

The Implementation of Balance Score Card for Performance Measurement in Small and Medium Enterprises: Evidence from Malaysian Health Care Services

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ABSTRACT

The needs for SMEs to measure their performance is to improve their service to customers, employees, societies and stakeholders. The purpose of the study was to investigate the implementation of Balance Score Card as the performance measurement system in SMEs. In this study, 1000 mailed questionnaires were sent to health care services in Malaysia. Out of this, only 105 responded and data collected were analyzed.

Using factor analysis with varimax rotation technique, the study found four factors with eigenvalue value more than 1.0. Those factors that explained total variance of 69.346 percent, indicated the four components of BSC implemented by SMEs in Malaysian Health Care Services. Those components are as follows: learning and growth, mission and vision, customer and internal business perspective.

Key words: Balance Score Card, Performance Measurement, Small and Medium Enterprise

1. Introduction

Small and Medium Enterprises (SMEs) have played a crucial role in economic development in Malaysia. Their contributions to the economic and employment in the country are undeniable. SMEs have been progressively developing as the engine of growth for the Malaysian economy. It is now recognized that SMEs make a significant contribution to the socio-economic and political infrastructure of developed and

developing countries (Matlay and Weshead, 2005). Normah (2006) in her survey found that 99 percent or 519,000 of the total SMEs establishments are in the main economic sectors of manufacturing, services and agriculture and 86.5 percent represent the services sector. Being a key component of the government's economic growth strategy, a more competitive and resilient SME sector needs to be developed. Porter (2006) claimed that healthy and growing SME sector is recognized to be vital for sustainable competitive advantage and economic

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development at local, regional and national levels.

It is increasingly recognized that SMEs tend to be the main source of employment in an economy. SMEs also stimulate private ownership and entrepreneurial skills; provide broad based sources of growth whilst also acting as incubators for developing domestic enterprises into large corporations. In researches by Robinson and Pearce (1984); Abdullah (2000) and Wang *et al.* (2006), they agreed that SMEs stand out in many important industries such as retailing, service and construction and from crucial forward and backward links in the supply chain of large scale capital intensive manufacturing industries, for instance automotive, mining, marine and defense. In addition, the existence of SMEs alongside large firms gives competitive and structural balance to industries and marketplaces or else it will be dominated by only a few large players (Beaver & Jennings, 2000; Peacock, 2004). SMEs position themselves to cater the segment that complements the presence of large industries. In other words, SMEs often occupy fragmented or niche markets which large firms either cannot economically enter or are reluctant to enter because of 'unattractive' risk-return considerations (Brouthers *et al.*, 1998).

Another important feature of SMEs is, even though SMEs have limited resources, they are capable to produce new products and innovations. This enables them to participate in the competitive setting. This is emphasized by Acs and Audresch (1990) that generally SMEs have limited resources for research and development (R&D) investment, they contributed positively and disproportionately to innovative activities. Perhaps as a result of the association with entrepreneurial activity and innovations, SMEs serve an important 'seedbed' role for the growth of the industries and the establishment of future large companies (Howard, 1997).

The overall importance of SMEs is summarized by Ibielski (1997 quoted in Hashim & Abdullah 2000) as follows

"[SMEs] are mighty minnows, reflecting the competitive spirit that a market economy needs for efficiency; they provide an outlet for entrepreneurial talents, a wider range of consumer goods and services, a check to monopoly inefficiency, a source of innovation, and a seedbed for new industries; they allow an economy to be adaptable to structural change through continuous initiatives embodying new technologies, skills, processes or products."

In recognition of this, the Government has made the development of SMEs a high priority area. This is reflected in the national development agendas, namely Ninth Malaysia Plan (9MP) and the Third Industrial Master Plan (IMP3), in which the key strategies for SME development are outlined for the 2006-2010 and 2006-2015 period respectively. The Census of Establishment and Enterprises 2005 found that most of business establishment (99.2 percent) is SMEs of which about 80 percent are micro enterprises. The Census results also showed that SMEs are a major source of employment, offering for over 5.6 million jobs and accounting for 56 percent of total employment. However SME contribution to the economy is still low – SME contributed only 32 percent of gross domestic product and 19 percent of the total export value.

Table 1. Macro Performance of SMEs

	2003 (%)	2005 (%)
SMEs' contribution to GDP	31.9	32.0
SMEs' contribution to employment (excl. Govt.)	55.8	56.4
SMEs' share of total exports	18.9	19.0

Source: Data estimated based on the Census 2005's profile and other sources.

According to Venkatraman and Ramanujam (1987), the performance of SMEs; their growth and profitability is fundamental to

the overall health of the economy. Although not all small firms pursue growth goals, their mere survival and provision of job for the owner-managers and/or their families add to the economic wellbeing of a nation (Kotey and Meredith, 1997). Herewith, it is important for the SMEs to measure their performance not only to know how the business is performing but also to enable it to perform better. Thus, the ultimate aim of implementing a performance measurement system is to improve the performance of an organization so that it may better serve its customers, employees, owners and stakeholders.

1.1 Background of Study

In Malaysia, there has been numerous support programmes provided by the government agencies and institutions aimed at fostering the development of SMEs. These support programmes can be broadly divided into five aspects among which are: financial and credit assistance; technical and training assistance; extension and advisory services; marketing and market research and infrastructure supports. Despite the fact that there are as many as 12 ministries and 40 government agencies such as Ministry of Entrepreneur and Cooperative Development (MECD), Ministry of International Trade and Industry (MITI), Majlis Amanah Rakyat (MARA), Small and Medium Industries Development Corporation (SMIDEC), Malaysian Industrial Development Finance Berhad (MIDF) and institutions that are involved in providing support programmes for SMEs, the accessibility of these supports to SMEs and how far SMEs make use of them are indeed difficult to ascertain.

For 2006, a total of 245 programmes involving financial commitment of RM3.9 billion have been identified for implementation to accelerate the development of SMEs (SMIDEC, 2007). These are aimed at strengthening the enabling infrastructure to support SMEs development. A well-developed financial infrastructure is able to meet the diverse financing needs of SMEs is essential to

support the competitiveness and continuous growth of SMEs.

Financing is a both demand and supply issue which is subject to the acceptability of a certain level of risky by the financier in return for an acceptable level of returns. SMEs generally fail to fulfill the institutional requirements for standard accounting and other financial information. Without complete financial and accurate updated information, it is difficult for financier to evaluate the performance of the SMEs and this can affect the evaluation of risk. Furthermore, the uses of solely financial information in evaluating performance measurement of SMEs were made obsolete in the information era.

A performance measurement system enables an organization to plan, measure and control its performance according to a predefined strategy. In short, it allows a business to achieve desired results. Performance measurement literatures have found that the traditional performance measures, such as profit, return on investment (ROI), sales growth were insufficient for decision making, planning and controlling operations in today's rapidly change and hyper-competitive environment. They explained the results of past transaction and ignore what the future benefits could be. Having performance measurement employed in the organization, the SMEs are at better chance to obtain assistance which was formed to help SMEs.

1.2 Statement of Problem

One of the pertinent issues faced by SMEs is lack of accessibility to capital and credit facilities for the purpose of start-up and expansion. They failed to obtain finance mostly due to their failure in providing sufficient business information; financial guarantees as well as they are insufficiently informed or poorly advised about the appropriate sources of finance. Other reason is the time taken for the loan to be process.

“I am sure no bank will want to delay unnecessarily in giving out loans unless there are specific reasons. I can share with you that people have told me that it took so long to clear a loan but when I checked it was due to incomplete documentation” (Dr. Ng, 2006).

Due to the incomplete documentation, financial providers found difficulties in assessing the performance of the SMEs. Therefore, it is important for the SMEs to maintain rigorous business and financial records and submit complete information. Ennew and Binks, (1995), and Lattimore *et al.*, (1995) agreed that SMEs are lack of necessary information and knowledge which hamper them to approach the financiers. The inability for SMEs to get the financial assistance will hinder them to grow and develop. As a result, it would affect the performance of SMEs.

Due to the problem, the need for better performance measurement and proper reporting on SMEs performance is highlighted. Balance Score Card (BSC) is recommended to be adopted by the SMEs. BSC translate the strategy to operational terms. SMEs could benefit the use of BSC in promoting growth, tracking performance, providing focus on what is important to the company, aligning goals and accountability.

1.3 Research Objective

This study attempts to contribute to the body of knowledge in the area of performance measurement systems by focusing on issues relating to multiple performance measures which are conceptualized according to the BSC framework. The scorecard provides an enterprise a view of an organization's overall performance. Finally, it is intended by this study to create awareness on the part of owners/managers of the need for long term planning, especially the application of BSC in managing SMEs in order to ensure their continuous survival.

1.4 Scope of Research

The research covered small and medium private sector health services establishments in Melaka, Negeri Sembilan and Johor. These included the medical services and dental services. The medical services comprised of general medical clinics and specialist medical clinics. Specialist medical clinics comprised ear, nose and throat clinics, orthopedics clinics, eye specialist clinics, child specialist clinics, etc.

The private clinics are for-profit entities that provide modern inpatient care. Private practitioner consultation is the most widely used service in the private sector by the healthcare recipients. These are outpatient treatment facilities mostly setup by individual physicians, where payment is based on fee for service direct cash payment. Ambulatory private care is mainly provided by full-time general practitioners and supplemented by private practice of government doctors (Gruen *et al.*, 2002).

2. Theoretical Background

2.1 Performance Measurement

Researchers have focus on performance measurement because critical evaluation of measurement approaches has been seen as a way to improve understanding of the underlying construct (Cameron & Whetten, 1983; Venkatraman & Ramanujam, 1986). Venkatraman & Ramanujam (1986) viewed 'business performance' that includes financial and operational performance and is a subset of the overall concept of organizational effectiveness, as a main domain of the performance concept in strategic management. Neely *et al.*, (1995) defined performance measurement as

“... the process of quantifying effectiveness and efficiency of action. Effectiveness is referred to the degree of which stakeholder requirements are met, while efficiency measure shows the company's

resources are used when providing a certain degree of stakeholder satisfaction.”

Traditional financial measures such as return on investment (ROI), net profit, sales growth, and market share fail to capture the true picture of a firm’s value proposition because they focus on the past. They consider the results of past transaction. Traditional financial measures are only part of the information that managers need to successfully guide their organizations through highly competitive marketplaces.

In early 1990s, Robert Kaplan and David Norton (1992) develop a management and development tool called Balanced Scorecard (BSC). It includes financial and non-financial measures, more specifically five perspectives that comprise mission and vision, financial, business process and learning and growth. Firms adopting the BSC usually increase the number of performance measures they use and identify a much broader group of measures than those they traditionally used.

2.2 Balanced Scorecard

The BSC is one of the most influential ideas of the twentieth century according to Harvard Business Review (Niven, 2002). BSC is a strategic performance measurement system. It was developed to guide organization to achieve breakthrough results by embedding strategy at the heart of the organization. The concept was significantly different than any existing performance measurement system and generated considerable excitement.

BSC is a multi-criteria strategic performance and measurement tool. The BSC measures an organization’s performance from five key perspectives: financial, customer, internal business, learning and growth and mission and vision. Figge *et al.*, (2002) state that;

“The concept of the BSC is based on assumption that the efficient use of investment capital is no longer the sole determinant for competitive advantages, but increasing soft factors such as intellectual capital, knowledge

creation or excellent customer orientation become more important.”

2.3 Small Medium Enterprises (SMEs)

Malaysia adopted a common definition of SMEs to facilitate identification of SMEs in the various sectors and subsectors. This has facilitated the government to formulate effective development policies, support programmes as well as provision of technical and financial assistance. An enterprise is considered an SME in each of the respective sectors based on the annual sales turnover or number of full-time employees as shown in the table below:

Table 2. SME Definitions in Terms of Annual Sales Turnover

Sector Size	Primary Agriculture	Manufacturing (including Agro-based) & MRS	Services Sector (including ICT)
Micro	Less than RM200,00	Less than RM250,000	Less than RM200,000
Small	Between RM200,000 & less than RM1 million	Between RM250,000 and less RM10 million	Between RM200,000 and less than RM1 million
Medium	Between RM1 million & RM5 million	Between RM10 million & RM25 million	Between RM1 million and RM5 million
SME	Not exceeding RM5 million	Not exceeding RM25 million	Not exceeding RM5 million

Source: Small and Medium Industries Development Corporation (SMIDEC), 20

Table 3. SME Definitions in Terms of Full-Time Employees

Sector Size	Primary Agriculture	Manufacturing (including Agro-based) & MRS	Services Sector (including ICT)
Micro	Less than 5 employees	Less than 5 employees	Less than 5 employees
Small	Between 5 and 19 employees	Between 5 and 50 employees	Between 5 and 19 employees
Medium	Between 20 and 50 employees	Between 51 and 150 employees	Between 20 and 50 employees
SME	Not exceeding 50 employees	Not exceeding 150 employees	Not exceeding 50 employees

Source: Small and Medium Industries Development Corporation (SMI

2.4 Health Services

The definition of health services adopted in this thesis is based on the recommendation of the 'Malaysian Standard Industrial Classification (MISC) and definition used by the Ministry of Health, Malaysia (Health Economic Census, 2006).

2.1.1 Medical services

Refer to the services given medical doctor and surgical specialist, physicians, physiotherapists, radiologists and other professionals and para-medical practitioners on own account. Included are services provided only by establishments operated by doctors (issued with annual practicing certificates) registered with the Malaysian Medical Council (MMC) maintained under Medical Act 1971 (Amendment) 1993.

2.1.2 Dental services

Refer to the provision of dental and surgical services including fabrications of dentures by dentists on own account. Included are services provided only by establishments operated by dentist (issued with annual practicing certificates) registered with the Malaysian Dental Council (MDC) maintained under the Dental Act 1971.

3. Statistics Data

3.1 Response and Sample Characteristics

The researcher sent 1000 questionnaire to the target population. Out of this, only 105 questionnaires were returned which was equivalent to 10.5 percent of the total respondents. As mentioned in the previous chapter, even though this type of survey is preferable for the wider area coverage and cost-effective, it is known for the low response rate.

Responses to the question regarding gender revealed that male doctor/entrepreneur accounted for 75.2 percent and female doctor/entrepreneur comprised 24.8 percent of

the responses. Age of the company is important due to the company's experiences and maturity.

A total of 41 percent of the responses claimed that they have been operating for more than 21 years. Alongside, 27.6 percent have been in business for 16 to 20 years and 26.7 percent of the companies have been in business for 11 to 15 years and 4.8 percent were operating below 10 years time.

The study showed that sole proprietor dominated the types of business with 73.3 percent, followed by private limited company (20.0 percent) and the joint venture 6.7 percent. This showed that all of the respondents are from small enterprises. It is important to understand the type of ownership as this will lead to the result of the decision made by the owner.

Table 4. Company's Establishment

	Frequency	Percent
5 to 10 years	5	4.8
11 to 15 years	28	26.7
16 to 20 years	29	27.6
21 years and above	43	41.0
Total	105	100.0

From the responses, 73.3 percent of the respondent stated that they use their own capital to operate the business. This is followed by 26.7 percent of respondent using loan equity.

Table 5. Type of Ownership

	Frequency	Percent
Own capital	77	73.3
Loan equity	28	26.7
Total	105	100.0

In terms of the amount of capital, 46.7 percent affirmed that they invested RM50,000 to RM100,000 to the business. An amount of 26.7 percent invested below RM50,000 and 17.1 percent invested RM100,001 to

RM200,000. Out of this, 9.5 percent invested more than RM200,000 in order to operate the business.

The companies were also asked about who managed their account. A total of 49.5 percent of the respondents claimed that they appointed accounting consultant to keep their account. Some of the respondents assigned qualified staff, where 14.3 percent have qualified full time staff while 12.4 percent engaged qualified part time staff to do their account. Other than that, there were respondents who take into service non-qualified staff.

Table 6. Account Keeper

	Frequency	Percent
Accounting consultant	52	49.5
Qualified full-time staff	15	14.3
Qualified part-time staff	13	12.4
Non-qualified full-time staff	18	17.1
Non-qualified part-time staff	7	6.7
Total	105	100.0

Around 17.1 percent hired non-qualified full time staff while 6.7 percent engaged non-qualified part-time staff. The decision on who keeps the accounting record would lead to the result, whether the accounting information are kept following the accounting standard. Approximately, 65.7 percent affirmed that their accounts are kept within the accounting standard while 34.3 percent stated that they do not keep their accounting information according to the standard.

3.2 Descriptive Statistics

Descriptive analysis on the four components are displayed in Table 7. The Table shows that responding organization place a major weight on internal business perspective (mean = 4.008), followed by

customer perspective (mean = 3.988), mission and vision (mean = 3.985) and learning and growth perspective (mean = 3.933). All the Cronbach Alpha coefficients exceeded the lower limit of acceptability, which is usually considered to be 0.70 (Nunnally, 1978).

4. Data Analysis and Results

4.1 Sampling Appropriateness

It is important that all statistical assumptions for factor analysis are considered so as to make sure the analysis is appropriate. Among the first consideration before conducting factor analysis is the issue regarding sample size. According to Hair *et al.*, (1998) as cited in Izaidin *et al.*, (2008), a researcher would not factor analyze a sample of fewer than 50 observations, and preferably the sample size should be 100 or larger. The rule of thumb, the minimum is to have at least five times as many observations as there are variables to be analyzed, and the more acceptable size would be to have a ten-to-one ratio (Hair *et al.*, 1998; Tabachnick and Fidell, 2001 as cited in Izaidin *et al.*, 2008).

Table 7. Descriptive Statistic

	Min	Max	Mean	Alpha
Cronbach				
Internal	3.771	4.210	4.008	0.863
Customer	3.838	4.238	3.988	0.805
Mission3.724	4.219	3.985	0.865	
Learning	3.648	4.257	3.933	0.907
Financial	3.181	3.743	3.386	0.851
Overall	1.038	4.257	3.225	0.900

In this study, the sample size is 105 which are above the sample criterion of 50 samples. The initial number of independent variable items to be analyzed was 30 but later was reduced to 21 which exactly met the minimum items-observations ratio criterion. The items were dropped in the following analysis due to low loading.

Another mode of determining the appropriateness of factor analysis is to examine the entire correlation matrix. The Bartlett's test of sphericity is a statistical test for the presence of correlations among variables, should be significant ($p < 0.05$) for the factor analysis to be considered appropriate (Hair *et al.*, 1998; Pallant, 2005 as cited in Izaidin *et al.*, 2008).

The distribution in the populations ought to be normal in factor analysis. This assumption applies for all variables and all linear combinations of the variables. It is tested by Bartlett's test that the data derived from multi-variable normal distribution (Tavancil, 2002), which revealed 1712.0 ($p < 0.000$). The degree of freedom is 210.

Another measure to quantify the degree of inter-correlations among variables and the appropriateness of factor analysis is the measure of sampling adequacy (MSA). Sampling adequacy is measured by the Kaiser-Meyer-Olkin (KMO) statistics. KMO varies from 0 to 1.0. A value of 0 indicates that the sum of partial correlation is large relative to the sum of correlation. A value close to 1 indicates that patterns of correlations are relatively compact and so factor analysis should yield distinct and reliable factors. Kaiser (1974), recommends accepting values greater than 0.5 as acceptable. Table 8 shows the Kaiser values and descriptions.

Table 8. Kaiser Value and Description

>0.9	Marvelous
>0.8	Meritorious
>0.7	Middling
>0.6	Mediocre
>0.5	Miserable
<0.5	Unaccepted

Source: George and Mallery, 2001

4.2 Factor Extraction

Factor analysis was performed to check if there is any multicollinearity between variables or inter-relationship principal component. Varimax rotation method was use to determine any underlying component for each variable. It is the most common rotation employed. It tries to produce factors that are as simple as possible by minimizing the variance loadings across the items within factors. Without the rotation, the factors has been identified but difficult to interpret (de Vaus, 2002).

Table 9. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.866
Bartlett's Test of Approx. Chi-Square Sphericity df	1712.0 210
Sig.	0.000

This rotated solutions distinguishes items between factors that lead to high factor loadings becoming higher, lower factor loadings declining and there is no cross loading. This process makes it easier to see item that belong to the factors by identifying the loading values where the higher loading the more that item belong to that factors. An examination of actual that load on each factor also shows that the components are interpretable (de Vaus, 2002). All the items in the questionnaire will be group into several components with eigenvalues greater than 1.

Factor analysis Principal Component Analysis was used and 4 factors with eigenvalue more than 1.0 were gathered and 21 items with factor loads above 0.50 were obtained with Varimax Rotation Technique. These items seem to be covering all four factors. The variance these four factors explain are given respectively as follows: first

factor explains 19.822 percent of the variance, second factor explains 19.404 percent of it, third factor explains 17.665 percent and the fourth one explains 12.455 percent. Total variance explained by these four factors is 69.346 percent.

With total cumulative percentage of variance of 69.346 percent, which is above the 60 percent, it satisfied the common satisfactory level in social sciences study (Hair *et al.*, 1998). Thus, the scale developed has construct validity. The retention decision of each item was based on factor loadings were greater than or equal to 0.50. Convergent validity is by each factor having multiple-question loadings in excess of 0.50. The loadings are comparable to Hoque and James (2000). The communalities of the four factors described regarding the items varied between 0.520 and 0.889. Gorsuch, Lee and Comrey suggest that the more variance rates obtained after the analysis are, the stronger the factor construct of the scale is (Tavancil, 2002).

From the questionnaire, two items on mission and vision section, three items on customer perspective section, two items on internal perspective section and two items on learning and growth perspective section were dropped and will not used in further analysis due to low loading. Table 10 presents the result from the rotation where details of items loaded under each four factors can be clearly seen.

Factors are named taking into consideration the meanings of the items. The first factor includes 5 items and is named Learning and Growth. The five items that vary with learning and growth perspective are i) staff understands job objectives and responsibilities, ii) knowledge and skills acquired through training, iii) company evaluates service for better performance, iv) company develops quality mindset of staff and v) company provides training and development opportunities to the staffs.

Table 10. Results of rotated (varimax) component analysis of BSC based on 21 items

	Factor			
	1	2	3	4
Staffs understand job objectives and responsibilities	0.844			
Knowledge and skills acquired through training	0.834			
Company evaluates service for better performance	0.789			
Company develops quality mindset of staffs	0.659			
Company provides training and development for staffs	0.652			
Clear mission and vision		0.851		
Customers think the company is good		0.700		
Mission and vision developed by owner		0.684		
Company has well structure management team		0.667		
Staffs understand mission and vision		0.613		
Company gives better services		0.558		
Mission and vision aligned with organization culture		0.557		
Company ensures staff satisfaction			0.692	
Company able to retain employees			0.663	
Company maintain relationship with suppliers			0.648	
Company keeps long-term relationship with customers			0.620	
Waiting time is short			0.610	
Company maintain good credit			0.557	
Company uses information technology (IT)				0.656
Company upholds good billing accuracy				0.543
Training improves performance				0.768
Eigenvalue	4.163	4.075	3.710	
Percentage variance explained	19.82	19.40	17.66	12.45

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Absolute values less than 0.5 were suppressed

Third factor includes 6 items and is named customer. The six items that vary with customer perspective are i) company ensures staff satisfaction, ii) company able to retain employees, iii) company maintain long-term relationship with suppliers, iv) company keeps long-term relationship with customers, v) customer's waiting time is short and vi) company maintain good credit.

Finally fourth factor includes 3 items and is named internal business. The three items that vary with internal perspective are i) company uses information technology, ii) company upholds good billing accuracy and iii) training improves performance.

5. Conclusion

From the finding, it showed that BSC is applicable in the Malaysian SME context. This is proved by the factor analysis and the reliability test done in the study. Conclusively, the adoption of four BSC components which are learning and growth; mission and vision; customer and internal business, are applicable for non-financial SMEs' performance.

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