MANAGING EDITOR   Dr. Maryam Farooqui

CHIEF EDITOR   Dr. Chang Siu Hua

UNIVERSITI TEKNOLOGI MARA

EDITORIAL BOARD

FOREWORD

Welcome to the 10th volume and 1st issue of the ESTEEM Academic Journal (EAJ), an online peer-refereed academic journal of engineering, science and technology.Since the beginning of this year, a number of articles have been sent to us; some of which still being under review in their first or second phase, and the first eight of them are being published now, others following in the subsequent issue. Article submissions came from different UiTM branch campuses across the country and the manuscripts covered a wide range of engineering, science and technology topics, all of them being interesting and innovative.

First and foremost, we would like to extend our sincere appreciation and utmost gratitude to Associate Professor Dr. Ngah Ramzi Hamzah, Rector of UiTM (Pulau Pinang), Dr. Mohd Mahadzir Mohammud@Mahmood, Deputy Rector of Academic Affairs and Dr. Mohd Subri Tahir, Deputy Rector of Research, Industry, Community & Alumni Network for their generous support towards the successful publication of this issue. Not to be forgotten also are the constructive and invaluable comments given by the eminent panels of external reviewers and language editors who have worked assiduously towards ensuring that all the articles published in this issue are of the highest quality. In addition, we would like to thank the authors who have submitted articles to EAJ, trusting Editor and Editorial Board and thus endorsing a new initiative and an innovative academic organ and, in doing so, encouraging many more authors to submit their manuscripts as well, knowing that they and their work will be in good hands and that their findings will be published on a short-term basis. Last but not least, a special acknowledgement is dedicated to those members of the Editorial Board who have contributed to the making of this issue and whose work has increased the quality of articles even more. Although there will always be cases in which manuscripts will be rejected, our work so far has shown that the board members' motivation has been, and will be, to make publications possible rather than to block them. By means of intensive communication with authors, academic quality is and will be guaranteed and promising research findings are and will be conveyed to the academia in a functional manner.

Dr. Chang Siu Hua
Chief Editor
ESTEEM Academic Journal
Vol. 10, No. 1 (2014)
(Engineering, Science & Technology)

CONTENTS OF JOURNAL

INTERNATIONAL MARKET ENTRY MODE CHOICES BY MALAYSIAN CONSTRUCTION FIRMS USING MULTINOMIAL REGRESSION MODEL

Che Maznah Mat Isa[1], Hamidah Mohd Saman[2], Siti Rashidah Mohd Nasir[3] and Christopher Nigel Preece[4]

[1,2,3]*Faculty of Civil Engineering, UiTM, Shah Alam, Selangor, Malaysia.*
[4]*School of Engineering & Advanced Technology, UTM Razak Kuala Lumpur, Malaysia.*
[1]*chema982@salam.uitm.edu.my;* [2]*hamid929@salam.uitm.edu.my;*
[3]*sitir015@salam.uitm.edu.my;* [4]*chrispreece@ic.utm.my*

ABSTRACT

International market entry strategies involve three major decisions: which market to enter (entry location), when to enter the selected location (entry timing) and how to enter (entry mode). Entry modes and factors influencing the entry mode choices have been the subjects of interest in international market strategic management research but is still lacking in the construction area. Neglecting to choose a suitable entry mode and identifying the influential factors for the choice can lead to poor performance of construction firms in their international business ventures. Thus, this paper seeks to identify the entry modes preferred by the Malaysian construction firms, whether they choose equity the (EQ) mode, non-equity (NEQ) modes or both modes (BOTH) for their international projects. This study also seeks to determine the relationship between the types of mode chosen and the influential factors for the firms' entry mode choices. The questionnaire surveys were sent to 115 construction firms listed under CIDB Malaysia (2012) resulting in a 39.1 percent response rate. Factor analysis has grouped the highly loaded factors into three components namely, firm, market and performance specific-factors which have significantly influenced the entry mode choices by the firms. A multinomial logistic regression (MLR) model has correctly classified 71.9 percent of the firms which adopted both EQ and NEQ modes and 28.1 percent used the EQ modes. The model reveals the firm-specific factor as the strongest predictor to influence the entry mode choice with logistic coefficient, B = 2.2028. The ANOVA results show no statistically difference between the entry mode types towards the influential factors. This study contributes to the literature on international business and strategy research by linking the firm-specific factors and entry mode strategy. It posits that the firm's organizational and management supported by its strong resource capabilities has significantly influenced the firm's choices in adopting both the EQ and NEQ modes. Hence, the significant findings in this context imply that with the identified specific factors, the firms perceive themselves as better equipped to adopt both types of entry modes for their international projects.

1. INTRODUCTION

Globalization brings about not only abundant opportunities by opening up new markets, but also inevitable challenges in the form of a greater competition in the construction industry. Various studies reported that the firms' decisions to enter international markets were influenced by many factors. Some of the factors were for instance, stagnant condition or recession of domestic markets, spreading risks due to an unpredictable domestic economy, medium and long-term strategic planning to establish the firm's position, targeting a higher profit margin, attractiveness of the foreign market, competitive use of resources, opportunities for enhancing managerial and technical abilities, and taking advantage of opportunities in the global economy (Lee, Jeon, Kim, & Kim, 2011; Korkmaz & Messner, 2008; Mat Isa, Adnan, & Endut, 2006). Hence, the firms with intention to expand internationally should strategize their moves to ensure that they will be able to sustain and perform in foreign markets.

Previous studies have established three basic market entry strategies, which are the market selection, entry mode choice and entry timing decision (Gaba, Pan, & Ungson, 2002; Cuervo-Cazurra, 2011; Papadopoulos & Martin, 2011; Zhu, Eden, Miller, Thomas, & Fields, 2012; Mat Isa, Mohd Saman, Mohd Nasir, & Jaapar, 2013). In addition, Koch (2001) outlined some market entry strategies which include, choosing a specific market, setting objectives and goals, determining a control system to monitor performance, marketing plan to penetrate the market and also choosing the right entry mode to penetrate the market. However, reviews of the literature suggest that a framework to guide the construction firms to adopt effective entry mode strategies is still lacking. Hence, this present research particularly identifies the entry mode choices by the Malaysian construction firms in venturing the international market. The findings will be significant for domestic firms in developing their strategies to face the inevitable foreign market entrants. It will encourage and facilitate these domestic firms to expand their business by adopting effective entry modes to undertake construction projects in international market.

2. LITERATURE REVIEW

2.1 Entry Mode Choices

Entry mode is an institutional arrangement for organizing and conducting international business transaction or in simple terms, a decision on how to enter the market. However, each entry mode comes with its own benefits and risks. Hence, the decision on which entry mode to be chosen depends on the internal factors related to the firms' strengths and weaknesses. In addition, there are external factors related to the international market environment affecting the entry mode choices such as, the opportunities and threats. Some of the entry modes are known as wholly owned subsidiary, equity joint venture, project joint venture, exporting joint venture, alliances, franchising, licensing, and Foreign Direct Investment (FDI) (Yean, Ling, Ibbs, & Kumaraswamy, 2005; Chen & Chang, 2011).

Previous studies have shown that choosing a suitable entry mode is very crucial in order to ensure the performance of projects (Chen & Messner, 2009; Ozorhon, Arditi, Dikmen, & Birgonul, 2010; Chen & Hu, 2002). Puljeva and Widen (2007) affirmed that entry mode

choices are commonly influenced by the internal and external factors such as the firm and market factors. Chen and Messner (2009) further stressed that the entry mode plays an important role in firms' profit making and sustainable growth. Hence, in selecting the suitable entry mode, Ozorhon, Dikmen, and Birgonul (2007) suggested an extensive environmental scanning, determination of opportunities and threats, and the matching them with the firm strengths. However, there are limited studies that suggest a framework to guide the construction firms in order to decide which entry mode strategies; namely equity and non-equity modes to be used in international market expansion. Yean et al. (2005) listed thirteen (13) possible entry modes used by Singaporean AEC firms in China, while Chen and Messner (2011) have identified ten (10) basic entry modes for international construction market as shown in Table 1.

Table 1: Entry Mode Definitions (Chen & Messner, 2011).

Entry Mode	Definition
Strategic Alliance	A long term inter-corporate association without an affiliated organization based on trust and mutual respect for each participant's business needs, used to further the common interests of the members (including the entrant).
Local Agent	A contractual arrangement between the entrant (principle) and a local where the agent provides principle information on local market conditions, contracts, and assistants to the entrant.
Licensing	A contractual arrangement between parties in different countries on the licensee's uses of limited s or resources like patents, trademarks, trade names, technology, and management skills from the entrant (licensor).
Joint venture (JV) company	A permanent joint venture in which the entrant and other legally separate parties from a jointly owned entity in which they invest and engage in various decision-making activities.
Sole venture (SV) company	A permanent venture in the host country wholly owned by the entrant where profit and responsibilities are assigned exclusively to the entrant.
Branch office/company	A form of presence without a legal person status of the entrant in the host country that can carry out either profit-making business activities.
Representative office	An unincorporated formal presence in the host country to carry out non-commercial activities like business communications, product promotion, market research, contract administration, and negotiations on behalf of the entrant's head office.
Joint Venture (JV) Project	A project specific joint venture in which profits and other responsibilities are assigned e to the entrant and other parties according to a contract.
Sole Venture (SV) Project	A wholly owned project specific venture where both profits and responsibilities are assigned exclusively to the entrant.
BOT/Equity Project	A project delivery method where the entrant (sponsor) finances, builds, and operates an economic infrastructure in the host country, and then transfers the ownership back to the government at the end of the project term free of charge or at an agreed price.

Some studies have carried out research on entry mode specifically related to joint ventures (JVs) and alliances (Mohamed, 2003; Ozorhon et al., 2007; Ozorhon, Arditi, Dikmen & Birgonul, 2008; Chen & Messner, 2009). Jung, Han, Park, and Kim (2010) have made comparison on the differences between entry mode decision made by manufacturing and construction industry for the small and medium construction companies (SMCCs) indicating that in manufacturing, the non-equity modes (exporting, licensing and franchising, Greenfield) and the equity (EQ) modes (JVs, mergers and acquisitions) were the preferred entry modes. As for the construction industry, six entry modes were proposed in association with contract types named engaged with home country's firm, engaged with foreign countries' firm, JVs formed with host country's firm, sole venture, JVs formed with home country's firm, and JVs formed with third country's firm (Jung et al., 2010). The literatures

revealed most of the studies on entry mode focus on the production, manufacturing, telecommunication and other sectors, some entry modes might not apply to construction. Hence, Chen and Messner (2009) have excluded exporting and identified 10 basic entry mode for international construction market; (1) strategic alliances, (2) build-operate–transfer/equity project, (3) JV project, (4) representative office, (5) licensing, (6) local agent, (7) JV company, (8) SV company, (9) branch office/company and (10) SV. These entry modes were grouped under equity (EQ) and non-equity (NEQ) modes and they are distinguished from each other based on the resource commitment level (Chen & Messner, 2011). While, Gao and Pan (2010) divided the entry modes into three types of cumulative entry experience namely; contractual arrangement experience, equity joint venture experience (EQ), and wholly owned experience (NEQ).

Research has consistently shown that adopting suitable entry mode is crucial in the firms' decision to enter, and most importantly grow and sustain in international market. Therefore this research is conducted to investigate suitable entry mode choices (EQ or NEQ or BOTH modes) for construction firms in their international market expansion process, with a view to providing guidelines based on the strategies employed by the experienced Malaysian construction firms in the international markets. Thus, this paper seeks to identify the entry modes preferred by the Malaysian construction firms, whether they choose equity (EQ) mode, non-equity (NEQ) modes or both modes (BOTH) for their international projects. This paper also seeks to determine the relationship between the types of mode chosen and the influential factors for the firms' entry mode choices.

2.2 Factors Influencing The Entry Mode Choice

Numerous studies have shown the importance of choosing the right entry modes and the factors associated with the choices in international market expansion strategy. An earlier study by Agarwal and Ramaswami (1992) identified ownership, location and internalization (OLI) advantages as the factors influencing the firms' entry mode decision. Pan and Tse (2000) has established a similar conceptual framework on the factors that influence the entry mode decisions including firm-specific, industry-specific, country-specific and project-specific factors. Furthermore, Kawai and Jonas (2009) have established another conceptual foundation for understanding the entry mode choices based on firm, industry and institutional factors. A detailed empirical results from a study indicates that the firm resource capabilities (the number of employees, relative size of the subsidiary, and technology of the business) play an important role in determining entry mode choice of the Taiwanese firms in the international market (Chen & Chang, 2011). In sum, the specific factors identified based on these previous studies are related to OLI (ownership, location and internalization), firm, industry, country, project and institutional.

Ahmed, Mohamad, Tan, and Johnson (2002) studied on the relationships between risk perceptions and the choice of foreign market entry mode of Malaysian firms in international market and found that low risk perceptions were associated with high control entry modes, while high risk perceptions were associated with low control entry modes. Later, Ellis (2007) argued that a similar and close market distance have influenced the choice of low-risk entry modes such as exporting, licensing and setting branch office in the foreign market. However, different entry modes represent different levels of resource commitment and ownership control over the international operation (Huang & Sternquist, 2007). Based on the resource

based view (RBV) theory, lack of firm's resource capabilities may lead to financial burden and time loss for the firms and they will not be able to perform and achieve sustainable competitive advantage (Peng, 2001). Hence, this study is aimed at establishing factors which significantly influence the entry mode decision by the construction firms in the international market.

3. METHODOLOGY

The methodology section covers the conceptual framework of the study, the population based on the sampling frame, target respondents, questionnaire design related to this paper and the method of analyses adopted to measure the dependent and independent variables.

3.1 Conceptual Framework

Various entry mode choices and factors related to the entry mode choices in international market reviewed from the past literatures have been used as a basis to develop the conceptual framework for this study as shown in Figure 1.
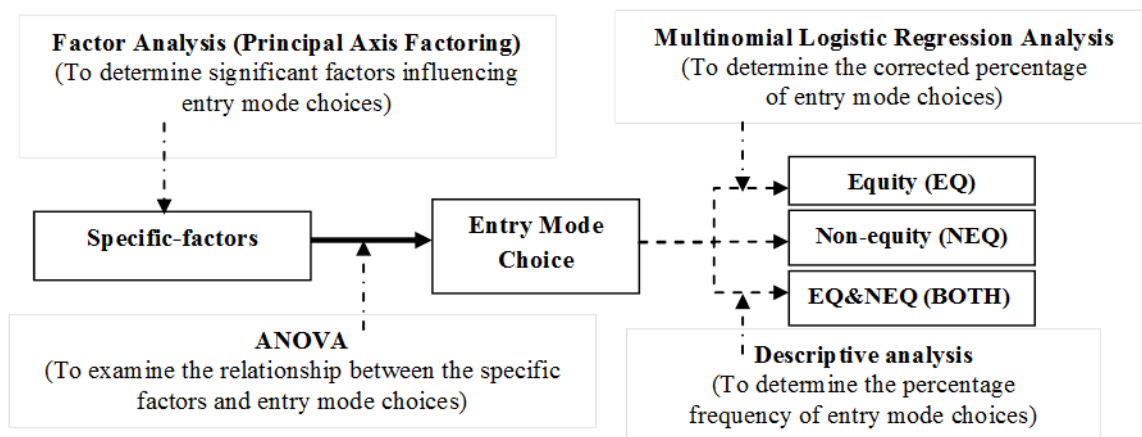
Figure 1: Conceptual framework on the specific-factors influencing entry mode choices (EQ/ NEQ) in the international market expansion.

Figure 1 shows the entry mode choice as the variable of primary interest (dependent variable), the variances in which are attempted to be explained by the specific factors as the independent variables. The method of analyses used in this study to measure the entry mode choices are firstly, the descriptive analysis consisting of the percentage frequency of the firms choosing each entry mode and secondly, by using the multinomial regression analysis which are suitable for dependent variable having three (3) types of entry mode choices (equity, non-equity and both). Factor analysis using principal axis factoring (PAF) method was used to measure the independent variables (specific factors influencing the entry mode choices) and ANOVA was used to look at the significant relationship between the specific factors and entry mode choices. However, detailed analysis based on factor analysis using PAF was excluded and only findings from the factor analysis are presented in this paper together with the descriptive analysis, multinomial logistic analysis and ANOVA.

3.2 Target Population And Respondents

Since there is no formal registry of Malaysian construction firms that export their services, the actual size of the population is not known. Hence, the population selected is from a sampling frame based on the CIDB Malaysia record (2012) grouped under ''global players'' for those construction firms that have undertaken and completed projects in the international markets. The requirements for the selection of the firms were organizational size, experience, and reputation. There are one hundred and fifteen (115) Malaysian construction firms registered as Class A and Grade 7 with CIDB Malaysia used in this study as the target population. This study used a questionnaire survey as the primary data collection tool. The respondents were the chief executives, general managers, senior managers or experienced project managers in charge of international projects in the selected firms. Reminder calls, e-mails and faxes were specifically targeted to the known construction firms which did not return their questionnaires after a reasonable period of time.

3.3 Questionnaires Design

Overall, section A of the survey enquires on the respondents' background such as company's name, designation, international experience and international business locations. Section B is related to entry location decision (not included in this paper). Section C of the survey consists of part C1 and part C2 related to the entry mode choices; part C1 asks the respondents to indicate the entry modes that their firms adopted in their international projects. Part C2 solicits their opinions on the specific factors influencing the entry mode choices. The level of significance for each opinion was measured using a 5-point Likert scale (1: Not critical; 2: A little critical; 3: Critical; 4: Very critical; and 5: Extremely critical). Hence, the analysis in this paper is based only on the background of the respondents from Section A and Section C related to the entry mode choices. The survey questionnaire related to this paper is given in the appendix.

3.4 Entry Mode Choices

The respondent was asked to choose the entry modes that his/her firms used to secure the international projects. Under the equity (EQ) mode group, there are strategic alliance (E1), joint venture company (E2), wholly-owned subsidiary (E3), joint venture project (E4), and Build-operate-transfer equity project (E5). While for the NEQ modes, there are local agent (N1), licensing (N2), sole venture project (N3), sole venture company (N4), representative office (N5) and branch office/company (N6). The analyses used to measure the dependent variables are descriptive analysis and the multinomial logistic regression analysis.

3.5 Factors Influencing Entry Mode Choices Using Factor Analysis With Principal Axis Factoring Method

This subsection summarizes the findings for the factor analysis carried out in the earlier stage of this study to measure the independent variables (specific factors). Initially, there were 44 factors listed in the questionnaires. Then, the principal axis factorial analysis has extracted and grouped only 14 of the highly loaded factors into three (3) components namely, firm-specific, market specific and performance specific factors. Following to the PAF analysis, a ''parameter estimates'' test was carried out to determine the logistic coefficient (B) for each predictor variable (specific factor) for each alternative category of the outcome variable (entry

mode choice). In other words, this test was carried out on the three (3) specific factors to determine the most significant factor influencing the entry mode choices as explained in the result section (refer to Table 7: Parameter estimates).

4. RESULTS AND DISCUSSIONS

4.1 Response Rate

From the returned questionnaires, out of 115 construction firms, 45 have participated in this research resulting in 39.1 percent response rate. In order to increase the rate of response, personal distribution, follow-up letters and phone calls have been carried out. The response rate for this study is higher than the response rate of previous studies involving Malaysian firms since most of the survey done in Malaysia generated a rate that falls between 10 to 20 per cent (Ramayah, Yan, & Sulaiman, 2005).

4.2 Respondents Background:Designation And International Experience

The respondents' designations are as follows: Project Manager (2), Senior Project Manager (9), Project Engineer (1), Senior Project Engineer (3), Design Engineer (3), Project Coordinator (1), Architecture Coordinator (1), Contract Manager (3),Quantity Surveyor (3), Vice President (2), HR Manager (2), Director (1), Managing Director (2), Technical Director (1), Project Planner (1), Quality Manager (1) and Manager (6) and Financial Controller (1). Figure 2 shows the responses from the Class A and Grade 7 firms on years of experience in the international construction.
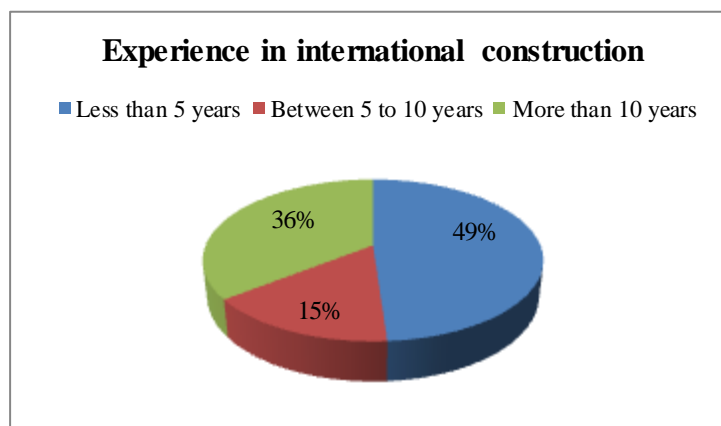
Figure 2: Respondents' experience in international construction projects.

It shows that about 36 percent have more than 10 years of international experience, 15 percent having experience between 5 to 10 year and the rest (49 percent) with less than 5 years experience. Hence, the respondents have the required international related construction background to participate and to give reliable opinions in the questionnaire surveys for this study.
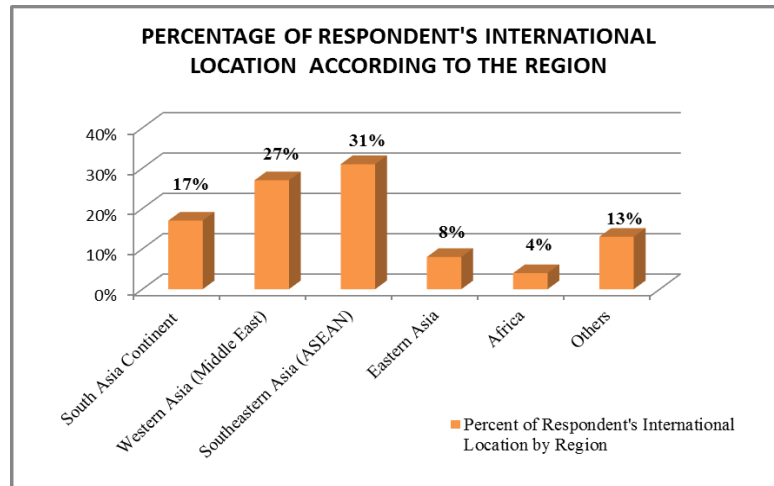
Figure 3 Percentage of Respondents' International Business Location by Regions.

Figure 3 indicates the highest proportion of the companies' overseas contracting activities is located in ASEAN Region with 31.0 percent, followed by Middle East at 27.0 percent, South Asia Continent at 17.0 percent, Eastern Asian at 8.0 percent, Africa at 4.0 percent and the remaining percent fit in the other regions. The following sections explain the entry mode choices based on the descriptive analysis and multinomial logistic regression analysis.

4.3 Entry Mode Choices: Descriptive Analysis

In this study, the respondents were asked to choose the entry modes that their companies used to secure the international projects. Listed under the EQ mode group were strategic alliance, JV company, JV project, Build-Operate-Transfer equity project and wholly-owned subsidiary. While for the NEQ modes, there are local agent, licensing, sole venture project, sole venture company, representative office, branch office/company and others. Figure 4 shows the respondents' choices based on the various types of entry modes.

Under EQ modes, the ranking of the entry modes chosen by the respondents based on the frequency are as follows: Wholly owned subsidiary (19), JV project (14), strategic alliance (12), JV company (7) and BOT (4). Under the NEQ mode, the ranking is as follows: branch office/company (13), local agent (9), sole venture project (8), representative office (4), licensing (2) and sole venture company (1). However, there were firms that have experience in using both EQ and NEQ modes. The overall results for entry mode choices are outlined in Table 2.
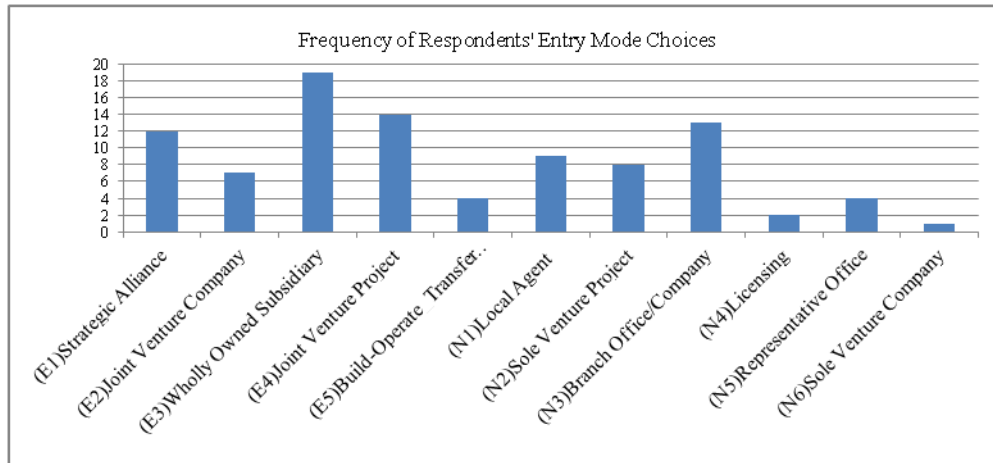
Figure 4: Frequency of Respondents' Entry Mode Choices into International Market.

Table 2: Types of Entry Mode Choice.

Types of Entry Mode	Number of Firms	Percentage (%)
Equity Modes (EQ)	20	44.44
Non-equity Modes (NEQ)	2	4.44
Equity and Non-equity Modes (BOTH)	23	51.12
Total	45	100

Results indicate more than 50 % (23) of the firms have the experience in using both EQ and NEQ modes, while, 44.44% (20) of the firms preferred the EQ modes and only 4 percent (2) of the firms preferred the NEQ modes in their international projects. The descriptive analysis revealed three (3) types of entry mode choices; 1) Firms that chose equity modes only (EQ), 2) Firms that chose non-equity modes only (NEQ) and 3) Firms that chose both equity and non-equity modes (BOTH). A binary logistic regression is used if the dependent variable is binary and only takes on two values (e.g., zero and one). However, if the dependent variable consists of nominal variable with more than two levels, a multinomial logistic regression is suitable to be used (Mooi & Sarstedt, 2011). Hence, in this study, in order to measure the correct percentage for entry mode choices as the dependent variable, a multinomial logistic regression analysis was found suitable to measure these multi-variables as explained in the following section.

4.4 Entry Mode Choices: Multinomial Regression Analysis

Based on the descriptive analysis, there are three types of entry mode choices; (1) Firms that chose equity modes only (EQ), (2) Firms that chose non-equity modes only (NEQ) and (3) Firms that chose both equity and non-equity modes (BOTH).

Hence, a multinomial logistic regression (MLR) model is constructed based on the dependent variable (entry mode choices) having these three (3) non-ordinal categories: equity mode, non-equity mode and both modes. The assumption made in this multinomial logistic regression analysis is that the problem of multi-collinearity among the independent variables does not exist.

4.5 Goodness-Of-Fit Test

Table 3 shows the Pearson and Deviance statistics to test the goodness-of-fit of the data into the model. Both the Pearson and Deviance statistic are chi-square based methods.

Table 3 : Pearson and Deviance statistics test.

	Chi-Square	df	Sig.
Pearson	54.421	74	.957
Deviance	60.390	74	.873

The null hypothesis for both tests is H0: The model is good fit. The results for both tests indicate that there is no significance test ($p > .05$); hence, the model is fit to the data.

4.6 Pseudo R-Square Test

Table 4 shows the Pseudo R-Square test carried out to indicate the amount of variation explained by the model.

Table 4: Pseudo R-Square test.

Cox and Snell	.190
Nagelkerke	.233
McFadden	.125

The results suggest that between 12.5% and 23.3% of the variability is explained by the set of independent variables (specific factors) towards dependent variable (entry mode choices). Table 5 shows the classification table based on the three types of entry mode choices.

4.7 Classification Table For Entry Mode Choices

Multinomial logistic regression was used to obtain the maximum likelihood estimates of the main effect and interaction parameters. Three separate models were evaluated: (1) using "Equity Mode" as the base case from which deviations are interpreted (Model I), (2) "Non-equity Mode" option (Model II), and (3) Both equity and non-equity mode (Model III). Similar models have been used by Agarwal and Ramaswami (1992) to test their multinomial logistic regression models namely: (1) using "no involvement" as the base case from which deviations are interpreted (Model I), (2) using "exporting" as the base case (Model II), and (3) joint venture as the base case (Model III), in which all three of these models fit the data very well.

The results from the classification table provides the indication on how well the model is able to predict the correct category for each case. The model has correctly classified 71.1% of the respondents chosen BOTH modes while the other 28.9 % has been classified under the EQ modes. However, 0% has been classified under NEQ modes. For the overall cases, the model has correctly classified 60.0% of the respondents.

Table 5: Classification table for entry mode choices.

	Predicted			
Observed	EQ	NEQ	Both	Percent Correct
Equity Modes (EQ)	8	0	11	42.1%
Non-equity Modes (NEQ)	0	0	2	0%
Both EQ and NEQ (Both)	5	0	19	79.2%
Overall Percentage	28.9%	0%	71.1%	60.0%

4.8 Likelihood Ratio Tests

Table 6 below shows the likelihood ratio tests to ascertain the significance of predictors (specific-factors) of the model.

Table 6:   Likelihood Ratio Tests.

	Model Fitting Criteria			Likelihood Ratio Tests		
Effect	AIC of Reduced Model	BIC of Reduced Model	-2 Log Likelihood of Reduced Model	Chi-Square	df	Sig.
Intercept	80.418	91.258	68.418	5.256	2	.072
Firm-specific	80.336	91.176	68.336	5.174	2	.075
Market-specific	78.776	89.616	66.776	3.613	2	.164
Performance-specific	79.598	90.438	67.598	4.435	2	.109

From the table, there is no significance main effect on entry mode choices as all the p-value is > 0.05 (0.075, 0.164, and 0.109). However in this case the cut point for p-value is assumed < 0.10 and it can be seen that firm specific factor has a significant main effect towards the dependent variable with p value of 0.075.

Thus, the results have shown that the independent variables (factors) are significant toward the dependent variables (entry mode choices).

4.9 Parameter Estimates

Table 7 depicts the parameter estimates with logistic coefficient (B) for each predictor variable (specific factor) for each alternative category of the outcome variable (entry mode choice).

It is shown again that there is no statistically significant for the entry modes if the critical value is set to 0.05. Therefore, when it was set to 0.10, the market specific factor is not significant to be used in the model. As depicted by Table 7, for BOTH modes model, it is shown that firm specific factor is the strongest predictor factor to influence the entry mode decision (B = 2.028). Nevertheless, as the percentage corrected for NEQ modes in the MLR model (refer to Table 5) is 0 percent (due to a low frequency of NEQ modes), the model for the NEQ modes cannot be established. Hence, the finding demonstrates that the firm specific factors has influenced significantly the construction firms' choices of both equity and non-equity modes in international projects.

Table 7:   Parameter Estimates

Mode[a]		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
Non-Equity (NE)	Intercept	-13.044	7.634	2.919	1	.088			
	Firm	1.935	1.671	1.340	1	.247	6.921	.262	183.114
	Market	2.600	1.715	2.298	1	.130	13.460	.467	388.145
	Performance	-1.953	1.316	2.202	1	.138	.142	.011	1.871
Equity and Non-equity (BOTH)	Intercept	-1.158	1.879	.380	1	.538			
	Firm	2.028	1.096	3.423	1	.064	7.597	.887	65.082
	Market	-.148	.554	.072	1	.789	.862	.291	2.554
	Performance	-1.533	.907	2.858	1	.091	.216	.037	1.277
a. The reference category is: Equity Mode.									

4.10 Relationship Between The Specific Factors And Types Of Entry Mode Choice Using Analysis Of Variance (ANOVA)

The purpose of the analysis carried out in this section is to determine the relationships between specific-factors (independent variables) and the entry mode choices (dependent variables). The three specific-factors identified earlier in this study are the firm-specific factors, market specific factors and performance specific factors. While the three groups of entry mode choices are EQ, NEQ and BOTH. Hence, the Levene's test for homogeneity of variances tests was carried out to determine whether the variance in scores is the same for each of the three groups. If the significance value (Sig.) for Levene's test is greater than .05, the assumption of homogeneity of variance is not violated.

4.11 Test Of Homogeneity Of Variance For Firm-Specific Factors

The test of homogeneity of variance was carried out to compare the specific factors affecting the decisions between EQ, NEQ and BOTH modes by the firms. The test establishes whether there is any similarity between the equity modes (EQ), non-equity (NEQ) modes and BOTH mode categories. The tests of homogeneity were performed for all specific factors as shown in Table 8.

Table 8: Test of Homogeneity of Variances for all specific-factors.

Specific factors	Levene Statistic	df1	df2	Sig.
Firm-specific Factors	1.401	2	42	.258
Market specific factors	.065	2	42	.937
Performance specificfactors	1.088	2	42	.346

The Levene's tests show that for the firm specific factor: p = .258; market specific factor: p = .937 and project specific factor: p = .346. Since all values are greater than .05, the assumption on the homogeneity of variance is acceptable. The results indicate that the variances of across groups for all specific factors are homogeneous; hence, the following ANOVA F-tests can be

carried out to find whether there exist statistical difference between the entry mode choice and the specific factors under study.

4.12 Analysis Of Variance (ANOVA)

Table 9 shows the analysis of variance (ANOVA) for the all specific factors.

Table 9: ANOVA for all specific factors.

Specific factors		Sum of Squares	df	Mean Square	F	Sig.
Firm	Between Groups	.772	2	.386	.610	.548
	Within Groups	26.587	42	.633		
	Total	27.359	44			
Market	Between Groups	1.534	2	.767	1.503	.234
	Within Groups	21.443	42	.511		
	Total	22.978	44			
Performance	Between Groups	.164	2	.082	.086	.917
	Within Groups	39.836	42	.948		
	Total	40.000	44			

The result indicates that there exist no statistically difference between entry mode types and all specific factors: Firm: ($F_{(2, 42)}$ = 0.610, p = .548); Market: ($F_{(2, 42)}$ = 1.503, p = .234) and Performance: ($F_{(2, 42)}$ = 0.086, p = .917). It should be noted on the following assumptions: The check on the assumption of normality was not carried out because ANOVA test is a robust test towards normality assumption. Using Central Limit Theorem (CLT), for a sample size greater than 30 (n > 30), the variable is said approximately normal. Hence, it is concluded that the three groups of independent variables namely: firm-specific factor, market-specific factor and projects specific factor were normally distributed with no statistically difference between the all types of entry mode choices and the three specific factors.

5. SUMMARY OF FINDINGS AND DISCUSSIONS

In this section, the discussion focuses on two main findings; first the most preferred entry mode choices (BOTH modes) and second, the most significant factor influencing the entry mode choices which is the firm-specific factor.

5.1 Significant Factors Influencing The Most Preferred Entry Mode Choices (BOTH)

The frequency analysis shows that under EQ mode, eighteen (18) firms have chosen the wholly owned subsidiary, while under the NEQ mode, thirteen (13) firms have set up branch office or branch company, nine (9) firms have local agents and four (4) firms with representative office. Overall results show that more than 50 percent (23) of the respondents have chosen BOTH modes. Furthermore, the MLR model has correctly classified 71.1% of the respondents chosen BOTH equity modes. The choices of using both types of entry mode indicate that different entry modes represent different levels of resource commitment and ownership control over the international operation (Huang & Sternquist, 2007). Hence, the findings indicate that the majority of firms have chosen entry modes that require low resource and commitment such as branch office/company, local agent and representative office in order to minimize the high initial risks of financial and operating, in entering unfamiliar foreign markets and absorbing risks and costs associated with product/service and market

development (Lilien & Yoon, 1990). In summary, the findings show that the majority of Malaysian firms in this study were found to adopt the adverse risk attitudes by selecting both equity and non-equity modes as indicated by the descriptive analysis and supported by the MLR model.

The MLR model has revealed that the firm specific factor is the strongest predictor that influenced the entry mode choices (BOTH modes) with logistic coefficient, B=2.2028. This following subsection discusses eight (8) items grouped under firm specific factors that have significantly influenced the entry mode choices; (1) "management of quality for product, service, human resource", (2) "management of risk attitudes", (3) "strong resources in terms of level of knowledge, and research and development", (4) "experience of firms in similar works", (5) "firm ability to assess market signals and opportunities", (6) "firm superior management and organizational dynamic capabilities", (7) "firm availability of partner/alliance" and (8) "existence of strict time limitations".

Hence, for the ease presentation and clarity in the discussion, the firm factors having similar concepts or related themes are grouped together under two main categories namely the firm organizational and management capabilities, and the firm resource capabilities.

5.2 Firm Organizational And Management Capabilities

Four (4) items are grouped under the firm organizational and management capabilities which are; management of quality for product, service, human resource, management of risk attitudes, firm ability to assess market signals and opportunities, and firm superior management and organizational dynamic capabilities.

Tjosevik and Refsland (2012) also found that the product or service delivered were especially important for the choice of entry mode. However, they did not did not find any specific influence from the firm factors which includes experience, network and international orientation on the entry mode choice.

In terms of management of risk attitudes, the current findings support a study by Ahmed et al. (2002) who found that low risk perceptions were associated with high control entry modes under EQ mode type, while high risk perceptions were associated with low control entry modes under NEQ mode type. Luo (1998) also identified that contractual risks in FDI together with higher financial and operational risks involved greater investment commitment by the firms in the foreign environment. Hence, these advantages help reduce the risk attitudes and perceptions related to entry mode choices.

The firm's strategic planning is very important in assessing the market signals and explore opportunities by gathering the required information on entry mode choices of the current and future projects internationally. In addition, the superior management with organizational dynamic capabilities has encouraged the firms to select the suitable entry mode choices.

In sum, the firm factor is essentially related to the firm's organizational and management capabilities such planning their long term objectives, assessing the opportunities in the international market and managing resources such human capital and financial. Thus, the organizational and management capabilities were considered as the significant influential factors by the Malaysian construction firms in their entry mode choices.

5.3 Firm Resource Capabilities

Four items of the firm specific factors are grouped under firm resource capabilities which are; strong resources based on level of knowledge, research and development, experience of firms in similar works, firm availability of partner/alliance and existence of strict time limitations. The findings suggest that the Malaysian firms' resource capabilities such as having strong knowledge resource, firm international experience in similar projects and partners/alliance play important roles in choosing the entry mode. Musso and Francioni (2009) examined the internationalization of small and medium-sized enterprises (SMEs) with regard to the entry mode choice process using the RBV theory. These findings contribute to the RBV theory as the firms chose their preferred entry modes based on the availability of resources that they have acquired and controlled. Hence, the firms' acquirement of sufficient knowledge on the foreign market and actively involved in research and development have contributed to the firm ability to assess the international market signals and grab the available opportunities.

In addition, the firms contended that based on their firm international experience in similar projects, they have chosen the entry modes that reduce the environment and operational risks in a foreign market. Research by Wu and Zhao (2007) in the case of Huawei has provided the evidences that the desired entry mode was actually decided by firm factors. However, the study has also shown a different finding where firm factor such as international experience was not important in choosing the entry mode. The study also revealed similar findings where the entry mode decisions by the SMES were primarily influenced by firm specific factor namely the organizational culture which is explained by the firm management capabilities in this study. However, it was found that international business experience did not exhibit any significant influence on SMEs' entry mode decisions which contradicts the current finding.

Moreover, the findings in this study are somewhat different from the earlier literature by Chen and Chang (2011) in which firm resource capabilities such as the number of employees, relative size of the subsidiary and technological capability of the business have influenced the firms' entry mode choices in the international market.

6. CONCLUSIONS

In this paper, different types of entry mode choices were discussed. Issues of why and how to take into account the significant firm specific factors and how the Malaysian construction firms employed different entry modes were discussed and presented based on the survey questionnaires answered by 45 construction firms. Validity and normality tests were carried out and have indicated that factor analysis is appropriate for this study. Thus, factor analysis using Principal Axis Factorial (PAF) as data reduction technique on the 44 items has grouped 14 significant highly loaded factors into three components namely; firm, market and performance specific factors. Prior to performing the multinomial logistic regression (MLR) analysis, descriptive statistics have proven no violation of normality and rules out the presence of multicollinearity. The MLR model discloses 71.9 percent of the firms have adopted both EQ and NEQ modes and 28.1 percent preferred only the EQ modes. The model also reveals the firm-specific factor as the strongest predictor to influence the entry mode choice with logistic coefficient, B = 2.2028. The ANOVA results show no statistically difference between the entry mode types towards the influential factors. This study specifically addresses the entry modes chosen by the construction firms in the international

market by using the MLR model. The model has successfully determined the effect of the eight (8) items under firm specific factors on the entry mode choices by the respondents to choose the EQ, NEQ and BOTH modes.

Hence, this study contributes to the literature on international business and strategy research by linking the firm-specific factors and entry mode strategy. It posits that four (4) firm organizational and management capabilities (management of quality for product, service and human resource, management of risk attitudes, firm ability to assess market signals and opportunities, and firm superior management and organizational dynamic capabilities) and four (4) firm's resource capabilities (strong resources based on level of knowledge, research and development, experience of firms in similar works, firm availability of partner/alliance and existence of strict time limitations), have significantly influenced the firm's choices in adopting both EQ and NEQ modes. Most importantly, the findings in this context imply that with the identified specific factors, the firms perceive themselves as better equipped to adopt both types of entry modes for their international projects. This extends the earlier findings in the literature on firm's organizational and management, and resources capabilities that can be linked with both types of entry mode choices. In conclusion, the findings from this research offer valuable information to construction firms in developing the entry mode strategies in their international market expansion.

ACKNOWLEDEGEMENT

REFERENCES

Agarwal, S. & Ramaswami, S. N. (1992). Choice of foreign market entry mode: Impact of ownership, location and internalization factors. *Journal of International Business Studies*, *First Quar*(8), 1–27.

Ahmed, Z. U., Mohamad, O., Tan, B., & Johnson, J. P. (2002). International risk perceptions and mode of entry: a case study of Malaysian multinational firms. *Journal of Business Research*, *55*(10), 805–813. doi:10.1016/S0148-2963(00)00220-4

Chen, C. & Messner, J. I. (2011). Permanent versus mobile entry decisions in international construction markets : Influence of home country – and firm-related factors. *Journal of Management in Engineering*, (January), 2–12.

Chen, C., & Messner, J. I. (2009). Entry mode taxonomy for international construction markets. *Journal of Management in Engineering*, *25*(January), 3–11.

Chen, H., & Hu, M. Y. (2002). An analysis of determinants of entry mode and its impact on performance. *International Business Review*, *11*(2), 193–210. doi:10.1016/S0969-5931(01)00055-5

Chen, M.-Y. & Chang, J.-Y. (2011). The choice of foreign market entry mode: An analysis of the dynamic probit model. *Economic Modelling*, *28*(1-2), 439–450. doi:10.1016/j.econmod.2010.08.004

Cuervo-Cazurra, A. (2011). Selecting the country in which to start internationalization: The non-sequential internationalization model. *Journal of World Business*, *46*(4), 426–437. doi:10.1016/j.jwb.2010.10.003

Ellis, P. D. (2007). Paths to foreign markets: Does distance to market affect firm internationalisation? *International Business Review*, *16*(5), 573–593. doi:10.1016/j.ibusrev.2007.06.001

Gaba, V., Pan, Y., & Ungson, G. R. (2002). Timing of entry in international market: An empirical study of U.S. Fortune 500 firms in China. *Journal of International Business Studies*, *33*(1), 39–55.

Gao, G. Y., & Pan, Y. (2010). The pace of MNEs' sequential entries: Cumulative entry experience and the dynamic process. *Journal of International Business Studies*, *41*(9), 1572–1580. doi:10.1057/jibs.2010.15

Huang, Y. & Sternquist, B. (2007). Retailers' foreign market entry decisions: An institutional perspective. *International Business Review*, *16*(5), 613–629. doi:10.1016/j.ibusrev.2007.06.005

Jung, W., Han, S. H., Park, H., & Kim, D. Y. (2010). Empirical assessment of internationalization strategies for small and medium construction companies. *Journal of Construction Engineering and Management*, *136*(December), 1306–1316.

Kawai, N. & Jonas, M. (2009). Market entry strategies in post-financial crisis Southeast Asia: The case of Japanese manufacturing firms. *Asian Business & Management*, *8*(3), 247–275. doi:10.1057/abm.2009.11

Koch, A. J. (2001). Selecting overseas markets and entry modes: two decision processes or one? *Marketing Intelligence & Planning*, *19*(1), 65–75. doi:10.1108/02634500110366120

Korkmaz, S., & Messner, J. I. (2008). Competitive positioning and continuity of construction firms in international markets. *Journal of Management Development*, *24*(4), 207–216.

Lee, S., Jeon, R., Kim, J., & Kim, J. (2011). Strategies for developing countries to expand their shares in the global construction market : Phase-based SWOT and AAA analyses of Korea. *Journal of Construction Engineering and Management*, *137*(6), 460–470. doi:10.1061/(ASCE)CO.1943-7862.0000316

Lilien, G. L. & Yoon, E. (1990). The timing of new entry: An exploratory study of new industrial products. *Management Science, 36*(5), 568-585.

Luo, Y. (1998). Timing of investment and international expansion performance in China. *Journal of International Business Studies*, *29*(2), 391–408.

Mat Isa, C. M., Adnan, H., & Endut, I. R. (2006). Malaysian contractors' opinions towards international market expansion. *Proceedings of the International Conference in the Built Environment in the 21st Century, 1,* 287-298.

Mat Isa, C. M., Mohd Saman, H., Mohd Nasir, S. R., & Jaapar, A. (2013). Factors for entry timing choices using Principal Axis Factorial Analysis and Logistic Regression Model. *International Journal of Mechanical, Industrial Science and Technology Engineering*, *7*(12), 1387–1397.

Mohamed, S. (2003). Performance in international construction joint ventures : Modeling perspective. *Journal of Construction Engineering and Management*, *129*(6), 619–626.

Mooi, E. & Sarstedt, M. (2011). *A concise guide to market research: The process, data, and methods using IBM SPSS Statistics.* (First, pp. 1-329). Springer Berlin Heidelberg.

Musso, F. & Francioni, B. (2009). Foreign markets entry mode decision for SMEs : Key factors and role of industrial districts . In *35th EIBA Annual Conference-Valencia*, 1-28.

Ozorhon, B., Arditi, D., Asce, M., Dikmen, I., & Birgonul, M. T. (2010). Performance of international joint ventures in construction. *Journal of Civil Engineering and Management*, *26*(4), 209–222.

Ozorhon, B., Arditi, D., Dikmen, I., & Birgonul, M. T. (2008). Implications of culture in the performance of international construction joint ventures. *Journal of Construction Engineering and Management*, *134*(5), 361–370.

Ozorhon, B., Dikmen, I., & Birgonul, M. T. (2007). Using analytic network process to predict the performance. *Journal of Management in Engineering*, *23*(3), 156–163.

Pan, Y. and Tse, D. K. (2000). The hierarchical model of market entry modes, *Journal of International Business Studies, 31*, 535-554.

Papadopoulos, N., & Mart ń, O. M. (2011). International market selection and segmentation: Perspectives and challenges. *International Marketing Review*, *28*(2), 132–149. doi:10.1108/02651331111122632

Peng, M. W. (2001). The resource-based view and international business. *Journal of Management*, *27*(6), 803–829. doi:10.1177/014920630102700611

Puljeva, A. & Widen, P. (2007). *D-UPPSATS The influence of internal and external factors on entry modes*. Lulea University of Technology.

Ramayah, T., Yan, L. C., & Sulaiman, M. (2005). "SME e-readiness in Malaysia: Implications for planning and Implementation. *Science Journal of Management, 11*(1), 103 – 120.

Tjosevik, R. & Refsland, B. (2012). *Factors influencing international entry strategies: A born global approach*. Norwegian University of Science and Technology.

Wu, D. & Zhao, F. (2007). Entry modes for international markets : Case study of Huawei, a Chinese technology enterprise. *International Review of Business Research Papers*, *3*(1), 183–196.

Yean, F., Ling, Y., Ibbs, C. W., & Kumaraswamy. (2005). Enablers that help foreign architectural , engineering , and construction firms win construction contracts in China. *Journal of Management*, *21*(2), 63–69.

Zhu, H., Eden, L., Miller, S. R., Thomas, D. E., & Fields, P. (2012). Host-country location decisions of early movers and latecomers: The role of local density and experiential learning. *International Business Review*, *21*(2), 145–155. doi:10.1016/j.ibusrev.2011.02.004

APPENDIX: SURVEY QUESTIONNAIRE

From the market entry viewpoint, **international construction** is defined as where one company of nationality of one country performs work in another country. Market is identical to country in this research.

SECTION A – BACKGROUND

A1. Name: _____ Designation: _____

A2. Company:_____ E-mail:_____

Company Stamp

A3. How many years of international construction experience do you or your company has?
O < 5 year **O** Between 5 to 10 years **O** More than 10 years

A4. Have you been involved in market entry decision issues? **O** Yes **O** No

A5. Please indicate your international business location (s)

O Argentina	O Cambodia	O Ireland	O Myanmar	O Saudi Arabia	O Thailand	O Yemen
O Algeria	O Ghana	O Jordan	O Nepal	O Singapore	O Turkmenistan	O Zimbabwe
O Australia	O Hong Kong	O Japan	O Pakistan	O Seychelles	O Trinidad	O Others............
O Bahrain	O Indonesia	O Libya	O Papua NG	O Sri Lanka	O UAE	O Others............
O Bangladesh	O India	O Maldives	O Philippines	O South Africa	O UK	O Others............
O Bosnia	O Iran	O Mauritius	O Qatar	O Sudan	O Uzbekistan	O Others............
O China	O Iraq	O Morocco	O Syria	O Taiwan	O Vietnam	O Others............

SECTION C – ENTRY MODE

C1.   Entering new international construction markets may take place through various entry modes. **Entry mode** is an institutional arrangement for organizing and conducting international business transactions, e.g., wholly owned subsidiary, joint venture, and branch office. The choice of appropriate entry modes has substantial impacts on the firm's performance in global markets. This research focuses on selection between the equity and non-equity modes on a corporate level. Please select the entry mode(s) undertaken by your firm in order to secure job overseas?

Equity Mode

O Strategic Alliance   O Joint Venture Project

O Joint Venture Company   O Build-Operate-Transfer equity project

O Wholly-owned subsidiariy O Others :_____

Non-Equity Mode

O Local agent   O Licensing

O Sole Venture Project   O Representative Office

O Branch Office/Company   O Sole Venture Company

O Others :_____

C2.   To select the optimal entry mode from feasible options to enter a specific foreign market, some factors must be taken into consideration.. Please evaluate the influences of the following factors upon this selection with a five point scale (1: not critical; 2: a little critical; 3: critical; 4: very critical; and 5: extremely critical). If there are other important factors not listed in the following table, please put them down and evaluate their influences.

ENTRY MODE SELECTION FACTORS	Degree of Influence				
	1	2	3	4	5
Attitude and intervention of host government					
Similarity of host country/market (social/cultural/religious)					
Proximity to host country					
Anticipated noneconomic risk (political risk, technological)					
Anticipated economic risk (currency fluctuation, interest rate)					
Other foreign competitors in the host country					
Promotion of export efforts of home government					
Financial support from home country banks					
Trade relationship between two countries					
Diplomatic relationship between two countries					
Host government control on licensing, restrictions and other FDI requirements					
Market profit potential/attractiveness					
Market Intensity of competition					
Product/Service Market growth					
Market entry barriers					
Availability of innovative and entrepreneurial opportunities					
Construction demand (e.g. finance, labor, material, transport and other utilities)					
Firm size					
Firm ability to assess market signals and opportunities					
Firm level of international experience					
Long-term and strong management strategic orientation/objectives					
Superior management & organizational dynamic capabilities					
Strong financing capacity					

Strong competencies (project management, specialist expertise and technology)					
Strong resources (level of knowledge and Research & Development)					
Management risk attitude					
Management quality (product, service, human resource)					
Perfomance in terms of profit targets based on Return on Investment/Sales/Assets					
Perfomance in terms of increase level of knowledge and international experience					
Uncertainty avoidance					
International business network – Strong relations with foreign partners					
Product differentiation: Strong brand name					
Firm reputation					
Firm good track record /competitive advantage					
Project size					
Project types (e.g., building, manufacturing)					
Technical complexity of projects					
Type of client (public vs. private)					
Availability of funds for projects					
Contract types or procurement methods (e.g., lump sum, cost-plus, design & build)					
Experience of company in similar works					
Existence of strict time limitations					
Existence of strict quality requirements					
Availability of partner/alliance					