

# **"MEASUREMENT OF PERFORMANCE AT INSTITUTIONS OF HIGHER LEARNING: THE BALANCED SCORE CARD APPROACH"**

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## Abstract

Organizations have to confront with new developments brought about by the shift of industrial age competition to information age competition. As a result of this, certain assumptions with regard to the running and measurement of organizational performance have become obsolete. Information becomes essential to bring about new capabilities for competitive success. In the information age, it is vital for organizations to attempt to create future value through investments in customers, suppliers, employees, processes, technology and innovation (Kaplan, 1998). Therefore, in information age organizations need to formulate and utilise performance measurement tools that can be used to develop strategies, not only to create value for the current and future customers, but also to enhance current and future capabilities necessary to improve future performance. The tools are not only to be used to control behaviour and to evaluate past performances, but also to articulate and communicate future strategies. In brief, the objectives of this research study are:

1. Evaluate Performance Measurement at Institutions of Higher Learning
2. Assess the level of Awareness and knowledge of Balanced Scorecard as a measure

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Keywords: Balanced Scorecard, Measures, Performance, Higher learning institutes, Approach

## Introduction

Increasingly higher educational institutions need to gain deeper insight into operations across many different faculties, divisions and critical business processes: - to budget, to plan and to manage more effectively. They are under continual pressure to find innovative, yet cost-effective ways to organize, use, and share information to strengthen competitive advantage and improve the services they deliver to students. They need to find meaningful measurements, display recordable results and initiate actions based on the measurement results.

If they want to be effective and efficient, they need for instance, to track student recruiting and admissions, funding and means of improving financial performance and comparing academic performance. But more than these, institutions need to steer their performance in line with their mission, the strategic direction set, and evaluate performance in their internal processes, student and client management, financial returns and learning and growth.

This paper examines tools commonly used in performance measurement and assesses the knowledge and extent of awareness of the Balanced Scorecard (BSC) approach among the Higher Educational Institutions in Malaysia. In addition the focus is on the methodology used in the study which is driven by the two main objectives of the study. The two main objectives are:

1. Evaluate Performance Measurement at Institutions of Higher Learning
2. Assess the level of Awareness and knowledge of BSC as a measure

## Overview of the Malaysia Higher Education System

Since the 1960s the limited capacity of the domestic higher education institution has rendered Malaysia to rely on the international higher educational resources to develop its human capital needs. Increasingly, privately sponsored students as well as government sponsored students were sent overseas to attain their higher education while efforts were also in place to expand the capacity of the domestic private and public institutions. For varying reasons, students tend to choose English speaking countries such as the US, UK, Australia, Canada and New Zealand as their study destination (Mazzarol and Soutar, 2002). The rapid economic growth experienced by Malaysia since 1980s is partly attributable to the heavy investment in developing its human resource capital as the economy became increasingly integrated with the economy of the rest of the world. During this period, private colleges and government institutions are beginning to mushroom around the country positioning them as the source of higher education.

In the 1990s, as the country was moving towards medium-to-high technology industries, further development and investment in skilled labour were required to provide the basis for the professional and technical skills required by the economy. The rising cost of overseas higher education as a result of the reform and the adoption of the user-pay concept in Western Universities have rendered the country to expedite the expansion of its domestic capability to meet its educational needs (Tan 2002). This led to the restructuring of the higher education sector in Malaysia through a plan to position Malaysia as the regional centre of educational excellence (Kasim 2001). This is described by Rudner (1998, p. 91 cited in Philips and Stahl 2002) as a “two-pronged strategy” that aims at expanding the domestic university and college systems to meet the domestic educational needs, as well as opening up Malaysia to

participate in the international trade in higher education services. Towards this end, the Malaysian government has enacted six Acts within the two years, 1995 to 1997 to reform the overall education sector (*The Malaysian Education System: Overview of Public and the private Education, 2004*) These Acts are:

- The Education Act, 1996
- The Private Higher Educational Institutions Act, 1996
- National Council on Higher Education Act, 1996
- National Accreditation Board Act, 1996
- Universities and University Colleges (Amendment) Act, 1996
- National Higher Education Fund Board Act, 1997

Prior to the restructuring, the Malaysian higher education sector has been characterized only by the private colleges and government institutions. As a result of these Acts, the post-restructuring period of the higher education sector in Malaysia saw the establishment of private universities and branch campuses of foreign universities. A number of private colleges were allowed by the government to offer full foreign university degree programs. These Acts also allowed for the recruitment of foreign students as well as teaching staff. This was to ensure that these institutions could produce a competent workforce equipped with the skills, knowledge, attitude and behaviour to meet the demands of the high-technology era as well as internationally recognized qualification. This period effectively saw the Malaysian higher education sector characterized by categories of institutions namely private colleges, private universities and public institutions.

#### Balanced Scorecard Card and the implications of performance measurement in higher education sector

The concept of the BSC was first introduced by Robert S. Kaplan and David P. Norton (1992) in their now widely cited Harvard Business Review article, “The Balanced Scorecard-Measures that Drive Performance” (Demetrius *et al.* 2005, pg. 222). The BSC is primarily developed to remove the drawback of the traditional performance assessment such as the traditional system which does not link to the firm’s strategy; and to satisfy the need of performance measurement and management in the knowledge-based economy era. Kaplan and Norton developed the BSC concept after gathering opinions from researchers and business practitioners, and performed a study of future performance assessment system in technology research industry, traditional industry, and service industry (Hsu, 2005). The BSC views organizational performance from four dimensions (Hoque *et al.* 2000):

**Financial perspectives-** includes profitability measures such as operating income, return-on-capital-employed, sales growth, generation of cash flow, or economic value added;

**Customer perspective-** encompasses such measures as customer satisfaction, customer retention, new customer acquisition, customer response time, market share, and customer profitability;

**Internal-business-processes perspective-** the key measures include product design, product development, post-sale service, manufacturing efficiency, quality etc; and

**Learning and growth perspective** – measures the ability of employees, information systems, and organizational procedures to manage the business and adapt to change.

A critical factor of an effective BSC is the alignment of all the measures in the four perspectives with the company’s vision and strategic objectives (Demetrius *et al.* 2005).

According to the author, Kaplan and Norton noted that the BSC allows managers to track short-term financial results while simultaneously monitoring their progress in building the capabilities and acquiring the intangible assets that generate growth for future financial performance. Thus, the BSC enables managers to monitor and adjust the implementation of their strategies and to make fundamental changes in them.

Although the BSC initially was widely practiced by the manufacturing industry and business practice, the concept now is getting popular among the service industry such as education, banking and etc. Cullen, Joyce, Hassall, and Broadbent (2003) proposed that a BSC be used in educational institutions for reinforcement of the importance of managing rather than just monitoring performance (cited in Demetrius et al 2005). The BSC concept is already used by some of the universities to measure the academic and non academic performance. For instance Sutherland (2000) reported that at the Rossier School of Education at the University of Southern California adopted the BSC assess its academic program and planning process; Chang and Chow (1999) reported that responses in a survey of 69 accounting department heads were generally supportive of the BSC's applicability and benefits to accounting programs (cited in Demetrius *et al* 2005). Therefore, the concept of BSC, which was proposed by Kaplan and Norton (1992), is widely used by service industry to access their performance. Thus, the finding of this research provides valuable contribution to the theoretical knowledge of BSC usage and application in Malaysia in the educations sectors.

### Research Methodology and Design

This study will focus on Malaysian HEIs, both public and private, that offer at least academic programmes at the Diploma level. This included the following groups of institutions in the survey:

- a. All public universities.
- b. All public university colleges.
- c. All local private universities.
- d. All foreign universities.
- e. All private university colleges.
- f. All private colleges that have joint programs with local public universities.
- g. 10 private colleges that have joint programs with foreign universities.
- h. 10 private colleges that offer their own program which are accredited.

Total number of 338 questionnaires was sent out to the selected higher education institutions in Malaysia. The questionnaire was divided into four sections. Sections one and two test the first research objective and Sections three and four tested the second research objective of this study. Questionnaire relating to the four BSC perspectives were mailed to relevant officers and executives of private and public higher educational institutions in Malaysia. In addition, in an effort to ensure high response from the selected respondents, the members of the research team also conducted face-to-face interview with the selected officers

In order to achieve the first objective, the questionnaire included close-ended questions using a 10 – point Likert scale which was analysed to measure the extent to which BSC performance measurement mechanisms are used by the HEIs. The data collected was analysed using factor analysis, grouping the responses in accordance to the BSC perspectives.

From the grouping it was assessed whether HEIs use the BSC mechanism as a performance measurement tool.

Further to this the study also identified indicators or drivers commonly used by HEIs to measure performance. The indicators used in the questionnaire are commonly cited in the literature related to this such as Kaplan (1998), Kaplan and Norton (1996), and Kaplan and Atkinson (1998).

The second objective, to test the knowledge and assess the awareness of BSC by HEIs, a list of true and false questions were used. Respondents were required to provide a response for each of the question. Percentage of correct responses was calculated for each respondent. The percentage will indicate the respondent’s knowledge and awareness about BSC, where a high percentage score would indicate greater knowledge about the techniques and a low percentage score would mean lack of knowledge and awareness about the technique.

### Data Collection

The initial response rate was 12%. Contributing to this poor response rate is the large number of questions in each section. In addition, some HEIs did not complete the questionnaire for reasons of confidentiality. The response rate improved when efforts were made by sending fax to all selected institutions, yet to respond to the questionnaire. At the final stage, a research assistant was employed to follow-up. These efforts increased total collection of completed questionnaires to 46 increasing overall response rate to 15%.

Table 1 provides detail number of responded institution by category.

Table 1 : No of questionnaire collected as per category of institutions.

<u>Category of Institutions</u>	<u>Total Send out</u>	<u>Received</u>	<u>Rejected</u>
Public University	9	2	1
Private University (Local)	11	8	0
Private University (Foreign Branch)	4	2	0
Public University College	12	0	0
Private University College	12	2	0
Private Colleges	290	32	23
<b>Total</b>	<b>338</b>	<b>46</b>	<b>24</b>
% Received		14.65%	

### Data Analysis and Discussion

The factor analysis for research objective one, the extent of the utilization of performance measure tools for financial perspective, shows that the HEIs use finance as a measure of their performance. Table 2 shows that the factor analysis of twenty items found five factors with eigen values greater than 1. Factors One, Two and Three indicate that the higher education institution in Malaysia are using performance measurement tool to measure investment on resources, cost control and corporate funding. Factors Four and Five measure asset utilization and income from market segment as the measures of financial dimension. The

research findings provide evidence that HEIs use the first perspective of BSC to evaluate whether strategies contribute to bottom-line improvement.

*Table 2 – Financial Dimension*

MEASURES OF DIMENSION	FACTORS				
	1	2	3	4	5
RESOURCES FOR ENHANCING EXISTING PRODUCTS AND SERVICES	0.874292				
RESOURCES FOR DEVELOPING NEW PRODUCTS AND SERVICES	0.815263				
FUNDING FOR ICT	0.759625				
INVESTMENT IN MANAGEMENT SYSTEMS AND INFRASTRUCTURE	0.746241				
CONTROLLING COST WITHOUT COMPROMISING ON ORGANIZATIONAL OBJECTIVES		0.793645			
INVESTMENTS ON INTELLECTUAL AND HUMAN CAPITAL		0.676454			-0.51614
PROVISION OF RESOURCES AND SERVICES IN THE VALUE FOR MONEY	0.472312	0.655714			
GOOD FINANCIAL STANDING		0.605356			
NURTURING AND DEVELOPING CUSTOMER RELATIONSHIP		0.488931			0.446217
OBTAINING EXTERNAL GRANTS FOR TRAINING OPPORTUNITIES			0.858442		
COMPARISON WITH OTHER HEI			0.720896		
CORPORATE FUNDING FOR STUDENTS			0.703199		
RESEARCH GRANT			0.563926		-0.63719
COST-EFFECTIVE TEACHING AND LEARNING METHOD				0.794358	

BUDGET MANAGEMENT				0.684104	
PRODUCTIVITY IMPROVEMENT, ASSET UTILIZATION AND RISK MANAGEMENT				0.601515	
FINANCIAL MEASUREMENT (ROCE, OI & GM)		0.506264		0.531529	
INCREASE IN STUDENT FEES			0.433359	-0.56985	0.458292
SALES GRWOTH IN TARGETED MARKETS					0.656185
GROWTH IN REVENUES					0.605545

As for customer perspective, table 3 below, shows how factor analysis grouped the performance tool into four factors. The first factor of customer perspective shows that the HEIs emphasis the student as their prime customers. Included in this measure are service level quality, costs and quality of delivery. The performance measurement tool on the first factor also indicates that the institutions emphasis on customer relationship which relates to the delivery of its services to the customers. The other three groups of factors indicate that the HEIs emphasis on image and reputation which enables an institution to proactively define itself for its customers. The result provides sufficient evidence that the HEIs use the second perspective of BSC to articulate unique customer and market-based strategies.

*Table 3 – Customer Perspective*

	1	2	3	4
EMPHASIS ON QUALITY COURSE	0.776545	0.443117		
EMPHASIZING ON CUSTOMER SATISFACTION	0.76686			
ATTENDING TO THE NEEDS OF STUDENTS	0.749523			0.451389
EMPHASIS ON QUALITY INSTRUCTION	0.732754	0.468682		
SERVING STUDENTS	0.702381		0.547909	
SERVING THE LOCAL COMMUNICTY (PUBLIC)	0.701852			
EFFECTIVENESS IN RETAINING STUDENTS	0.640164	0.467041		
SERVING THE NATION	0.485983	0.46039	0.474041	
EMPHASIS ON A DIVERSE RANGE OF PROGRAMS / COURSES OFFERED.		0.804061		
EMPHASIS GAIN IN MARKET SHARE		0.706472		
RECOGNITION OF THE IMPORTANT ROLE OF ALUMNI AND ITS CONTRIBUTIONS TO ORGANIZATIONAL GROWTH		0.651626		

EMPHASIS ON THE SATISFACTION OF THE EMPLOYERS OF OUR GRADUATES	0.601975	0.604873		
SERVING THE INDUSTRY (PRIVATE SECTOR)			0.820263	
SERVING THE SHAREHOLDERS/STAKEHOLDER			0.761449	
ATTENDING TO THE NEEDS OF PARENTS				0.798275
ATTENDING TO THE NEEDS OF RESEARCH AND CONSULTANCY CLIENTS	0.411273			0.768006
SERVING THE INTERNATIONAL COMMUNITY		0.439881		0.570987

The third perspective, internal business process has great impact on customer satisfaction and achievement of an institution's financial objectives. The main business processes include innovation, operations and post service. Innovation stresses on long-term development and creation of new products and services. The operations process is related to the existing products and services and delivery to existing customers. The process stresses on efficient, consistent and timely delivery of existing services to existing customers. Post-service process refers to the services rendered to customers after the original delivery of services. As for the internal business perspective the factor analysis grouped the measurement tool into four groups. This factor indicates that the higher education institution includes performance measurement tool that evaluate the main business process that include innovations (Factor 1), operations (Factor 2 and 3) and post-service (Factor 4). Therefore, the research provides evidence that the HEIs use some form of performance measurement mechanism and emphasis on the three aspects of the internal business process.

*Table 4 – Internal Business Perspective*

	1	2	3	4
OPERATES INNOVATIVELY	0.848579			
EMPHASIS ON EXCELLENCE IN DEVELOPING LEARNING SKILLS	0.840239			
OPERATES EFFICIENTLY AND EFFECTIVELY	0.827116			
EMPHASIS ON EXCELLENCE IN ADMINISTRATIVE AND FACULTY MEMBERS PERFORMANCE	0.816654			
DELIVERS INFORMATION RESOURCES IN A TIMELY, EFFICIENT AND ACCURATE MANNER	0.803014			

PROVIDES FACILITIES THAT PROMOTE STAFF PRODUCTIVITY AND QUALITY SERVICES	0.782822			
CONTINUOUSLY IDENTIFIES, REVIEWS AND IMPROVES THE PROCESSES	0.768604			
EMPHASIS ON EFFECTIVE TEACHING AND LEARNING METHODS	0.749973		0.452702	
EMPHASIS ON INFORMATION TECHNOLOGY	0.731577			
EVALUATE OUR PROGRAMS/COURSES	0.63809			0.534654
EMPHASIS ON THE INTRODUCTION OF NEW PROGRAMS/COURSES	0.610632	0.559268		
INCREASES PROGRAMS FOR DISTANCE LEARNING		0.874293		
INCREASES PROGRAMS FOR PART-TIME STUDENTS		0.869111		
INCREASE IN A DIVERSE STAFF POPULATION		0.716057		
INCREASES PROGRAMS FOR SLOW-LEARNERS		0.672771		
INCREASES THE PROGRAM OFFERED		0.420429	0.79601	
INCREASE IN A DIVERSE STUDENT POPULATION	0.490641		0.694337	
SYSTEMATIC ALUMNI TRACKING				0.775242
EMPHASIS ON ITS REPUTATION THROUGH RESEARCH AND DEVELOPMENT				0.723823

As for the last perspective, the result showed three factors for the learning and growth perspective. The three factors show that the higher education institutions uses performance measurement tool that concentrate on creating long term growth and improvements. The analysis provides evidence that the institutions employ certain form of performance mechanisms employed to assess the system and resource capabilities, such as the capabilities of the information system and employees. Based on the analysis, the group of performance measurement tool in factor one and two concentrate on assessing the innovation in teaching system and building the resource capabilities. As for the last factor the performance tools concentrate on innovation of programs offered by institutions.

*Table 5 – Innovation and Learning Growth Perspective*

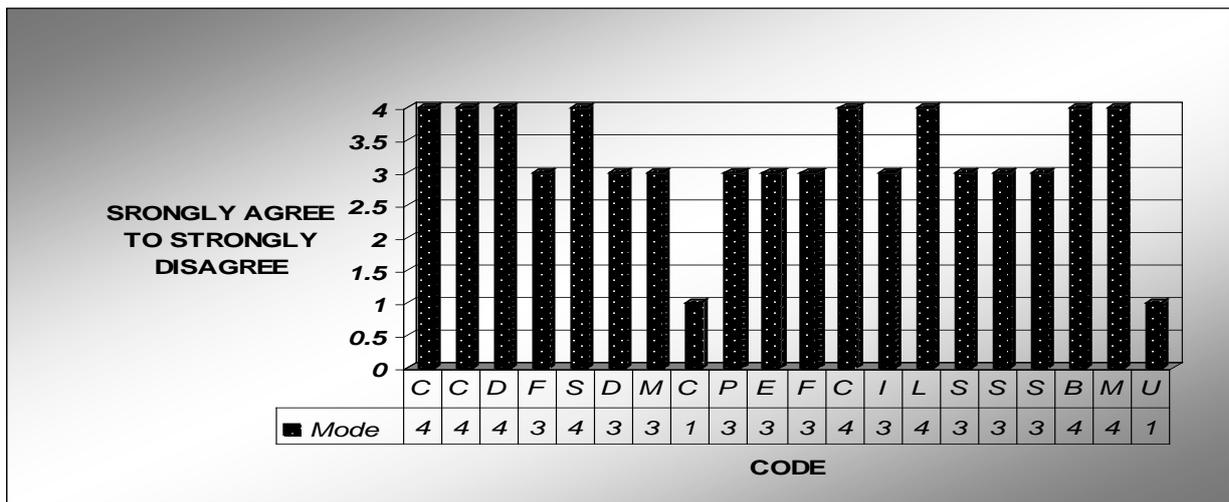
	1	2	3
EMPHASIZES ON STAFF DEVELOPMENT	0.874125		
FOCUSES ON RECRUITING, DEVELOPING AND RETAINING QUALIFIED STAFF	0.873223		
DEVELOPS AND MAINTAINS A CULTURE OF ASSESSMENT	0.825212		0.417694
IN HOUSE TRAINING	0.774147		
CONTINUOUSLY UPGRADES PROGRAMS/COURSES TO MEET NEW DEMANDS	0.727929	0.579221	
ENCOURAGE CREATIVITY, COOPERATION AND INNOVATION	0.726492		0.428087
EMPHASIZES ON REGULAR CURRICULUM REVIEW	0.718731	0.406072	
ADAPTS TO CHANGES IN CIRCUMSTANCES, SERVICE REQUIREMENTS AND NEW PROGRAMS	0.68512	0.553738	
EMPHASIS ON INNOVATIVE TEACHING AND LEARNING METHODS	0.665014	0.486175	
INCREASES KNOWLEDGE TO THE LOCAL AND INTERNATIONAL COMMUNITIES		0.718271	
INNOVATION AND GROWTH		0.718225	0.516444
NO OF UNITS/SUBJECTS USING INTERNET IN T&L		0.714641	
USES PERFORMANCE MEASUREMENT TOOLS FOR FUTURE STRATEGIC PLANNING	0.505569	0.617404	
EMPHASIZES ON DISTANCE LEARNING			0.840256
EMPHASIZES ON THE LEVEL OF RESEARCH	0.469899		0.649576
EMPHASIZES ON CONSULTANCY SERVICES		0.550467	0.6187

The second objective of the study is to assess the level of knowledge and awareness among the HEIs. The analysis as shown in Table 6 below reveals that the awareness of using BSC approach is high. The findings support and complement the first objective. This means that

HEIs are aware of the BSC approach as a performance measurement tool. This is evidenced by the research finding as shown in Table 6 below, that majority of respondents selected to strongly agree on their competency to use the BSC, its use at corporate level and departmental Level and the benefits of using the BSC.

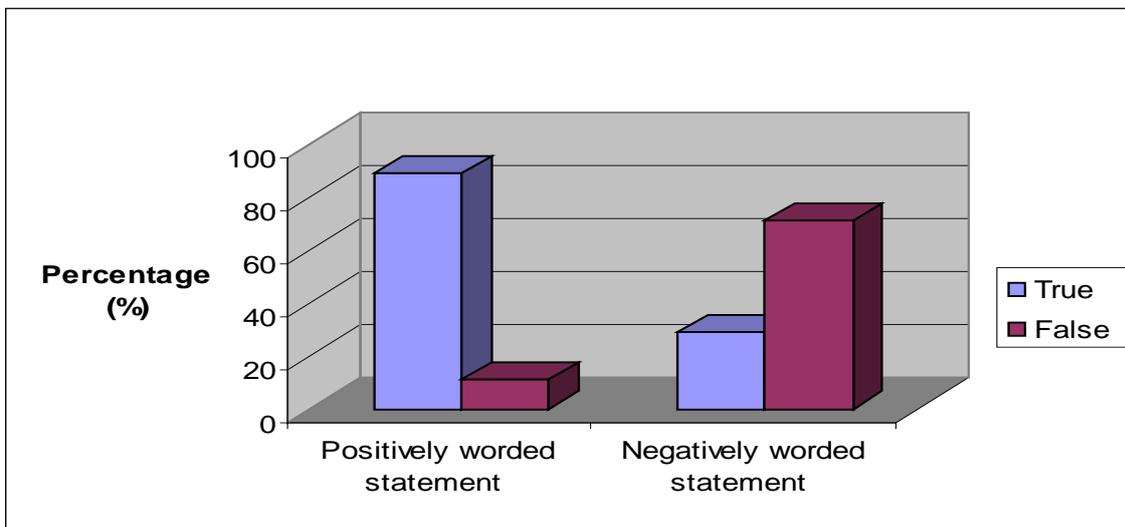
Furthermore the table 6 below shows that BSC approach has not been in use for a very long time by the majority of HEIs (Code: U). The finding also revealed that the development of this tool has not been outsourced to management consultant (Code: C). The reason for this could be that HEIs have in-house expertise to develop the institutions’ performance measurement system using the BSC approach.

*Table 6 : Assessment of awareness*



The above analysis is also supported by the finding on the level of knowledge of using BSC. As indicated in table 7 below, 89% of respondents correctly identified the positively supported statements and 71 % supported the negatively supported statements about the BSC approach uses in measurement tool. This means the respondents have good knowledge about the BSC and are able to use BSC as the institution’s performance measurement tool.

*Table 7 : Assessment of Knowledge*



## Limitations

This research required data to be collected from the various HEIs in Malaysia. Initially the questionnaire that was prepared had a total of nearly 300 questions. This total was reduced to 202 questions with comments and feedback received from focus groups who commented that the number of questions were too many for respondents. The research team feels now that even after scaling down, this number is too many and this could have contributed to the low response rate from participants in the survey.

Another limitation identified in this study is the likert scales used in some of the sections in this questionnaire. The choice given to respondents was to choose from 1-10. This was seen as too many as it created difficulty in defining each of these categories. It could have also provided with difficulty in the minds of respondents when selecting their responses. This further led to difficulties in creating the SPSS template when it was required to provide definition of variables and labeling responses.

## Conclusion & Recommendations

The research had two major objectives. The first objective of the research was to evaluate performance measurement at HEIs in Malaysia. The data analysis has provided evidence that HEIs use financial dimensions, customer satisfaction, internal process and learning and growth as part of their performance measurement tool.

The second objective was to assess the level of knowledge and awareness of BSC among HEIs in Malaysia. Again it is evident from the data analysis that there is a high level of awareness and knowledge of BSC among the HEIs. The research further reveals that majority of the HEIs develop their own performance measurement tool using the BSC approach. However, the research finding reveals that the usage of BSC is relatively new among HEIs.

The research team successfully completed the two research objectives. It recommends further research into the BSC model that will suggest its use for HEIs currently not using BSC and where applicable to improve its usage by HEIs currently using it.

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