INDONESIA: CASE STUDY IN MEDAN

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Abstract:

Strategic Management is a process which is formalizing, long-term planning, and implementing about an organization future goal definition and achievement. This process is vital to every organization's survival because it is the process, by which the organization adapts to its ever-changing environment, and the process is applicable to all management levels and all type of organizations. The objective of this paper is to identify strategic management practices by the construction companies in Medan, Indonesia and to relate to their performance. The respondents for this research were those at the managerial level from large construction companies listed in B1 classification in Medan, Indonesia. About 28 companies responded to the survey from a total of 29 questionnaire sent earlier. The findings of the research found that the construction companies that utilize strategic management have better performance as compared to the construction companies that do not. Study also found that high percentage of large construction companies in Medan had implemented strategic management practice in their organization.

Keywords: Construction Companies, Construction Industry, Medan, Indonesia, Performance, Strategic Management.

Introduction

The construction industry plays an important role in any country's development process and economic growth, in particularly the developing countries. Indonesia, as a third world country and one of developing countries in Asia, is developing its physical structure. The economic potential invites investors and construction companies from other countries into Indonesia. For instance in Medan, the 3rd large city in Indonesia, the number of projects that were listed in the Agenda of Development Capital Governance (DIP) and the growth of its city development are increasing (LPJK, 2004).

Construction companies are very sensitive to its environment, such as economic condition, political issues, material available, and many others. Its activities characterized by project oriented activities. The terms of project will lead to a group of inter-linked activities to undertake a unique scope of work, of given specification, within constraints of cost and time, and requiring a central intelligence to direct it (Nunnally, 2001).

In practice, many large construction companies use strategic planning to improve their chance of success. However, strategic management is not solely for larger firms. According to Stahl and Grigsby (1992), strategic decision making is not the exclusive domain of large companies. It is an important activity for all sizes and type of organizations. Numerous studies have been carried out on strategic management in construction field. This included recent studies by Chinowsky et. al. (2000), Dikmen and Birgonul (2003), and Price et. al. (2003).

STRATEGIC MANAGEMENT IN CONSTRUCTION INDUSTRY: CASE STUDY IN INDONESIA

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To Whom It May Concern

Dear Sir/ Madam,

**SURVEY ON FACTORS CONTRIBUTING TO FIRM GROWTH FOR
MALAYSIAN CONSTRUCTION COMPANIES**

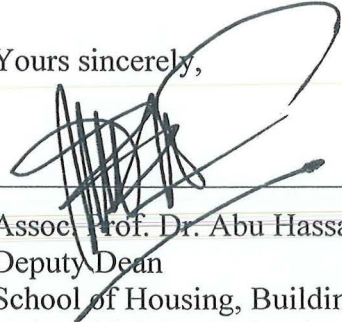
With reference to the above matter, I, Dr. Abu Hassan Abu Bakar from School of Housing, Building and Planning, USM would like to conduct a thorough study that focuses on firm growth in the local construction industry.

The main objective of this study is to establish factors determining growth of construction companies in Malaysia and to identify which factors play important role in determining growth.

Therefore, I would be pleased if you could spare your time to fill the questionnaire attached for the purpose of this research. All information and resources used throughout the survey will remain confidential and will be used for academic purposes only.

Thank you for your kind attention.

Yours sincerely,



Assoc. Prof. Dr. Abu Hassan Abu Bakar
Deputy Dean
School of Housing, Building and Planning
Universiti Sains Malaysia.

FACTORS CONTRIBUTING TO FIRM GROWTH FOR MALAYSIAN CONSTRUCTION COMPANIES

Remarks: All data and information are strictly confidential and will only be used for academic purpose.

PART 1: RESPONDENT'S PROFILE

1. Job Position

<input type="checkbox"/>	Managing Director/CEO	<input type="checkbox"/>	General Manager	<input type="checkbox"/>	Manager
<input type="checkbox"/>	Project Manager	<input type="checkbox"/>	Engineer/Quantity Surveyor	<input type="checkbox"/>	Others:

2. Education Level

<input type="checkbox"/>	High School	<input type="checkbox"/>	Diploma	<input type="checkbox"/>	Bachelor
<input type="checkbox"/>	Master	<input type="checkbox"/>	Doctorate	<input type="checkbox"/>	Others.....

3. Experience in the construction industry

<input type="checkbox"/>	Less than 5 years	<input type="checkbox"/>	6-10 years	<input type="checkbox"/>	11-15 years
<input type="checkbox"/>	16-20 years	<input type="checkbox"/>	21-25 years	<input type="checkbox"/>	More than 25 years

4. Working experience in current firm

<input type="checkbox"/>	Less than 5 years	<input type="checkbox"/>	6-10 years	<input type="checkbox"/>	11-15 years
<input type="checkbox"/>	16-20 years	<input type="checkbox"/>	21-25 years	<input type="checkbox"/>	More than 25 years

PART 2: FIRM PROFILE

5. Status Ownership

<input type="checkbox"/>	Sole Ownership	<input type="checkbox"/>	Private Limited	<input type="checkbox"/>	Cooperation/Consortium
<input type="checkbox"/>	Partnership	<input type="checkbox"/>	Public		

6. What is your firms' category at the start of the firm's operation?

<input type="checkbox"/>	G1	<input type="checkbox"/>	G2	<input type="checkbox"/>	G3	<input type="checkbox"/>	G4
<input type="checkbox"/>	G5	<input type="checkbox"/>	G6	<input type="checkbox"/>	G7	<input type="checkbox"/>	Other:.....

7. Age of the Firm

<input type="checkbox"/>	Less than 5 years	<input type="checkbox"/>	5-10 years	<input type="checkbox"/>	11-15 years	<input type="checkbox"/>	16-20 years
<input type="checkbox"/>	21-30 years	<input type="checkbox"/>	31-40 years	<input type="checkbox"/>	41-50 years	<input type="checkbox"/>	More than 51 years

8. Specialisation

<input type="checkbox"/>	General	<input type="checkbox"/>	Electrical	<input type="checkbox"/>	Road and Bridge
<input type="checkbox"/>	Mechanical	<input type="checkbox"/>	Landscaping	<input type="checkbox"/>	Others, please specify.....

9. Construction projects which your company involved currently and in past.

<input type="checkbox"/>	Government	<input type="checkbox"/>	Private	<input type="checkbox"/>	Both (Government & Private)
--------------------------	------------	--------------------------	---------	--------------------------	-----------------------------

10. Value of Work Done Annually for the past ten years

<input type="checkbox"/>	Less than RM5 million	<input type="checkbox"/>	RM5-RM10 million	<input type="checkbox"/>	RM11-RM20 million
<input type="checkbox"/>	RM21-RM30 million	<input type="checkbox"/>	RM31-RM40 million	<input type="checkbox"/>	More than RM41 million

12. Annual Net Profit Estimation

<input type="checkbox"/>	Less than RM1 million	<input type="checkbox"/>	RM1-RM5 million	<input type="checkbox"/>	RM6-RM10 million
<input type="checkbox"/>	RM11-RM15 million	<input type="checkbox"/>	RM16-RM20 million	<input type="checkbox"/>	RM21-RM30 million
<input type="checkbox"/>	More than RM30 million				

13. What are the numbers of permanent employees at the start of your firm's operation?

<input type="checkbox"/>	Less than 10	<input type="checkbox"/>	Between 10-25	<input type="checkbox"/>	26-50
<input type="checkbox"/>	50-100	<input type="checkbox"/>	Above 100, please specify.....		

14. What are the current numbers of permanent employees in your firm's operation?

<input type="checkbox"/>	Less than 10	<input type="checkbox"/>	Between 10-25	<input type="checkbox"/>	26-50
<input type="checkbox"/>	50-100	<input type="checkbox"/>	Above 100, please specify.....		

15. What is your company's turnover at the start of your firm's operation?

<input type="checkbox"/>	Less than RM1 million	<input type="checkbox"/>	RM1-RM5 million	<input type="checkbox"/>	RM6-RM10 million
<input type="checkbox"/>	RM11-RM15 million	<input type="checkbox"/>	RM16-RM20 million	<input type="checkbox"/>	>20 million, please specify.....

16. What is your company's turnover at the current of your firm's operation?

<input type="checkbox"/>	Less than RM1 million	<input type="checkbox"/>	RM1-RM5 million	<input type="checkbox"/>	RM6-RM10 million
<input type="checkbox"/>	RM11-RM15 million	<input type="checkbox"/>	RM16-RM20 million	<input type="checkbox"/>	>20 million, please specify.....

17. What is your company's market position at the start of operation?

<input type="checkbox"/>	Local
<input type="checkbox"/>	Regional
<input type="checkbox"/>	National
<input type="checkbox"/>	International

18. What is your company's current market position?

<input type="checkbox"/>	Local
<input type="checkbox"/>	Regional
<input type="checkbox"/>	National
<input type="checkbox"/>	International

PART 4: FIRM GROWTH

19. Do you state the objective of growth as your firm's primary objective?

<input type="checkbox"/>	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>	Unsure
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20. Do you consider the current business situation of your company as:

<input type="checkbox"/>	Excellence	<input type="checkbox"/>	Satisfactory	<input type="checkbox"/>	Moderate
<input type="checkbox"/>	Unsatisfactory				

<input type="checkbox"/>	Strongly Agree
<input type="checkbox"/>	Strong disagree

<input type="checkbox"/>	Agree
--------------------------	-------

<input type="checkbox"/>	Disagree
--------------------------	----------

22. Do you agree that identifying firm growth factors are important for a firm to succeed/grow?

<input type="checkbox"/>	Strongly Agree
<input type="checkbox"/>	Strong disagree

<input type="checkbox"/>	Agree
--------------------------	-------

<input type="checkbox"/>	Disagree
--------------------------	----------

23. Below are number of factors that can contribute to firm growth. From your experience, please express your opinion on how important each factor can be on influencing firm growth. (Please tick the appropriate box).

Where: 1 = Not important 2 = Less important 3 = Moderately Important 4 = Important
 5 = Very important

	1	2	3	4	5
1) Sufficient knowledge and experience					
2) Market specialization					
3) Diversify expertise					
4) Availability of skilled workers					
5) Technical expertise					
6) Good team members					
7) Forming Joint venture					
8) Good management of company					
9) Internal efficiency					
10) Good cash flow management					
11) Effective organization structure					
12) Good site management					
13) Focus on job safety and security					
14) Upgrading and educating members					
15) Active in innovation					
16) Active in research and development					
17) Availability of capital					
18) Availability of bank loans & other credit					
19) Technological edge					
20) Use of new technology and automation					
21) Maintaining high quality of products					
22) Commitment to customer satisfaction					
23) Competitive prices of products/services					
24) Good relations with clients					
25) Open economic policy of government					
26) Government assistance / tax incentives					
27) Political stability & peaceful environment					
28) Others, please specify					

PART 5: GROWTH PATH

24. Please tick the best paths that your company has chosen toward firm growth depending on the categories below which are market coverage, number of permanent employees and company's turn over. Please tick only one factor per range of years depending on the age of your company.

Market Coverage

Year 1 to 5	
<input type="checkbox"/>	Local
<input type="checkbox"/>	Regional
<input type="checkbox"/>	National
<input type="checkbox"/>	International

Year 6 to 10	
<input type="checkbox"/>	Local
<input type="checkbox"/>	Regional
<input type="checkbox"/>	National
<input type="checkbox"/>	International

Year 11 to 15	
<input type="checkbox"/>	Local
<input type="checkbox"/>	Regional
<input type="checkbox"/>	National
<input type="checkbox"/>	International

Year 16 to 20	
<input type="checkbox"/>	Local
<input type="checkbox"/>	Regional
<input type="checkbox"/>	National
<input type="checkbox"/>	International

Year 21 to 25	
<input type="checkbox"/>	Local
<input type="checkbox"/>	Regional
<input type="checkbox"/>	National
<input type="checkbox"/>	International

> Year 26	
<input type="checkbox"/>	Local
<input type="checkbox"/>	Regional
<input type="checkbox"/>	National
<input type="checkbox"/>	International

No. of Permanent Employees

Year 1 to 5	
<input type="checkbox"/>	Less than 10
<input type="checkbox"/>	Between 10-25
<input type="checkbox"/>	Between 26-50
<input type="checkbox"/>	Between 50-100
<input type="checkbox"/>	Above 100

Year 6 to 10	
<input type="checkbox"/>	Less than 10
<input type="checkbox"/>	Between 10-25
<input type="checkbox"/>	Between 26-50
<input type="checkbox"/>	Between 50-100
<input type="checkbox"/>	Above 100

Year 11 to 15	
<input type="checkbox"/>	Less than 10
<input type="checkbox"/>	Between 10-25
<input type="checkbox"/>	Between 26-50
<input type="checkbox"/>	Between 50-100
<input type="checkbox"/>	Above 100

Year 16 to 20	
<input type="checkbox"/>	Less than 10
<input type="checkbox"/>	Between 10-25
<input type="checkbox"/>	Between 26-50
<input type="checkbox"/>	Between 50-100
<input type="checkbox"/>	Above 100

Year 21 to 25	
<input type="checkbox"/>	Less than 10
<input type="checkbox"/>	Between 10-25
<input type="checkbox"/>	Between 26-50
<input type="checkbox"/>	Between 50-100
<input type="checkbox"/>	Above 100

> Year 26	
<input type="checkbox"/>	Less than 10
<input type="checkbox"/>	Between 10-25
<input type="checkbox"/>	Between 26-50
<input type="checkbox"/>	Between 50-100
<input type="checkbox"/>	Above 100

Company's Turn Over

Year 1 to 5	
<input type="checkbox"/>	< RM1million (m)
<input type="checkbox"/>	RM1m-RM5m
<input type="checkbox"/>	RM6m-RM10m
<input type="checkbox"/>	RM11m-RM15m
<input type="checkbox"/>	RM16m-RM20m
<input type="checkbox"/>	> RM 20m

Year 6 to 10	
<input type="checkbox"/>	< RM1million (m)
<input type="checkbox"/>	RM1m-RM5m
<input type="checkbox"/>	RM6m-RM10m
<input type="checkbox"/>	RM11m-RM15m
<input type="checkbox"/>	RM16m-RM20m
<input type="checkbox"/>	> RM 20m

Year 11 to 15	
<input type="checkbox"/>	< RM1million (m)
<input type="checkbox"/>	RM1m-RM5m
<input type="checkbox"/>	RM6m-RM10m
<input type="checkbox"/>	RM11m-RM15m
<input type="checkbox"/>	RM16m-RM20m
<input type="checkbox"/>	> RM 20m

Year 16 to 20	
<input type="checkbox"/>	< RM1million (m)
<input type="checkbox"/>	RM1m-RM5m
<input type="checkbox"/>	RM6m-RM10m
<input type="checkbox"/>	RM11m-RM15m
<input type="checkbox"/>	RM16m-RM20m
<input type="checkbox"/>	> RM 20m

Year 21 to 25	
<input type="checkbox"/>	< RM1million (m)
<input type="checkbox"/>	RM1m-RM5m
<input type="checkbox"/>	RM6m-RM10m
<input type="checkbox"/>	RM11m-RM15m
<input type="checkbox"/>	RM16m-RM20m
<input type="checkbox"/>	> RM 20m

> Year 26	
<input type="checkbox"/>	< RM1million (m)
<input type="checkbox"/>	RM1m-RM5m
<input type="checkbox"/>	RM6m-RM10m
<input type="checkbox"/>	RM11m-RM15m
<input type="checkbox"/>	RM16m-RM20m
<input type="checkbox"/>	> RM 20m

-Thank you for your support and cooperation-

