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# The Application of Non-Financial Performance Measurement in Malaysian Manufacturing Firms

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#### Abstract

Non-financial performance measures in recent years have been receiving growing attention among modern's organizations to provide additional information for managers. The use of non-financial performance measures in the manufacturing environment is even crucial where its normal operation is more complex than any other type of organizations. The purposes of this research are to examine the application of non-financial performance measurement system among manufacturing companies and to explore the association between size of the firm, business environment, owners/manager involvement and modern manufacturing technology and the use of non-financial performance measures. A questionnaire was sent to a random sample 500 Malaysian manufacturing firms which resulted in 102 useable returned questionnaires. The results show that non-financial performance measures related to internal processes and customers have the highest extent of use. In contrast, techniques related to quality control have a relatively low level of use. The results also reveal that there are significant relationships between size of the firm, involvement of owner/manager, and modern technology and the use of non-financial performance measures. This research provides new empirical evidences on the use of non-financial performance measures and contributes a better understanding of the contingency approach in the context of performance measurement system within a manufacturing environment.

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#### 1. Introduction

In a current volatile market, financial-based performance measures are no longer relevant to supply important information to the firms. This is due to the claim that this traditional approach which mainly focuses on financial-based measures fails to respond to developments in the technological and competitive environment, with the result that internal accounting information is frequently inaccurate and misleading (Drury et al., 1993). The newly-invented performance measures which is

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based on non-financial measures were created as a consequence of the shortcomings in traditional approach. The current techniques provide more relevant, accurate and appropriate information within a proper time period to reconcile the inherent deficiencies contained in traditional performance measures (Preda and Watts, 2004). In today's practice, the use of nonfinancial performance measures can be mostly traced within the manufacturing environment. This is due to the nature of the daily routine for controlling manufacturing and distribution operations is best handled through the adoption of non-financial measures (Abdel-Maksoud et al., 2005). In addition the new approach in performance measurement system is able to strengthen the firm's competitiveness by providing important additional information that can be indirectly reflect the strengths and weaknesses of operations of the businesses. Therefore it is imperative for the today's manufacturing firms to implement the various techniques of non-financial performance measurement system for their overall growth and development. Despite the growing attention among organizations towards non-financial performance measures, the information about the usage of non-financial performance measures within manufacturing firms is very little. As manufacturing sector plays crucial roles for providing job employment and for the growth of most economy, empirical evidences on the current practice of non-financial performance measures is crucial for the development of this sector. In Malaysia, the manufacturing sector is responsible for an increase in Malaysian exports, contributes substantially to the economy in terms of employment and has been a key factor in sustained rapid economic growth. In 2015, Malaysian manufacturing sector contributes to 81.8% to the country's total export and provides 2.5 million job that representing approximately 18% of total employment (Economic Planning Unit, 2015). Given these contributions, the roles of manufacturing sector has become significant and studies toward assisting its growth and development is critical. Moreover the paucity of information relating to non-financial performance measurement in manufacturing firms leaves a significant gap in the body of literature especially from developing countries. Therefore this research aims to investigate the application of non-financial measures of in Malaysian manufacturing firms as well as to identify the possible factors that have significant associations with the use of non-financial performance measures. The contingency theory approach is utilized to guide the analysis of survey data. This is based on the assumptions that performance measurement in the manufacturing companies can be influenced by many circumstances. For the purpose of this research, four contingent variables are selected; size of the firm, environmental uncertainty, the use of modern technology and owner/manager's participation.

#### 2. Literature Review

This section covers explanation on previous studies related to non-financial performance measures and contingency factors associated with the use of non-financial performance measures.

#### 2.1 Non-financial performance measures

Performance measurement system (PMS) is a group of techniques developed by the organizations to evaluate the performance of business activities. Neely et al. (1995) defined PMS as a set of metrics used to quantify both the efficiency and effectiveness of activities. Business organizations have sought to develop a suitable PMS in order to provide managers and employees with necessary information comprising all aspects of main activities at both operational and organizational level. Hall (2008) stated the examples of the popular techniques for delivering a wider set of performance measures are the balanced scorecard (Kaplan and Norton, 1996), tableau de bord (Epstein and Manzoni, 1998) and performance hierarchies (Lynch and Cross, 1992). However the choice of metrics to guide and measures the performance is one of the most critical challenges facing organizations as the measures itself is not a generic independent process that applicable for all type of organizations. Nevertheless, PMS is perceived as a system designed to specific organizational characteristics.

The previous literature categorized performance measures in terms of financial and non-financial or qualitative and quantitative criterion. In this regards, the latter category is seen as a contemporary approach as the former criterion have long been critised due to its failure to respond to current developments. Previous researches claimed that conventional PMSs tend to be inward-looking and lack of qualitative factors. As a result, the information produced by the traditional approach is frequently inaccurate and misleading (Drury et al., 1993). In response to these concerns, a range of remarkable innovations in management accounting has emerged. The newly-innovated performance measurement which covering non-financial aspects of operational performance are introduced to provide additional information which could not been provided by the traditional approach. Similarly the extensive research of PMS covering the use of non-financial performances measures can be seen in early 2000s. Newer performance measures based on non-financial measures have been more widely applied by organizations over time (Drury and Tayles, 1993; Gomes et al., 2004; Ismail, 2007). These multidimensional PMS is important for enhancing the likelihood that all relevant performance dimensions are considered (Ittner et al., 2003). Such system is capable of providing signals and motivating improvement in crucial activities (Hoque and Adams, 2008). Similarly, Van der Stede et al. (2006) argued that regardless of strategy, organizations with more extensive PMSs, especially those that included

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