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THE IMPACT OF PROCESS QUALITY MEASUREMENT ON FINANCIAL PERFORMANCE OF MARKET ORIENTED FIRMS

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ABSTRACT

Market orientation and process quality measurement had been regarded in the literature as sources of competitive advantage for business performance. However, both these concepts had been discussed separately in their own respective academic discipline. In the context of business operation today, the organisation need to work as a team to survive in the challenging business environment. Market orientation originates from the marketing concept. On the other hand, process quality measurement originates from quality management principles and is viewed as one of its tools. Despite their importance, many organisations have not combined them in order to become a market driven and quality oriented organisation. Thus, this study investigated the impact of process quality measurement on the relationship between market orientation and financial performance of manufacturing firms in Malaysia. Although the overall results showed lack of evidence on the impact of process quality measurement on market orientation-financial performance relationships, individual results signified that process quality measurement moderate the relationship between market action and financial performance.

ABSTRAK

Orientasi pasaran dan penilaian proses kualiti telah dibincangkan dalam ulasan karya sebagai sumber penyumbang kepada kelebihan daya saing terhadap prestasi organisasi. Bagaimanapun, kedua-dua konsep ini telah dibincangkan secara berasingan mengikut bidang akademik tersendiri. Dalam konteks operasi perniagaan hari ini, setiap organisasi perlu bergerak secara berpasukan untuk terus wujud dalam menghadapi cabaran persekitaran

perniagaan. Orientasi pasaran berasal daripada konsep pemasaran. Manakala, penilaian proses kualiti berasal daripada prinsip pengurusan kualiti dan dilihat sebagai salah satu alat pengurusan kualiti. Sungguhpun kedua-dua konsep ini sangat penting, kebanyakan organisasi masih tidak menggabungkan konsep ini seperti yang seharusnya untuk menjadi organisasi yang berorientasikan pasaran dan kualiti. Oleh itu, kajian ini membuat pengamatan ke atas impak penilaian proses kualiti kepada hubungan antara orientasi pasaran dan prestasi kewangan syarikat pembuatan di Malaysia. Walaupun, keputusan keseluruhan menunjukkan kekurangan bukti yang kuat terhadap impak penilaian proses kualiti ke atas hubungan orientasi pasaran dan prestasi kewangan; keputusan individu menunjukkan terdapat bukti bahawa penilaian proses kualiti dapat menyederhanakan hubungan antara tindakan pasaran dan prestasi kewangan.

INTRODUCTION

In the new economic age, organisations today face many new challenges such as the issues of globalisation and technology. The consequences of such challenges result in them facing fierce competition from organisations worldwide. The manufacturing industry is no exception in this case, since competition among organisations is very intense and the issues of survival are the main agenda for their activities. Manufacturers in one country do not only have to compete with local organisations, but also need to contend with other international organisations with better resources and brand name. This situation would increase pressure on the management of the organisation, forcing them to improve their manufacturing performance. In this context, manufacturing industries in Malaysia need to be agile in adjusting and changing to survive the challenging business environment.

Thus, in ensuring survival in the long term, manufacturers need to change their organisational strategy and adapt to the relevant environment. They need to interact with the external environment particularly in getting market information from customers and competitors. Furthermore, since customer needs and customer satisfaction have become the central aspect of business operation today (Bond, 2003; Chong & Rundus, 2004), some studies (Day, 1999; Druckman, Singer, & Van Cott, 1997; Lawler, Mohrman, & Benson, 2001; Slater & Narver, 1994b; Yam, Tam, Tang, & Mok, 2005) suggested that organisations should change their operations, such as restructuring their existing process and reinventing new programmes, which include becoming more market and quality orientated.

Studies have recognised that organisations oriented toward quality improvement have influence on their organisational performance and indirectly enhance competitive advantage (Agus & Sagir, 2001; Easton & Jarrel, 1998; Tena, Llusar, & Puig, 2001). Similarly, many studies had linked market oriented organisation with organisational performance and organisational survival in today's competitive environment (Day, 1994; Jaworski & Kohli, 1993; Kirca, Jayachandran, & Bearden, 2005; Narver & Slater, 1990; Pelham & Wilson, 1996; Slater & Narver, 1994a). Nevertheless, many manufacturers have not fully adopted to become a market oriented or a quality oriented organisation. Given the challenges encountered by the manufacturers to improve their organisational competitiveness in the current trends of globalisation and trade liberalisation, there is an increasing need for them to change their strategies to become market and quality orientated. Implementing them successfully is vital to all organisations of all sizes to ensure their survival as they are vulnerable to changes in the business environment.

PROCESS QUALITY MEASUREMENT

Process quality measurement is one of the critical elements of total quality management. Previous studies had also identified process measurement as one of the critical success factors in quality management practices (Agus, 2000; Ahire, Golhar, & Waller, 1996; Anderson & Sohal, 1999; Black & Porter, 1996; Kanji, 1998; Saraph, Benson, & Schroeder, 1989). Basically, a process "is a logically related collection of actions or operations that work together to produce a given result – it transforms inputs into outputs, or products" (Burrill & Ledolter, 1999). Alternatively, a process is defined as "a sequence of activities that is intended to achieve some result, typically to create added value for customers" (Evans & Lindsay, 2002). These definitions suggested the importance of organisation in managing activities effectively and efficiently to meet the desired results of providing value to customers. The quality management system, ISO 9001:2000, noted the importance of process by specifying that the organisation can achieve the desirable results efficiently if all the activities and related resources are managed as a process (ISO, 2000).

Feigenbaum (1991) introduced the term Total Quality Control (TQC), which originated from quality control, is the process whereby an organisation measures actual quality performance, compares it with standards, and acts on differences. Feigenbaum claimed that TQC provides an effective system for integrating the development,

maintenance and improvement efforts of quality in the various functions of the organisation, and enables them to interact with each other at the most economical levels to achieve full customer satisfaction. Thus, it can be argued that process quality management involves the monitoring of activities, including finding and eliminating of quality deficiency, to ensure that customer requirements are met.

Since organisations are faced with a turbulent and competitive environment, managing the work process successfully can ensure that organisations can achieve their quality aims (Pall, 1987). According to Juran and Gryna (1993), quality control and measurement is the process of maintaining a planned process in its planned state so that it is able to achieve operating goals. Three steps involved in performing the process of quality control and measurement include; (1) evaluating actual quality performance, which involves the use of statistical methods; (2) comparing actual performance to quality goals; and (3) acting on differences, which involves taking action to reinstate the process to the level of conformance with quality goals (Juran & Gryna, 1993; Zahid, 2000). Some of the process quality control and measurement practices include programmes to find wasted time and costs in all internal processes, identify ownership and work procedures, and the use of charts, diagrams, and statistical methods (Ahire *et al.*, 1996; Badri, Davis, & Davis, 1995; Evans & Lindsay, 2002; Flynn, Schroeder, & Sakakibara, 1994; ISO, 2000; Khairul, 2002; Pall, 1987; Saraph *et al.*, 1989).

MARKET ORIENTATION

Recent development of marketing concept literature suggested that there are few main publications that have conceptualised and revitalised market orientation. The most popular and highly cited in market orientation literature were by Kohli and Jaworski, and Narver and Slater (Kohli & Jaworski, 1990; Narver & Slater, 1990). These authors had put a new perspective on the marketing concept, which was regarded as a business philosophy by operationalising the marketing concept. The operationalisation is reflected in the activities and behaviours of an organisation, rather than just being a business philosophy as marketing concept was known to be (Diamantopoulos & Hart, 1993; Kohli & Jaworski, 1990). In the context of this study, the definition of market information is based on the Kohli and Jaworski (1990) conceptual definition of market orientation. They defined market orientation as:

the organisation wide generation of market intelligence pertaining to current and future customer needs, dissemination of the intelligence across departments, and organisation wide responsiveness to it.

The core activities underlying this definition are generation of market intelligence, dissemination of intelligence, and responsiveness to market intelligence. These activities correspond to customer orientation and coordination elements of the marketing concept. In this study, the operationalisation of market orientation has been captured into five dimensions: (1) market action; (2) market planning; (3) market focus; (4) market feedback; and (5) market coordination.

Pass studies have noted the contribution of market orientation towards organizational performance. Majority of the studies have found a positive association between market orientation and organizational performance (Jaworski & Kohli, 1993; Loubser, 2000; Pelham, 1997; Pelham & Wilson, 1996; Pitt, Caruana, Berthon, 1996; Pulendran, Speed & Widing II, 2000; Ruekert, 1992). This confirms the notions that market orientation provide firms with sustainable competitive advantage and capabilities that set the organization ahead from competitors (Day, 1994; Narver & Slater, 1990).

In actual fact, organisations need to integrate and coordinate behaviour with all the departments or functions in the organisation and interact with the environment outside the organisation (Burke, 2002; Cummings & Worley, 1997). Given the importance of environment as input into the organisation, market orientation can be one management approach that seeks to remove uncertainty in the environment by processing the information from the environment, such as information on customer needs and competitor strategies. This information is very important to the organisation since it provides it with strategic issues that are critical to the organisations in the current changing and competitive environments (Cummings & Worley, 1997). Furthermore, these strategic issues can provide the necessary information to formulate organisational strategy, which is vital to improve business performance.

As mentioned earlier, an organisation that manages its work process successfully can achieve organisational excellence. All functions in the organisation are interdependent of each other, such as product design, production, marketing, and customer service. Thus, any mistake or failure to perform to the required standard by one process may affect the output or the desired results. Process quality measurement involves

the monitoring of activities, including finding and eliminating quality deficiency to ensure that customer requirements are met.

Since process quality measurement emphasises on managing the work process so that all functions in the organisation can coordinate effectively and efficiently, the relationship between marketing concept and process quality management is important to ensure organisational success. One of the elements of marketing concept theories specified the importance of integration and coordination as the foundation for the successful performance of an organisation (Barksdale & Darden, 1971; Felton, 1959; Kotler & Levy, 1969; McNamara, 1972). In addition, quality management, which can be based from system theory, places emphasis on “activities performed by the interrelated components of the process” (Pall, 1987). In other words, process quality measurement should be viewed as an integrated system, whereby the objectives of management are to “(1) create within the process the most effective work pattern of people, equipment, materials, and information to ensure conformance to user requirements; and (2) optimise it in terms of efficiency and productivity at a minimum cost of quality” (Pall, 1987). Thus, it can be argued here that both theories suggested the importance of coordinating processes effectively that can ensure organisational success.

For this reason, it is essential that all the functions in the organisation to work together in a process that can meet the organisation goals. As specified by Deming (1986) in one of his fourteen points for management, ‘break down the barriers between departments. People in research, design, sales, and production must work as a team, to foresee problems of production and in use that may be encountered with the product or service’. Marketing can benefit from the integration of process management in its implementation as the concept emphasis on importance of coordinating the process effectively and efficiently to ensure organisation success. Hence, any information obtain from the customer orientation process in the marketing can be effectively translates to other functional areas if the logical flow of activities is in place in the organisation.

The information generated by marketing department can be effectively communicated to all the functional areas through process measurement, which would ensure that the whole organisation works toward conformance to customer requirements in an efficient and productive mode. In addition, any changes in the customer requirements can also be effectively managed through changes in the process of planning and implementation. Considering process quality measurement with market orientation together would provide a

synergistic effect on higher organisational performance. Therefore, we hypothesised the following relationships.

Hypothesis 1: Process quality measurement moderates the relationship between market action and financial performance.

Hypothesis 2: Process quality measurement moderates the relationship between market planning and financial performance

Hypothesis 3: Process quality measurement moderates the relationship between market focus and financial performance

Hypothesis 4: Process quality measurement moderates the relationship between market feedback and financial performance

Hypothesis 5: Process quality measurement moderates the relationship between market coordination and financial performance

METHOD

Sample and Data Collection

The population sampled in this study consisted of manufacturing firms in Malaysia. A sampling frame from the SIRIM QAS International directory totalling of 1000 firms, which were accredited with quality management system, was used as the sampling population. The unit of analysis for this study consisted of one senior management member that represented the whole firm or strategic business unit of the organisations. Data were collected using a mail questionnaire survey approach. A total of 500 questionnaires were distributed randomly to the manufacturing firms. The two-wave mailings produced an effective response rate of 31.6%.

Measures

All three main variables were measured using a six-point itemised rating scale. Process quality measurement measures the degree of measurement practices in the organisation that focus on monitoring and assessing process management. The extent of process quality measurement in the firms was measured by an eight-item instrument adapted from past study measures (Ahire *et al.*, 1996; Badri *et al.*, 1995; Black & Porter, 1996; Flynn *et al.*, 1994; Ishikawa, 1985; Pall, 1987; Powell, 1995; Riordan & Gatewood, 1996; Saraph *et al.*, 1989; Tar'i, 2005).

Market orientation practices were measured by 26-item instrument adapted from past study measures by Gray, Matear, Boshoff, and Matheson (1998), Kohli and Jaworski (1993), and Narver and Slater (1990). Market orientation measures the extent of marketing concept implementation. Factor analysis was carried out on these items. Five factors or dimensions with 20-items emerged after the analysis. These dimensions were renamed as (1) market action, (2) market planning, (3) market focus, (4) market feedback, and (5) market coordination.

Financial performance measures the degree of managers' perception on the financial performance of the organisation, measured over the last three years. The four-item instrument was adapted from past study measurement (Kaplan & Norton, 1992, 1993, 1996a, 1996b, 2001; Sim & Koh, 2001; Yenyurt, 2003).

RESULTS

The means of market orientation ranged from 5.19 to 4.24. The highest mean score was market focus (5.19), followed by market feedback (4.63), market coordination (4.56), market planning (4.44), and market action (4.24). The means of market orientation were all above 3 points, out of 6-point scale, indicating that the manufacturing firms in Malaysia seem to engage marginally in market orientation activities. Also, process quality measurement and financial performance demonstrated a mean score of 4.64 and 4.19 respectively. Thus, this seemed to indicate that the firms are engaging in process quality measurement practices and generating positive levels of financial performance.

Table 1 displays the results of moderated regression analysing the moderating effect of process quality measurement on the relationship between market orientation and financial performance.

As can be seen from Table 1, the F change from step 1 to 2 and from step 2 to 3 was not significant. However, upon inspection of the beta coefficient for interaction terms, there was a significance interaction between market action and process quality measurement at the 1% significance level. This suggested that process quality measurement moderates the relationship between market action and financial performance. The relationship is further illustrated in Figure 1.

Table 1: The Moderating Effect of Process Quality Measurement on the Relationship between Market Orientation and Financial Performance

Variables	Step 1	Step 2	Step 3
	Standardised Beta		
Market Focus (MF)	.101	.107	.126
Market Action (MA)	.164**	.165**	.156*
Market Planning (MP)	.229**	.231**	.275***
Market Coordination (MC)	.043	.046	.002
Market Feedback (MFB)	.071	.072	.067
Process Measurement(PM)		-.016	.010
MF x PM			.014
MA x PM			.213*
MP x PM			-.090
MC x PM			-.013
MFB x PM			-.082
R ²	.182	.183	.211
R ² change	.182	.000	.028
F change	6.784	.027	1.036
Sig. F change	.000	.869	.399

*** significant at 0.01 ** significant at 0.05 * significant at 0.1

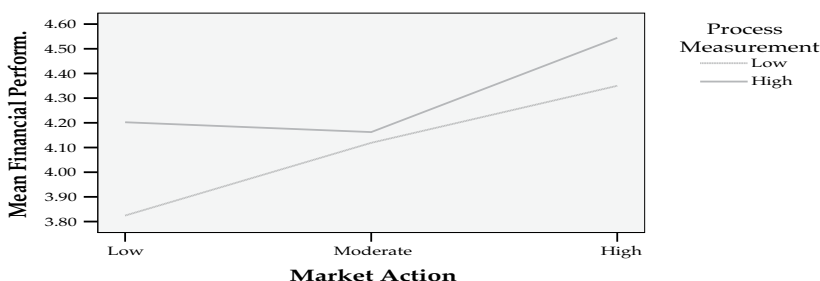


Figure 1: The impact of process quality measurement on the relationship between market action and financial performance

Figure 1 displays the moderating influence of process quality measurement on the relationship between market action and financial performance. When the level of market action is low to moderate, those organisations that emphasise on high process quality measurement

experience a negative relationship with financial performance. On the other hand at the same market action level, those with low emphasis of process quality measurement have a positive relationship with financial performance. As the level of market action increases from moderate to high, firms that emphasise on both higher and lower process measurements have a positive relationship with financial performance. The impact reaches a maximum financial performance when the level of market action and the level of process measurement are high.

DISCUSSION AND CONCLUSION

This study was undertaken to assess the interaction effect of process quality measurement on the relationship between market orientation and financial performance. A total of 158 manufacturing firms in Malaysia participated in the study. Results indicated that market action had been found statistically significant interacting with process quality measurement, thus, suggesting that process quality measurement moderates the relationship between market action and financial performance. The result also suggested that highest financial performance is attained by those firms that set highest priority on process quality measurement and adopt highest level of market action. However, the results only partially supported the proposed hypothesis.

Although, lacking in support, the moderating effect of process quality measurement in this study confirmed with literature, which suggested the importance of process quality measurement as one of the critical success factors in quality management practices for organisational excellence (Agus, 2000; Ahire *et al.*, 1996; Anderson & Sohal, 1999; Black & Porter, 1996; Kanji, 1998; Saraph *et al.*, 1989). An empirical study by Sila and Ebrahimpour (2005) had also reported that process management has a positive effect on business results. Therefore, this study provided some evidence that firms need to focus on process quality measurement by demonstrating activities such as monitoring and assessing the performance of the firms using statistical methods since this can enhance financial performance. At the same time, firms should pay attention to market action. Market action requires the organisation to take active action in detecting and responding toward market changes in the business environment. Such activity includes promptly detecting changes in customer product preferences and fundamental shifts in the industry, such as relating to competition, technology, and regulation. The firms should also act swiftly in responding toward competitors' price changes in the market.

In general, the results of the moderating effects of process quality measurement on the relationship between market orientation dimensions and financial performance confirmed with the literature which suggested that both market orientation and quality orientation should complement each other to achieve higher organisational performance (Lai & Cheng, 2005; Longbottom, Mayer, & Casey, 2000; Sittimalakorn & Hart, 2004). The findings contributed to the existing body of knowledge by investigating the moderating role of process quality measurement in the market orientation–financial performance relationship. Previous studies focused on the moderating role of business environmental variables (Diamantopoulos & Hart, 1993; Greenley, 1995; Jaworski & Kohli, 1993; Pulendran, Speed, & Widing, 2000; Slater & Narver, 1994a) and less focus on internal organisational variables. Therefore, the present study contributed to the literature by introducing the process quality measurement variable as an internal organisational variable that supports the relationship between market orientation and organisational performance.

The above discussion also suggested that the management of a company should consider integrating the activities between market orientation and process quality measurement in striving toward higher organisational performance. As competition intensifies, manufacturers need to pay more attention to the increasing needs of customers. In view of the above argument, this paper proposes synergistic activities between market orientation and process quality measurement in striving toward achieving higher business performance.

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