An Empirical Examination of the Relationship between Organization’s Learning Culture and Performance Measurement System in Malaysia

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Abstract

This paper attempts to explore the adoption of performance measurement systems within Malaysia manufacturing organizations, using a brief literature review, theoretical conception and an empirical study of Malaysia organizations. This paper discusses the relationships between organization’s learning culture (i.e. knowledge & innovation; Learning Orientation; Absorptive Capability; Employees Understanding & Learning) and the characteristic of performance measurement system (PMS) (i.e adoption of non-financial measures and frequency of reporting). The findings indicate that organization’s learning culture appears to be the important variable tested which was found to be statistically correlated with characteristics of PMS (design of PMS and use of PMS).

Keywords: performance measurement system, organization learning culture, Malaysia

Introduction

Performance measurement is vital to any organization which aspires to achieve superior levels of effectiveness and competitiveness. As a result, the problems of designing an effective performance measurement system (PMS) have been received the attention of many researches and academics. In recent years a revolution in performance measurement has emerged to search for the single most desirable method to promote effective decision making. Little attention has been given in the design of a PMS. Accordingly, this paper represents the results of an effort to fill some of these gaps. Our objective is to provide a framework for designing a PMS and use the empirical evidence to test the hypotheses developed. In order to accomplish these objectives, we had drawn on the literature of organization theory, competitive environment and organizational variable which have been shown to be critical to organizational performance. We examine the impact of these variables upon the requisites of the PMS. Figure 1 below indicates the framework of the study.

![Diagram of framework](image-url)
Context: Malaysian manufacturing companies.

Figure 1: Research Framework

The characteristics of the PMS will be represented by frequency of reporting and adoption of non-financial performance measures (Burgess et al 2007). This framework will be used to discuss the empirical data collected. However, it must be highlighted that the study attempting to provide a framework for analyzing the need of the PMS, rather than prescribing a unique system. In fact, due to the contingent nature of an effective PMS, we truly believe that no one universal system could ever be effective in all circumstances. This study intends to offer several hypotheses on the PMS characteristics which may be appropriate under certain conditions.

Literature Review

Contingency Theory

Contingency theory means that one thing depends on other things, and for organizations to be effective, there must be a “goodness of fit” between their structure and the conditions in their external environment. As such the correct management approach is contingent on the organization’s situation (Daft 2001, p. 24). This study accepts the notion of contingency theory, which suggests that the selected PMS design and use must conform to its organizational factors. According to Donaldson (2001), organizations seek to attain the fit of organizational factors to contingencies which leads to high performance. Therefore the organization becomes shaped by the contingencies (fit) to avoid loss of performance. Thus, there is an alignment between organization and its contingencies, creating an association between contingencies and organizational factors (Burn and Stalker, 1961). Contingency theory is based on the premise that there is no universally appropriate or perfect measurement system which applies equally to all organizations in all circumstances. In fact, it is suggested that particular features of an appropriate measurement system will depend upon the specific circumstances in which an organization finds itself (Otley, 1980).

In the view of contingency theorists, the design of accounting information and control systems, i.e. one particular type of PMS, is based upon specific characteristics of the organization and its environment (Birnberg, Turopolec and Young, 1983). Contingency theory is essentially a theoretical perspective within organizational theory that emphasizes how contingent characteristics or contextual factors (Daft, 2001) such as technology, size, environment, culture and strategy affect the design and functioning of organizations (Covaleski, Dirsmith and Samuel, 1996).
The Variables of the Framework
(1) Organization’s Learning Culture

Employees’ Knowledge

Thong (1999) argues that because of obstacles to developing the necessary skills and technical knowledge, many businesses are tempted to postpone company adoption of innovation until the barriers to adoption are lowered or circumvented. Ouchi (1979) suggests that any setting (design and use) and decision of management control systems such as changes of PMSs will differ according to the amount of knowledge one has about the transformation process and the availability of output measures. Blenkinsop and Burns (1992) noted that in order to be successful and meaningful, a thorough understanding of the existing measurement systems, both formal and informal, spoken and unspoken, would be essential so that employees could perform in line with the organisation’s aims. As a result, a company should consider employees’ skills when designing its PMS. It seems important and fair to measure a team according to, or based upon, their expertise. For example, it is unfair to use the same measures to evaluate the performance of a management team and an operational team, which provide different functions to the organisation and involve different skills in implementing their respective tasks (Calantone et al., 2002).

For this study, the employees’ knowledge variable will be used to measure the extent to which the employees understand the organisation’s PMS and the opportunities available within the organisation to learn about the PMS.

Learning Culture

Learning is the result of a change of action in the structures, systems or process of the organisation (March, 1991). However, learning is only achieved when the organisation has the ability/capacity to learn. Cohen and Levinthal (1990) address in their model the absorptive capacity of firms which indicates the extent to which companies recognise the value of new, external information and assimilate and apply it to commercial ends. They suggest that a firm’s prior knowledge must meet two criteria in order for it to be relevant enough to facilitate understanding and the new external knowledge valued. First, the organisation must possess some amount of prior knowledge of the new knowledge. Second, some fraction of the (internal and external) teacher’s knowledge must be fairly diverse to permit effective, creative utilisation of the new knowledge. These criteria suggest that a firm’s capacity to learn is largely determined by the relative relationship between its knowledge and that of its teacher. Referring to Cohen and Levinthal (1990), if an organisation has expertise in a field, it will understand and be able to evaluate changes or innovations that occur outside of the organisation, in that particular field. Possessing expertise in an area such as PMSs not only provides the ability to utilise that expertise, but also contributes to the organisation’s absorptive capacity in that area. Libby and Waterhouse (1996) agree that organisations that have invested in a large number of PMSs may respond to changes in, or challenges arising from, their environments by changing their PMS.
Thus, for this study it is expected that organisations that have expertise in one field (i.e. PMS) will tend to look for, and find new ways to utilise that expertise. In order to measure organisational capacity to learn, this study will focus on the extent to which the organisation provides enough expertise and spare capacity to cope with any changes.

(2) Characteristics of PMS

According to Neely (1999), this new direction of PMS represents a revolution in the field of performance measurement, evidenced by the increasing body of research that has been developed over the last decade. This plethora of information has inspired researchers to identify the major criteria underlying an effective PMS which include proposals, recommendations and guidelines that attempt to explain the criteria to be considered in designing a PMS (Hudson et al., 2001). Various authors and researchers (Globerson, 1985, Keegan et al., 1989, Dixon et al., 1990, Maskell, 1991, Wisner and Fawcett, 1991, Neely et al., 1996, Lingle and Schiemann, 1996, Hudson et al., 2001, Ong and Teh, 2009) suggest that in order to develop an effective PMS, the following critical characteristics must be considered in its designing:

(a) Performance measures should filter through the organisation’s hierarchy (Keegan et al., 1989), which means there is a link between operational measures and strategic objectives and they should be integrated (Dixon et al., 1990; Lynch and Cross, 1991; Feurer and Chaharbaghi, 1995; Lingle and Schiemann, 1996).

(b) Performance measures should be derived from business strategy (Keegan et al., 1989; Dixon et al., 1990; Lynch and Cross, 1991).

(c) The PMS should oversee the company from all perspectives such as financial performance, customer knowledge and internal business aspects. It would have to balance objective and subjective factors; both tangible as well as intangible measures need to be integrated (Feurer and Chaharbaghi, 1995; Barksy and Bremser, 1999; Ong and Teh, 2009).

(d) Organisations need to consider the multidimensional nature of the PMS in terms of: balance between external and internal factors (Waggoner et al., 1999); possible conflict between performance measures; and financial and non-financial measures (Hacker and Lang, 2000). This is because successful organisations are no longer able to seek unidimensional strategies. The new environment demands that an organisation performs competitively in all areas (Goldman et al., 1995).

(e) An organisation needs to be viewed as a living organism which must be sustained and motivated on an ongoing basis (Neely et al., 1996). In addition, it should provide the
opportunity for employees to learn and the PMS measures to improve (Feurer and Chaharbaghi, 1995). In other words, the PMS needs to have dynamic characteristics.

(f) The PMS should act as a tool to encourage people to be creative, to improve their skills, to derive satisfaction, and to produce better results for the company (Feurer and Chaharbaghi, 1995). It should not serve as an instrument to allocate blame, but as a tool to identify problems and to develop solutions (Richardson and Gordon, 1980).

(g) The system should: monitor the way the company seeks to be the master of a market; assess the way a company is retaining and developing its expertise in a certain technology; and monitor the way markets are being effectively sought. In short, the PMS should always link to the company’s core competencies (Feurer and Chaharbaghi, 1995).

(h) The system should be easy to understand, simple to use, provide fast and accurate feedback, and be quick to read (Dixon et al., 1990; Lynch and Cross, 1991; Neely et al., 1997).

(i) Information obtained would have to be limited to what decision makers really need in order to make operational decisions and be able to stimulate continuous improvement (Ghalayini and Noble, 1996; Neely et al., 1997).

(j) The system should make possible the comparison of organisations which are in the same business (Feurer and Chaharbaghi, 1995).

(k) Data collection and methods of calculating the performance measures must be clearly defined and systematically collected (Atkinson, 1998).

(l) The system should act as a communication tool within the organisation where it is possible to share information generated from the PMS across organisational functions (Neely and Bourne, 2000).

(m) The system should allow regular or ongoing updating of performance measures (Carroll and Schneier, 1982; Neely et al., 1996) and able to be changed as needed (Ghalayini and Noble, 1996).

(n) The system should help to achieved continuous improvement so that employees would not hesitate to perform to their maximum, as they realise that their contribution has an impact upon wider performance (Lynch and Cross, 1991; Fisher, 1992; Ghalayini and Noble, 1996)
The Variables for the Two Major Areas in the Research Model

<table>
<thead>
<tr>
<th>Independent Variables:</th>
<th>Dependent Variables:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Organisation’s Learning Culture</strong></td>
<td><strong>Characteristics of PMSs</strong></td>
</tr>
<tr>
<td>(a) Knowledge &amp; Innovation</td>
<td>(a) Adoption of Non-financial measures</td>
</tr>
<tr>
<td>(b) Learning Orientation</td>
<td>(b) Frequency of reporting</td>
</tr>
<tr>
<td>(c) Absorptive Capability</td>
<td></td>
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<tr>
<td>(d) Employees Understanding &amp; Learning</td>
<td></td>
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</table>

Hypotheses of the study

H1: Adoption of non-financial measures is dependent upon organization’s learning culture.

H2: Frequency of reporting is dependent upon organization’s learning culture.

The Form of Regression Model:
Dependent Variables = b0 + b1 Knowledge and Innovation + b2 Learning Orientation + b3 Absorptive Capability + b4 Employees Understanding and learning + e

Where,

- \(b_0\) = Constant/intercept
- Dependent variables = (1) Adoption of non-financial measures (2) Frequency of reporting
- \(b_1\) - \(b_{15}\) = Coefficient of the explanatory factors
- \(e\) = Error terms

Result and Discussion

A Questionnaire was administrated to a total of 550 senior-level managers from manufacturing firms randomly drawn from the databases of all manufacturing companies provided by Malaysia Industrial Development Authority (MIDA) (2010). MIDA is the Malaysian Government’s principal agency for the promotion and co-ordination of industrial development in Malaysia. The major functions of MIDA are to promote foreign and local investment in the manufacturing and related services sectors, to undertake planning for industrial development, to facilitate new and existing companies in the implementation and operation of their projects and offer assistance through direct consultation and co-operation with the relevant authorities at the both federal and state levels and to facilitate the exchange of information and co-ordination among institutions engaged in or connected with industrial development.

An initial telephone call to each of the senior manager was made to ensure that they were the appropriate person to receive the questionnaire. A reminder letter and another copy
of the questionnaire were sent to those who had not responded after two weeks. The response rate to the mail-out was 125 (22.7 percent)

Profile of Participating Companies

<table>
<thead>
<tr>
<th>Profile</th>
<th>No. of Companies (Total 125)</th>
<th>Percentages (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Company Size</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small</td>
<td>18</td>
<td>14.4</td>
</tr>
<tr>
<td>Medium</td>
<td>55</td>
<td>44.0</td>
</tr>
<tr>
<td>Large</td>
<td>52</td>
<td>41.6</td>
</tr>
<tr>
<td><strong>Ownership Type</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Foreign-owned Companies</td>
<td>38</td>
<td>30.4</td>
</tr>
<tr>
<td>Joint-venture Companies</td>
<td>36</td>
<td>28.8</td>
</tr>
<tr>
<td>Local-owned Companies</td>
<td>51</td>
<td>40.8</td>
</tr>
<tr>
<td><strong>No. of years in Operation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Newly established (10 yrs or less)</td>
<td>52</td>
<td>41.6</td>
</tr>
<tr>
<td>Moderately established (11-20 yrs)</td>
<td>47</td>
<td>37.6</td>
</tr>
<tr>
<td>Established (more than 20 yrs)</td>
<td>26</td>
<td>20.8</td>
</tr>
<tr>
<td><strong>Types of Industry</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food and Beverages</td>
<td>23</td>
<td>18.4</td>
</tr>
<tr>
<td>Electronics and electrical</td>
<td>32</td>
<td>25.6</td>
</tr>
<tr>
<td>Wood and paper products</td>
<td>16</td>
<td>12.8</td>
</tr>
<tr>
<td>Textiles and Wearing apparel</td>
<td>28</td>
<td>22.4</td>
</tr>
<tr>
<td>machinery and equipment</td>
<td>13</td>
<td>10.4</td>
</tr>
<tr>
<td>Industrial Chemicals</td>
<td>5</td>
<td>4.0</td>
</tr>
<tr>
<td>Others</td>
<td>8</td>
<td>6.4</td>
</tr>
</tbody>
</table>

Most of the companies participate in this study are medium in size, mostly local-owned, company age lay between 11-20 years. Virtually the whole range of sectors present in the population replied: areas such as food and beverages; electronics and electrical; wood and paper products; textiles and wearing apparel; machinery and equipment; and industrial chemicals.

Table 1: Summary of Regression Results

<table>
<thead>
<tr>
<th>Dependent Variables</th>
<th>Adjusted R Square</th>
<th>F(2,75)</th>
<th>Sig.</th>
<th>P &gt;0.05 Null Hypothesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adoption of Non-financial measures</td>
<td>0.383</td>
<td>5.461</td>
<td>.001</td>
<td>Can be rejected</td>
</tr>
<tr>
<td>Frequency of reporting</td>
<td>0.307</td>
<td>5.321</td>
<td>.002</td>
<td>Can be rejected</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dependent Variables</th>
<th>Independent Variables</th>
</tr>
</thead>
</table>
Table 1 presents the summary of the 2 regression results. The adjusted R Square reported ranges from 0.307 to 0.383, which can be used to evaluate the overall goodness of fit. In this case, the adjusted R Square indicated that between 0.30 to 0.38 percent of the variation of adoption of PMS (non-financial measures and frequency of reporting) can be explained by the organizational learning culture. Or, more simply, the model explains between 0.30 to 0.38 percent of the adoption of PMS.

In general, the findings from Table 1 reveal that employees understanding and learning is the only independent variable which was found to be positively and significantly associated with all two dependent variables tested (adoption of balanced measures and frequency of reporting). The findings indicated that when employees’ understanding and learning level is improved, companies tends to adoption non-financial measures and increase the frequency of reporting. The positive relationship among ‘employees understanding and learning’ and ‘adoption of non-financial measures and frequency of reporting’ also consistent with the findings by Chenhall and Langfield-Smith (1998) which claimed an effective PMS is based on a culture ‘in which the PMS was accepted and understandable throughout the organisation as essential to make the respective elements fit together as a whole’.

Surprisingly, absorptive capacity is found to be negatively associated with adoption of non-financial measures (significant) and frequency of reporting (not significant). One of the possible reasons could be because the absorptive capability companies are moving towards more advanced PMS i.e. sustainable PMS which covered social and environmental measures. This result is contradicting to previous studies (Blenkinsop and Burns, 1992; Libby and Waterhouse, 1996) that companies with high levels of absorptive capacity will tend to look for, and find new ways to respond to changes in or challenges arising from an ever changing environment, via a complete and useful PMS.

Table 2 indicated that learning orientated companies are more likely to adopt non-financial measures. One reason is that learning orientated companies’ (that are emphasized on improvement) would focus on contemporary PMS (Burgess et al., 2007) in order to generate more information and feedback for continuous improvement. Organization’s learning culture
which involves willingness and commitment to talk with, appropriately educate, develop and train employees (Millar, 1999) in this instance, attributed to the important impact upon the characteristics of PMS.

The findings revealed apparent consistencies with the contingency theory of PMS. However, these hypotheses may do little more than restate readily observable relationships. The results pointed to the null hypotheses as the most likely explanation of the PMS requisition. As a result, the organizations which emphasis the learning culture are more likely to adopt a PMS (with non financial measures of performance and increase frequency of reporting).

Conclusion

The findings contribute to the academic literature by providing empirical evidence that the adoption of performance measurement system should be designed in light of the contextual variables surrounding the specific organization. The findings of this study were intended to generate some conceptual anchor points and related hypotheses which might provide a basis for future research. With regard to organization culture, the findings suggested that there were some significant associations between culture factors and the factors in both design (adoption of non financial measures) and use of PMS (frequency of reporting) above. This study also trying to highlight the point that a contingency approach must be taken into considerations when designing and adopting an organization’s PMS.

References


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