

INTELLECTUAL CAPITAL INDEX AND CORPORATE PERFORMANCE: THE MODERATING EFFECTS OF BUSINESS STRATEGY

Amanuddin Shamsuddin¹
Prof. Dr Zubaidah Zainal Abidin²
Assoc. Prof. Dr Huang Ching Choo³
Marina Muhammad⁴

ABSTRACT

The 21st Century demands new business paradigms and every business will need help shifting from a focus on tangibles to intangibles or intellectual capital (IC) to become a “smarter company”. Thus, many corporations are embarking on different approaches or strategies to be more competitive and create greater values. As such, strategy-related studies in IC are concerned with the management of IC to enhance performance. Bontis (1996) suggests that corporations which adopt intellectual capital strategies are able to achieve competitive success compared to corporations that based their strategies on physical and financial resources. Studies on business strategy had focused on the strategy-performance relationship with most being strongly influenced by the frameworks developed by Miles and Snow (1978) and Porter (1980). The objective of this study is to find out whether business strategy adopted by corporations has significant impact of business performance as far as IC is concern. Prior to that, IC is converted into IC Index based on the 178 managers’ responses to questionnaire survey about the IC practices in the Malaysian Public listed corporations. Performance measurement employed in this study is based on the corporation’s Return on Equity (ROE), Profit before Tax (PBT), and Earnings per Share (EPS). Business strategy is based on Miles and Snow as well as Porter’s. Results from the multiple regression models prove that IC Index and Business Strategy are significant predictors for all selected performance measures. This study is expected to make a contribution to the corporations by demonstrating that better IC management practices and right strategy implementation may contribute a better impact on business performance.

Keywords: Intellectual Capital, Business Strategy, Performance, Malaysia

¹College of Business Management & Accounting, Universiti Tenaga Nasional, Sultan Haji Ahmad Shah Campus, 26700 Bandar Muadzam Shah, Pahang, Malaysia
Email: Amanuddin@uniten.edu.my, Tel: 609-455 2039

²Faculty of Accountancy, Universiti Teknologi MARA, 40000 Shah Alam, Selangor, Malaysia, Email: drzubaidah@salam.uitm.edu.my, Tel: 603- 5522 5435

³Faculty of Accountancy, Universiti Teknologi MARA, 40000 Shah Alam, Selangor, Malaysia, Email: ching599@salam.uitm.edu.my, Tel: 603-5532 5599

⁴Accountant, Majlis Amanah Rakyat (MARA), Ibu Pejabat MARA, 21 Jalan Raja Laut, 50609 Kuala Lumpur, Malaysia, Email: marinamuhd@mara.gov.my, Tel: 603-2613 4185

INTRODUCTION

The 21st Century demands new business paradigms and every business will need help shifting from a focus on tangibles to intangibles or intellectual capital (IC) to become a “smarter company”. In the past, the main factor driving industrial competitiveness had always been tangible and financial assets (Bontis, 2001). Thus, many corporations are embarking on different approaches or strategies to be more competitive and create greater values. Strategy-related studies in IC are concerned with the management of IC to enhance performance. Bontis (1998) suggests that corporations which adopt intellectual capital strategies are able to achieve competitive success compared to corporations that based their strategies on physical and financial resources; that is, it is not the dynamics of the industry in which the corporation competes that determine the competitive advantage but its ability to create value to the corporation by deploying resources that are valuable, rare, inimitable, non-substitutable, and structurally different (Barney, 1991).

This paper proposes to find out whether business strategy adopted by corporations has significant impact of business performance as far as IC is concern. The study was conducted in Malaysia since it has formulated several national plans to shift its economy to a k-based economy that is expected to help Malaysia achieves its Vision 2020. With this new focus, it is not unexpected that knowledge or IC has been recognized as one of the key thrusts needed for Malaysia to be competitive.

This paper is structured as follows. Section 2 reviews the relationship of IC, performance and business strategy. It also discusses the importance of business strategy as moderating effect to corporate performance. This is followed by the research methodology used in coming up with the empirical evidence based on the Malaysian managers’ perspectives. Section 4 provides the results and discussions. The conclusion and limitations are provided in Section 5.

IC, PERFORMANCE AND BUSINESS STRATEGY

The fact is the mere presence of IC in a corporation is rather worthless; it must be captured as a way of refining the corporate’s business strategy. An IC related strategy requires a systematic exploitation of opportunities for change through the productivity of knowledge work and the knowledge worker (Drucker, 1993). Such strategies should enable the corporation to create, differentially combine and deploy processes, competencies and innovative strengths in a flexible and creative manner to achieve its objectives (Rastogi, 2000). The outcome from the deployment of resources must be reflected in the creation of value in the

end products and services offered to the customers, either in the form of lower transaction costs or by the increased perceived value; and these can be achieved by adopting appropriate business strategies.

A business strategy is an overall plan of action that enables a business unit to compete within a particular industry or market (Bowman and Helfat, 2001). It defines the competitive position of a corporation regarding matters like marketing, production, delivery of services, innovation and so forth. Parnell and Carraher (2001) conclude that it is possible to identify business strategy typologies into several generic strategic approaches which are then used as a theoretical basis for categorizing strategic groups in industries.

Studies on business strategy had focused on the strategy-performance relationship with most being strongly influenced by the frameworks developed by Miles and Snow (1978) and Porter (1980). They believed that there are close links between environment and business strategies and the type of business strategy adopted by a corporation is influenced by the corporation perceives its environment to be. The framework of Miles and Snow (1978) highlights four basic types of strategy: prospectors, defenders, analysers, and reactors. Prospectors are often industry designers who perceive the environment as dynamic and full of uncertainties and, therefore, adopt a decentralized, flexible lateral relation to combat the environmental change. Their strategic stance is to develop and market new products. Defenders, on the other hand, focus on maximum efficiency in their operations under a centralized functional organization with a vertical hierarchy. They perceive environment to be stable and certain, thereby seek to reduce cost and expenses, improve product quality and reasonable pricing. Analysers are a hybrid of the prospectors and defenders who stress on both stability and flexibility. They go for the best in both domains by relying on a matrix organization. Reactors respond inconsistently to change in the environment and often perform poorly. Their management and control systems are often neglected and new products and services are introduced without a systematic planning.

Porter's (1980) framework identifies three strategic types: cost leadership, product differentiation, and focus. A low cost strategy emphasizes producing standardized product at a very low cost per unit for consumers who are price sensitive. A differentiation strategy is aimed at producing products and services considered unique industry wide and directed at consumers who are relatively price insensitive. Focus strategy refers to products and services that fulfill the needs of small groups of consumers.

Murray (1998) is of the view that Porter's generic strategies are not mutually exclusive and that each strategy could be linked to a variety of strategic means and subject to some preconditions. That is, cost leadership and differentiation strategies should not be regarded to be at the opposite end of a continuum. This is in line with Jones and Butler's (1988) view who contended that these two strategies are not mutually exclusive because by applying the transaction cost theory, transaction costs, production costs and revenue can be calculated within the calculus of a single model, making the strategies subject to the same underlying cost trade-offs. Murray (1998) further suggests that for a cost leadership strategy to be viable, there should be high transaction costs where these costs can be overcome through vertical integration or some other means of achieving preferential access; and the process technology employed in the value chain are sufficiently complex to permit significant cost improvements to be realized from learning effects. The viability of a product differentiation strategy is conditional upon the weights that customers attach to product attributes other than price when making purchase decisions. The focus strategy becomes viable when customers' need within the given product class are heterogeneous and if synergies between the value chains associated with the product offerings targeted at each individual market segment are zero or negative.

An analysis of various strategic researches conducted by Parnell (2000) identified two schools of thought: one school is an advocate of Porter's typology that superior performance can be achieved by seeking either a low-cost or a differentiation strategy, and on the other school advocates the combination strategy for achieving superior performance. Parnell (2000) is also of the view that Porter's typology does not allow viable combination strategies in the long run while Miles and Snow's typology allows for only one through the analyzer strategy.

According to Parnell and Carraher (2001), adoption of a low cost strategy is only appropriate if the corporation is able to design, produce and market a comparable product more efficiently than that of its competitor, while a differentiation strategy should be adopted when the corporation can provide unique and superior value to customers by way of product quality, special features, or after sales service. A focus strategy cannot be totally isolated from the other two strategies as it can be aligned with a given segment of the market.

Past studies were able to establish some form of support for strategic relationship between IC and performance. However, the issue of whether and how IC should be evaluated or measured remains contentious.

BUSINESS STRATEGY AS THE MODERATING EFFECTS

This study takes the approach of the resource-based view of the corporation by focusing on its integrative and dynamic elements, where competitive advantage resulting in differential performance is a consequence of the corporation's internal processes of resource accumulation and deployment (Roos et al., 2002). The basis of this theory is built on Porter's (1980) model of competitive advantage using the externally oriented product market and industry analysis approach, supplemented by Barney's (1995) view of the resource-based view that external analysis alone is inadequate to garner valuable resources to gain and sustain competitive advantage. Corporations need to exploit their financial capital resources, human capital resources and organisational capital resources to manipulate opportunities and neutralise any threats in the environment. By capitalising on its heterogeneity, a corporation's imperfectly mobile resources can be bundled with its idiosyncratic assets and liabilities to lend itself to unique characters that are rare, valuable, imperfectly imitable and non-substitutable (Barney, 1991; 1995; Penrose, 1959). However, the

increasingly rapid diffusion of new technology which includes innovation and knowledge revolution has significantly changed the competitive landscape making the theoretical underpinnings of economics of industrial organisation insufficient to generate a production of value. Thus, the resource-based view of the corporation has to be complemented by the knowledge-based view of the corporation which deals directly with strategy issues from the behavioral perspectives. The core construct of the knowledge-based view concerns the characteristics of knowledge and the circumstances of its creation and application (Grant, 1997), the mechanisms by which corporations coordinate and integrate the specialized knowledge of tacit and explicit knowledge through organisational learning and organisational capabilities (Nonaka, 1994).

Experience from the pioneers of reporting on IC (Edvinsson and Malone, 1997) indicates that information on IC has little value for users unless it is linked to the strategy of the corporation. Any performance measurement system should be used to assess and challenge the assumptions underpinning the current strategic direction (Neely et al. 2003). Verifying or rejecting strategic assumptions will potentially impact the resource allocation in organizations. Therefore, the development of a set of performance measures should be guided by strategy (Jones and Butler, 1988; Neely et al. 2003).

This means that the IC of a corporation should be one of the central considerations in formulating strategy and one of the primary constants upon which a corporation can establish its identity and frame its strategy, as well as one of the primary sources of the corporation's profitability (Grant, 1991). Therefore, corporations need to strategically identify and develop their IC in order to gain a competitive advantage and to increase their performance (Hamel and Prahalad, 1994; Teece et al. 1997). The key to a resource-based approach to strategy formulation is to understand the relationships between IC, competitive advantage, and profitability (Grant, 1991).

It seems generally accepted that measures affect managerial behavior and actions that in turn drive the strategy implementation (Neely et al. 1996). This implies that performance measurement system should evaluate the journey towards achieving their strategic goals (Bassi and McMurrer, 1999). Jonathan Low demonstrated that 70 per cent of CEOs admit that there is a big gap between what gets measured and rewarded and what actually drives performance (Chatzkel, 2002). This is further substantiated by Roos et al. (1998) who found that although 63 per cent of CEOs think measurement of intangibles is important only 10 per cent were using the results to evaluate strategic direction.

In the present knowledge era, knowledge is viewed as a critical resource on which corporations can build and sustain distinctive capability (Grant, 1996). Therefore, corporations should begin to appreciate the strategic importance of knowledge assets and their organisational implications in order to survive and prosper in the competitive world.

A strategy issue is about making a choice between two or more alternatives. Any choice of a strategy or a combination of strategies is intended to put the corporation in a strong competitive position. Under the resource-based view and the knowledge-based view of the corporation, no one single business strategy can claim exclusivity. Competitive advantage from a corporation's heterogeneity of resources must be supported by business strategies applied in continuum. Whether it is a cost leadership or a differentiation strategy, prospector or defender, the execution of the strategy is still reliant on tacit and explicit knowledge of the corporation's human capital, the codification of knowledge and processes made available by the structural capital, the effectiveness of the systems and delivery adopted in the innovation capital, and the internal and external relationships made possible by the customer capital. Therefore, in the relationship between IC index and performance, business strategy can emerge as a moderator.

It is to be noted that besides strategy, there are many other factors that affect corporation performance such as the leadership style of the management, the extent of the risk management practiced as well as the surrounding environment that the corporation is operating. However, the scope of the study is focusing on the influence or impact of strategy towards the corporation performance in the ambit of IC management in Malaysia's Public Listed Corporations.

RESEARCH METHOD AND DATA

The aim of this paper is to test empirically the extent of business strategy affecting the corporate performance in Malaysian PLCs. A postal questionnaire survey was implemented across 803 companies listed in the main market of Bursa Malaysia¹ on 1st April, 2011. These companies are from the construction, consumer products, hotel, industrial products, infrastructure projects, plantation, property, technology and trading/services sectors. Certain industries such as Mining, REITS and Finance were excluded from the study due to their specialised nature and the additional requirements imposed on the financial sector. In the first three weeks after the questionnaires sent out, 105 respondents returned the questionnaires. Subsequently, a follow up letter "calling for response" was sent out one week after the due date together with a blank questionnaire and reply-paid envelope to the remaining 698 non-respondents. Finally, a personalised phone call was made to most of the non-respondents a week after the follow up letter was issued. After all these efforts (reminders, phone calls and e-mails), an additional 74 questionnaires were received by the third week of May. Hence, a total of 179 questionnaires were received, thereby providing 22.3 per cent response rate. In this study, Chen et al.'s (2004) framework of IC was used as a starting point. Additional items were subsequently added from other IC literature such as Huang (2007), Jacobsen and Hofman-Bang (2005), Guthrie and Petty (2000), Bontis et al. (2001) and Liebowitz and Ching (2000).

¹ The list excludes corporations which were classified under PN4 and PN17 by the Bursa Malaysia.

The data for the study were derived from questionnaire survey. A questionnaire was designed to elicit responses from the respondents regarding their views on the extent of IC management practices in their respective company. The questionnaire was divided into four sections, A to D. In Section A, the 65 statements developed in the questionnaire were initially drawn from previous studies on intellectual capital. One of the top management (CEO/COO/MD/CFO) in each company was asked to indicate the likely scenario that his/her corporation is practicing from “1” to “6” where “1” represents “never practiced” and “6” represents “very greatly practiced”.

In Section B, respondents were also asked to indicate the level of importance (in percentage) of IC components in creating future value for his/her company. The percentage given should be added up to 100%. The purpose of this question was to obtain the respondent’s perceived level of importance among the IC components that are being practiced in his/her respective company.

Section C of the questionnaire was designed to gauge the likely type of business strategy that is being practiced in a respondent’s company. Three imaginary companies (Company A, Company B, and Company C) represent the characteristics of business strategies based on Porter’s strategic advantages – focus strategy, cost leadership strategy, and product differentiation strategy. Company A represents focus strategy, Company B represents cost leadership strategy, and the product differentiation strategy is represented by Company C. Respondent is required to indicate the most likely scenario that is being practiced in his/her present company by using the scale from 1 to 7.

Section D intended to find out the respondent’s personal information as well as his/her company’s profiles. In addition, respondents were also asked to give comments or suggestion pertaining to the survey or IC in general besides indicating whether he/she agree to be contacted for further analysis.

RELIABILITY ASSESSMENT

The reliability of response received is an important aspect in questionnaire design. The reliability analysis of a measurement instrument determines the consistency with which the instrument is measuring the concept (Nunally, 1994). The internal consistency method, which is the most basic form of reliability estimation, is considered to be the most practical since it needs only the administration of a single measuring instrument. In this study, reliability was operationalised as internal consistency, which is the degree of intercorrelation among items which measure the same concept (Sekaran, 2003). The recommended measure of the internal consistency of a set of items is provided by the Cronbach’s coefficient alpha (Nunally, 1994). The threshold level of the Cronbach’s coefficient alpha varies with the type of research; where new, exploratory-type researches could have a lower level of 0.50 (Sethi and King, 1991) or 0.60 (Nunally, 1994) although Nunnally (1994); Hair et al. (2010) and Field (2009) exerts that the cronbach alpha of greater than 0.7 is acceptable for the social sciences research. This study adopted a threshold of 0.70. The 65 IC statements that were grouped in the four components of intellectual capital were tested on their reliability. The outcome of the Cronbach’s Alpha test shows that all the factors for the different categories of IC are consistent (see Table 1). Their Cronbach’s Alpha is above 0.70. As the values of Cronbach’s Alpha are above the accepted threshold level, no item was eliminated.

Table 1: Reliability Test based on the Cronbach Alpha

IC Components	Number of Items	Cronbach Alpha
Human Capital	22	0.877
Structural Capital	19	0.744
Innovation Capital	11	0.829
Customer Capital	13	0.850
Total	65	

DEPENDENT VARIABLE: PERFORMANCE

Measuring performance was a major challenge (Kaplan and Norton, 1996), as it could be seen as multi-dimensional construct. As such, using any single indicator might not effectively assess performance. To have a comprehensive measurement of performance, both financial and non-financial measures were used. While financial indicators could provide quantifiable measures, non-financial indicators would provide a broader measure of performance. What made it especially difficult to measure performance as an outcome of IC, was the fact that despite the numerous studies done to measure IC, none was able to contribute to a universal framework (Sveiby, 2007; Dumay, 2009).

In this study, the measurement for performance was emphasised on the financial indicators which focussed on the accounting based indicators and market based indicator. One peculiarity of the sample chosen was that the corporations were made up from many sectors/industries. Thus, it deemed appropriate to get common indicators to measure performance across all corporations. Moreover, the indicators were more objective since they were actual results derived from the company’s operation. In addition, the financial data was readily available and retrievable from corporations’ annual report and/or data stream. Hence, in this study, financial data such as Return on Equity (ROE), Profit before Tax (PBT) and Earning per Share (EPS) value were used to measure corporate’s performance.

MODERATING VARIABLE - BUSINESS STRATEGY

The measures for business strategy in most strategic management literatures are strongly influenced by the frameworks developed by Miles and Snow (1978) and Porter (1980). The framework of Miles and Snow (1978) highlights four basic types of strategy: prospectors, defenders, analysers, and reactors. They believed that there are close links between business strategies and the type of business strategy adopted by a corporate is influenced by how the corporate perceives its environment. Porter's (1980) framework identifies three strategic types: cost leadership, product differentiation, and market focus. This study adopted Porter's framework as the sample corporations were from many sectors and hence a common measures deemed appropriate for comparison purpose. In addition, the samples were not from the highly regulated industries unlike the financial sector which was excluded for this study. This study required respondents to select one of the alternative strategies that best describes their company's strategy based on the three hypothetical scenarios.

DATA ANALYSIS TECHNIQUES

Data collected from the survey were prepared for analyses by completing several preliminary steps before testing the hypotheses. Descriptive statistics were conducted to describe the phenomena of interest. Correlations were calculated to identify any preliminary relationship among the variables examined, followed by factor analysis and reliability analysis to assess the goodness of the measures. Finally, regression analyses were conducted to test the hypotheses and determine the relationship between IC and IC Index, the effects of IC Index on performance and the the effects of IC Index on performance with the present of business strategy as a moderating variable.

RESULTS AND DISCUSSION OF THE FINDINGS

For the purpose of this study, the results were discussed on the moderating effects of the business strategy on corporate performance. Corporate performance was measured based on the performance measures selected, namely, Return on Equity (ROE), Profit before Tax (PBT), and Earnings per Share (EPS). In this study, a hypothesis was developed to test the moderating effects of business strategy on the corporate performance. Prior to that IC is converted to IC Index by using the following procedures.

As discussed earlier, the data for the study were derived from questionnaire survey. A total of sixty-five IC statements were developed to elicit responses from the respondents regarding their views on the extent of IC management practices in their respective corporation. In order to derive the IC Index, the respondents' scores were recorded. The calculation of the IC Index was carried out after performing the Factor Analysis. After the factor analysis was run, there were only 43 IC statements that are usable for further analysis. The breakdown of the usable statements with the respective IC components is presented in Table 2.

Table 2: Breakdown of usable statements with respective IC components

IC Components	Usable Statements (a)	Maximum Scores (b) = (a) x 6	Minimum Scores (c) = (a) x 1
Human Capital	11	66	11
Structural Capital	12	72	12
Innovation Capital	9	54	9
Customer Capital	11	66	11
Total	43		

Score for each of the 43 statement pertaining to the extent of the intellectual capital management practices in their corporations were then analysed. This study used the 6-scale rating in getting the responses from repondents; "1 - never practised being the lowest and 6 - very greatly practised being the highest". Once each statement has been answered according to its IC component, the IC scores can be calculated both at the component level and company level. The scores can be expressed either in an absolute value or converted to a percentage. Since the scope of the study involving many sectors of the public listed corporations in Bursa Malaysia, this study proposes to use the percentage method to derive the IC Index. Furthermore, by using percentage, it is possible to make comparison of the IC index among the corporations from different sectors.

It is to be noted that the average weightage on the importance of IC components was derived from the respondents' scores in Section B of the questionnaire. The outcomes of the average weightage on the importance of IC components are shown in Table 3.

Table 3: Average Weightage on the Importance of IC Components

No.	IC Components	Weightage (%)	Level of Importance
1	Human Capital (HC)	0.31	First
2	Structural Capital (SC)	0.18	Fourth
3	Innovation Capital (InC)	0.21	Third
4	Customer Capital (CC)	0.30	Second

Results from Table 3 indicate that HC component was perceived as the most important in the management of intellectual capital in corporations in Malaysia (31%); whilst the least important dimension was the SC component with the score of 18%. The weightage of the IC component is very subjective. It depends on the number of the components selected, type of industry as well as the management or employees' perception and understanding about the IC components.

RELATIONSHIP BETWEEN IC AND IC INDEX

One of the peculiar objectives of this study is to measure the impacts of IC index on corporate performance. Before analysing the results, the study intends to explore if there is a relationship exists between IC and IC index. The objective of the analysis is to know whether there is a correlation between IC and IC index. IC index is basically the transformation of IC score by multiplying with certain weightage.

In order to determine whether significant linear correlation exists between IC and IC Index, correlation analyses were carried out. As shown in Table 4, the correlation matrix results show that IC has a significant linear correlation with IC Index. Once it was confirmed that there is a significant linear correlation exists between IC and IC Index, further test was carried out by performing simple linear regression.

Table 4: The Relationship between IC and IC Index Correlations

		IC_index	Skor_IC
IC_index	Pearson Correlation	1	.924**
	Sig. (2-tailed)		.000
	N	178	178
Skor_IC	Pearson Correlation	.924**	1
	Sig. (2-tailed)	.000	
	N	178	178

** . Correlation is significant at the 0.01 level (2-tailed).

The results of Pearson correlation revealed that a significant relationship exists between IC and IC index [$r=0.924$, $p<0.05$]. The positive coefficient points out to the fact that the higher IC will lead to higher IC index. The results of the study revealed a strong relationship between IC and IC Index. Unsurprisingly, both of the variables have strong correlation since there are basically of the same origin. The sole difference lies in the fact that the IC Index has included weightage given by respondents in its calculation.

RELATIONSHIP BETWEEN IC INDEX AND PERFORMANCE WITH THE PRESENT OF BUSINESS STRATEGY AS MODERATING VARIABLE

Moderating variables explain 'how' and/or 'when' question. Moderators address "when" or "for whom" a variable most strongly predicts or causes an outcome variable. More specifically, a moderator is a variable that alters the direction or strength of the relation between a predictor and an outcome (Baron & Kenny, 1986; Holmbeck, 1997; James & Brett, 1984). In this study, the Business Strategy is chosen as the moderating variable, IC Index is the predictor and (business) performance is the outcome.

IC INDEX, BUSINESS STRATEGY AND RETURN ON EQUITY (ROE)

In model summary (Table 7), Model 1 represents entry of the first set of control variables while Model 2 represents entry of interaction between IC Index and business strategy. The results show that Model 1 accounted for 23.4% of the variance (R square) in ROE. Entry of interaction of IC Index and business strategy resulted in R square change of 0.11 and significance F change of 0.000. This indicates that the interaction between IC Index and business strategy is significant to explain any additional observed variation on ROE.

Table 7: Model summary of ROE

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.483	.234	.225	17.22867	.234	26.696	2	175	.000
2	.586	.344	.333	15.98751	.110	29.226	1	174	.000

In ANOVA table (Table 8), the results shows that the entry of the set of control variables alone (Model 1) yielded a significant prediction equation [$DF_{2,175}=26.696$, $p<0.05$]. Addition of interaction between IC Index and business strategy in Model 2 resulted in an overall significant prediction equation [$DF_{3,174}=30.414$, $p<0.05$].

Table 8: ANOVA Table of Return on Equity ANOVA^c

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15847.950	2	7923.975	26.696	.000 ^a
	Residual	51944.715	175	296.827		
	Total	67792.665	177			
2	Regression	23318.156	3	7772.719	30.410	.000 ^b
	Residual	44474.509	174	255.601		
	Total	67792.665	177			

a. Predictors: (Constant), scenariomidified, icindeks

b. Predictors: (Constant), scenariomidified, icindeks, ICINDEXBIZ

c. Dependent Variable: Return on Equity as at 31 Dec 2010 or latest available data (%)

In examining the table of regression coefficient in Model 2 (Table 9), it can be seen that the interaction between IC index* business strategy variable is a significant predictor for ROE ($p < 0.05$). Therefore, the study has evidence to prove that business strategy is a moderator to the relationship between IC index and ROE.

Multicollinearity (high correlation among independent variables) exists when the Tolerance values are below 0.1 and Variance Inflation Factor (VIF) is greater than 10. The Table 9 below shows that the Tolerance values are all above 0.1 and the VIF are all below ten. These values indicate that there is no multicollinearity problem.

Table 9: Regression coefficient of Return on Equity Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-65.575	10.787		-6.079	.000		
	icindeks	1.392	.190	.483	7.307	.000	1.000	1.000
	scenariomidified	.022	.799	.002	.028	.978	1.000	1.000
2	(Constant)	-40.665	11.019		-3.690	.000		
	icindeks	.721	.216	.251	3.341	.001	.670	1.492
	scenariomidified	.480	.746	.040	.644	.521	.987	1.013
	ICINDEXBIZ	.053	.010	.407	5.406	.000	.665	1.504

IC INDEX, BUSINESS STRATEGY AND PROFIT BEFORE TAX (PBT)

In model summary Table 10, Model 1 represent entry of the first set of control variables, Model 2 represents entry of interaction between IC index and business strategy. The results show that Model 1 accounted 23.4% of the variance (R square) in PBT. Entry of interaction of IC Index and business strategy resulted in R square change of 0.082 and significance F change of 0.000. This indicates that the interaction between IC Index and business strategy is significant to explain any additional observed variation on PBT.

Table 10: Model summary of Profit before Tax

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.214	.046	.035	580731.386	.046	4.182	2	175	.017
2	.357	.127	.112	556859.298	.082	16.326	1	174	.000

In ANOVA table (Table 11), the results shows that the entry of the set of control variables alone (Model 1) yielded a significant prediction equation [DF_{2,175}=4.182, $p < 0.05$]. Additional interaction between IC index and business strategy in model 2 resulted in an overall significant prediction equation [DF_{3,174}=8.474, $p < 0.05$].

Table 11: ANOVA Table of Profit before Tax
ANOVA^c

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.821E12	2	1.411E12	4.182	.017 ^a
	Residual	5.902E13	175	3.372E11		
	Total	6.184E13	177			
2	Regression	7.884E12	3	2.628E12	8.474	.000 ^b
	Residual	5.396E13	174	3.101E11		
	Total	6.184E13	177			

a. Predictors: (Constant), scenariomidified, icindeks

b. Predictors: (Constant), scenariomidified, icindeks, ICINDEXBIZ

c. Dependent Variable: Profit Before Tax as at 30 June 2011 or latest available data (RM)

In examining the regression table (Table 12), it can be seen from Model 2 that the interaction between IC index* business strategy variable is a significant predictor for PBT ($p < 0.05$). Hence, the results proved that business strategy is a moderator to the relationship between IC index and PBT.

Table 12: Regression coefficient of Profit before Tax
Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-787309.9	363600.5		-2.165	.032	
	icindeks	18255.1	6419.6	.210	2.844	.005	1.000
	scenariomidified	13766.6	26932.9	.038	.511	.610	1.000
2	(Constant)	-138852.4	383817.9		-.362	.718	
	icindeks	804.0	7519.7	.009	.107	.915	.670
	scenariomidified	25694.4	25993.9	.070	.988	.324	.987
	ICINDEXBIZ	1390.1	344.0	.351	4.041	.000	.665

By examining the Tolerance and VIF in Table 12, it shows that the Tolerance values are all above 0.1 and the VIF are all below ten. Hence, these values indicate that there is no multicollinearity problem exists.

IC INDEX, BUSINESS STRATEGY AND EARNING PER SHARE (EPS)

In model summary Table 13, Model 1 represent entry of the first set of control variables, Model 2 represents entry of interaction between IC index and business strategy. The results show that Model 1 accounted for 63.8% of the variance (R square) in Earning per Share. Entry of interaction of IC Index and business strategy resulted in R square change of 0.153 and significance F change of 0.000. This indicates that the interaction between IC Index and business strategy is significant to explain any additional observed variation on EPS.

Table 13: Model summary of earning per share
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.799	.638	.634	.25910	.638	154.528	2	175	.000
2	.889	.791	.787	.19755	.153	127.030	1	174	.000

Table 14 of the ANOVA table shows that the entry of the set of control variables alone (Model 1) yielded a significant prediction equation [DF_{2,175}=154.528, $p < 0.05$]. Addition of interaction between IC index and business strategy in Model 2 resulted in an overall significant prediction equation [DF_{3,174}=219.552, $p < 0.05$].

Table 14: ANOVA Table of Earning per Share
ANOVA^c

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.747	2	10.374	154.528	.000 ^a
	Residual	11.748	175	.067		
	Total	32.495	177			
2	Regression	25.705	3	8.568	219.552	.000 ^b
	Residual	6.791	174	.039		
	Total	32.495	177			

a. Predictors: (Constant), scenariomidifed, icindeks

b. Predictors: (Constant), scenariomidifed, icindeks, ICINDEXBIZ

c. Dependent Variable: Earnings Per Share as at 30 June 2011 (RM)

In examining the table of regression coefficient (Table 15), can be seen from Model 2 that the interaction between IC index* business strategy variable is a significant predictor for earning per share ($p < 0.05$). Hence, we have evidence to proof that business strategy is a moderator to relationship between IC index and performance (earning per share).

Table 15: Regression coefficient of Earning per Share
Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-2.280	.162		-14.056	.000		
	icindeks	.050	.003	.792	17.417	.000	1.000	1.000
	scenariomidifed	-.030	.012	-.113	-2.486	.014	1.000	1.000
2	(Constant)	-1.639	.136		-12.034	.000		
	icindeks	.033	.003	.518	12.227	.000	.670	1.492
	scenariomidifed	-.018	.009	-.068	-1.960	.052	.987	1.013
	ICINDEXBIZ	.001	.000	.479	11.271	.000	.665	1.504

To summarise, as can be seen from the preceding section, Business Strategy plays a significant role in predicting the performance of corporations as far as IC Index in concern. The results from the multiple regression models prove that IC Index and Business Strategy are significant predictors of all selected performance measures.

Upon checking on Coefficients Tables, there is no evidence to indicate that a multicollinearity problem exists in all Models. The results shows that the Tolerance values are all above 0.1 and the Variance Inflation Factor (VIF) are all below 10. These values indicate that there is no multicollinearity (high correlation among independent variables) problem.

CONCLUSION AND LIMITATION

Results from the multiple regression models prove that IC Index and Business Strategy are significant predictors for all selected performance measures. This study is expected to make a contribution to the corporations by demonstrating that better IC management practices and right strategy implementation may contribute a better impact on business performance. The results, however, needs to be interpreted with caution. The findings may not be generalized in other markets since the data was based on the Malaysian managers' responses to questionnaire at a particular point in time. Thus, further research in the area is recommended.

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