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Configuring the Performance Measurement Systems of Small Medium Enterprises from the Life Cycle Perspective

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ABSTRACT

The purpose of this paper is to examine the attributes of Performance Measurement Systems (PMS) of the Malaysian Small Medium Enterprises (SMEs), from an organizational life-cycle perspective. It was suggested that PMS is less comprehensive at birth stage, most comprehensive in the growth stage and decrease at the maturity stage of the life-cycle. The more comprehensive use of PMS is expected to be associated with higher organizational performance. Survey questionnaires were administered to managers yielding 90 usable responses. Using cluster analysis, SMEs were categorized into birth, growth and maturity stages. The findings support the hypotheses and thereby provide evidence on the variations of PMS attributes among SMEs across the life cycle stages. The study contributes to knowledge on internal consistencies between organizational factors at each organizational life-cycle stages that has implications for management control systems. To the practice, it provides evidence on organizational adaptations to changes in firm's strategy and structure.

Keywords: Performance Measurement Systems; Organizational life-cycle; SMEs

INTRODUCTION

Prior studies have acknowledged the need to contextualize a performance measurement systems (PMS) framework for SMEs (Garengo 2009; Marchand & Raymond 2018). According to Garengo, Nudurupati and Bititci (2007), attempts to develop the models have been more theoretical rather than empirical. Empirical work on PMS have been focussing on large size organizations (Ahmad 2017; Widener 2007; Henri 2006; Tuomela 2005).

As with many ASEAN countries, the Small and Medium Enterprise (SMEs) are pivotal to the current development of the Malaysian economy. Formally, registered SMEs represent more than 99% of all enterprises in Malaysia, and accounting for 37.1% of the GDP and contributing 66% to Malaysian employment (SME Report 2017/2018). Despite the important role for growth to the economy, evidence has shown that many SMEs do not survive in their first five years in business[1]. SMEs encountered particular difficulties due to their limited size and shortcomings in skilled personnel, communication technology, cost control, management, and especially financing (Saleh & Ndubisi 2006; Ismail 2008).

Considering the importance of the SMEs, a study to configure a mechanism to managing the sustainability of these organizations are viewed as highly timely and crucial. It was proven that a PMS in SME business has a significant role in supporting the management growth (Biazzo & Bernardi 2003; Klovienė & Speziale 2015), support the process of decision making and assist in strategic as well as management controls (Barnes et al. 1998; Bhimani 1994). Chenhall (2003) suggested studying management control systems including PMS from a broad perspective. A broader view of management control in organizations deals not only with internal matters such as social and self-controls, but also acknowledges the structures, environment, technologies and tasks performed (Chenhall 2003). Studying the comprehensiveness of PMS is expected to provide the broad perspective required for understanding the system. A PMS that integrates financial and nonfinancial measures are expected to provide information with an understanding of cause-effect linkages between operations and strategy and goals and between various aspects of value chain including suppliers and customers (Chenhall 2005).

In order to acknowledge the contextual factors in the broad framework, Moores and Yuen (2001) argue that a life cycle framework may provide a better theoretical foundation than the contingency framework. The life cycle framework identifies different laws of relationship (interaction) within various system states whereby the identification of PMS design at different life cycle stages is an appropriate way to demonstrate adaptation to environment. The life cycle framework is also appropriate in providing patterns of multiple contingencies and firms' internal characteristics that have been suggested under the configuration approach.

Thus, in this study the variations of PMS design will be viewed from its organizational life-cycle (OLC) perspective. The OLC configuration approach adopted Miller and Friesen's (1984) concept, where simultaneous consideration of contextual and structural variables classifies SMEs into the different life cycle stages. Specifically, the present study will investigate the combination of these variables namely, strategy, structural characteristics, leadership and decision making styles, that defines the life cycle stages and PMS comprehensiveness, to enhance SMEs' performance. The remainder of this paper is organized as follows. In the next

section, the literature on PMS and organizational life-cycle is briefly reviewed. Next, the conceptual framework for this study and the hypotheses are presented. In subsequent sections, the research method is described, the findings are outlined and finally the conclusions drawn.

Literature Review

PERFORMANCE MEASUREMENT SYSTEMS

A PMS is a management control tool that guides organizational efforts towards a specific objective and determines the success of the efforts through indicators of work performed and the result of activities (Otley 1987; Neely 1999). In implementing strategy, PMS continues to evolve to denote changes in the business environment and identifies ways to achieve those objectives (IFAC 1998; Anthony & Govindarajan 2007). In addition, a PMS is also an instrument to facilitate an organizations' decision-making, control, learning, communication and provides the motivation for individuals to perform at their best (Nanni et al. 1992; Simons 2000). An effective PMS articulates and links the vision and strategy into appropriate actions. Today, managers require a comprehensive set of measures. The broader scope of measures allows managers to consider a wider range of alternatives as the available information enables managers to understand the situation better (Bouwens & Abernethy 2000). Ittner et al. (2003) and Henri (2006) refer to the concept as diversity of measurement. By supplementing traditional measures with a diverse set of measures, the non-financial indicators will capture the operational critical success factors, which otherwise cannot be accurately represented by financial measures only (Ittner et al. 2003).

Prior studies demonstrate that the diversity of measurement should be designed in accordance with the organization's internal characteristics. Using the Balanced Scorecard framework, Hoque and James (2000) identified that larger size firms and firms with a higher proportion of new products have a greater tendency to make use of a balanced set of measurement. The reason is that larger firms are often decentralized and, therefore, having balanced measures may stimulate the effective flow of communication between business units. The evidence also indicates that balanced measures are useful at the early stage of the product life cycle as it integrates customers, internal process, employees and operational performances to long-term financial success. Meanwhile, Henri (2006) hypothesized that there are direct relationships between organizational culture and the nature of PMS use on the diversity of measures. The study reveals that the top management, of firms with a flexibility culture, tends to use a more diverse set of measurements than those with a control dominant culture.

Garengo (2009) proposed an integrated PMS framework specifically for the SMEs focusing on the characteristics (i.e. how SMEs are using the measures) and scope (i.e. what dimensions are measured) of the system. An integrated PMS enhances the interactions between business units as it provides a causal map between actions and strategies, along with the various elements of the value chain including customers, supplier and competitors (Guilding 1999; Ittner, Larcker, Nagar & Rajan 1999; Kaplan & Norton 2001a; b).

The stress on comprehensive integrated measurement is an attempt to provide a broader business set of success measures rather than relying solely on the traditional financial and market share measures and it captures diversity of measures in a single framework. Obviously, as such tool is necessary to guide management especially in today's stringent market competition. However, most studies in SMEs have a narrow focus on of PMS. Thus, the purpose of the present study is to identify comprehensiveness of PMS attributes in SMEs at their different life cycle stages.

ORGANIZATIONAL LIFE CYCLE

The organizational life cycle (OLC) literature suggests that consistent patterns of development occur in organizations over time, even across a diverse sample of firms in which organizational activities and structures differ (Quinn & Cameron 1983; Hanks et al. 1994). A firm's stage of growth represents a contingency or driving force to which appropriate organizational responses must be matched (Miller & Friesen 1984). Organizations experience different organizational characteristics, problems, structural configurations and strategic priorities as they move from one life cycle stages to another (Tam & Gray 2016). Failure to account for the stages of the life cycle in budgetary policies has been found to result in inefficiencies of resource allocation (Czysewski & Hull 1991). Moores (1990) developed conceptual arguments for different characteristics of management control systems across the OLC. He maintained that there are points in the life of a company where too much control can stifle creativity and hinder its development. Thus, a consideration of a firm's life cycle in designing and implementing controls including PMS will reflect a firm's adaptability to changes in the environment and management needs that might vary from stage to stage.

Empirical research applying the OLC concept to small business development is limited (Shim et al. 2000). In the area of management control, among those few MCS studies that do address life cycle, the approach has been more conceptual than empirical (see for example, Moores 1990; Brignall 1997). The few published empirical work in the management control area includes Moores and Yuen (2001), Auzair and Langfield-Smith (2005), Kallunki and Silvola (2008) and recently Su, Baird and Schoch (2017). There has been no focus on small companies although some of these studies include manufacturing and service companies with less than 50 employees. Notably, they adopted Miller and Friesen's (1984) life cycle model to study management accounting and control systems.

Miller and Friesen (1984) suggested integral complementarities among the environment, strategy,

structure, and decision-making methods, with each life cycle stage exhibiting certain significant differences from all other stages along these four factors. In other words, the model suggest that simultaneous changes of organizations' context and structure defines life cycle stages. Miller and Friesen (1984) suggested five stages of life cycle: birth, growth, maturity, revival and decline stages. A number of multistage models have been proposed in the OLC literature, ranging from three-stage to five or more stages models (Kazanjian & Drazin 1990).

Two important criteria for an acceptable OLC model include a) complete biological cycle from birth to death and b) organizational development has been examined a supported empirically (Su et al 2017; Moores & Yuen 2001). Accordingly, Miller and Friesen (1984) life cycle stages will be used in this study. Following Moores and Yuen (2001) we recognize that the model covers a complete cycle of organizational development from birth, growth, mature, revival and decline. The criteria for classifying small business growth have been relatively simple (see Shim et al. 2000). Nevertheless, Shim et al. (2000) highlighted that a consensus that exist among researchers, is that, in general, small business organizations progress through different stages of development, from existence to survival, success to maturity. In fact, as Miller and Friesen's (1984) model was revisited, it was concluded that the stages of birth, growth and maturity were empirically supported (see Tam & Gray 2016). It was argued that the stages from birth to maturity might be the only predictable ones as in mature organizations life cycle models break down, and change occurs metamorphically and unpredictably. Thus, in this study, the focus is on three stages of the SMEs life cyle, namely, birth, growth and maturity.

SMEs ORGANIZATIONAL PERFORMANCE

The underlying concept of OLC is that organizations grow in predictable and consistent pattern that allows assessment of current business performance as well as predict future development. A precise prediction would assist management in responding to changes in a timely manner and manage growth effectively (Tam & Gray 2016). It is argued that high performance is a consequence of a match between contextual and structural variables within organisations life cycle stages and their management control systems such as the PMS. In management accounting and control studies, performance of organizations may be measured along several dimensions, most often divided into financial and non-financial performance (Auzair & Amir 2017). In this study, the instrument used by Ismail (2007) to measure performance was adopted as it was validated in his study undertaken within the SME environment.

THEORETICAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

A configuration approach takes a holistic view to analyze many contextual and structural variables simultaneously. Moores and Yuen (2001) suggested life cycle configurations for three reasons. First, the theory has been widely supported conceptually and empirically in the organizational behaviour literature (Tam & Gray 2016). Second, adaptation can be useful and promising metaphor for conceptualizing an organization's endeavours to be better fitted into its environment. Finally, organizational life cycles are appropriate in providing patterns of multiple contingencies and firms' internal characteristics that have been suggested under the systems approach.

Referring to the life cycle framework, this study recognizes that strategy, structure, leadership and decision making style of companies will cluster to form stages of organizational life cycle (Miller & Friesen 1984). The choice of these variables in defining the organizational life-cycle is also consistent with the SMEs characteristics that influence their managerial practices identified by Ates et al. (2013). Han, Seok and Kim (2017) emphasized on the role of CEOs, as being a powerful influence to the survival and growth of SMEs. As SMEs do not usually operate on large capital and do not separate ownership from management, the leaders have to actively respond to the changes in business environment and should continuously develop and execute new management strategies to survive. Consequently, as SMEs grow, more complex structures and more sophisticated decision-making style will prevail. More mature market may demand these businesses to expand their range of products, and management requirement for information will accelerate (refer Moores & Yuen 2001). In order to support the development, management systems such as the PMS must be sufficiently informative, timely and flexible to cope with the varying management needs. PMS attributes thus, will vary across these life cycle stages to adapt with the changes. Accordingly, the match between the PMS attributes and the life cycle stages will be associated with high SMEs performance. Figure 1 illustrates the research framework.

SMEs at *birth* stage are expected to have less complex organization structure, informal controls, and are highly centralized (Miller & Friesen 1984; Moores & Yuen 2001). At this early stage, companies are more concerned with strategy formation and plans to expand business operations. Thus, the information prepared might be limited to higher management. Accordingly, structural leadership style appears to dominate. SMEs at this stage are expected to focus on internal information and simple accounting measures (Silvola 2008). Hence, PMS at the birth stage are less likely to be comprehensive.

As SMEs *grow*, organization structure become more complex and decentralized, the product innovation strategy become more aggressive and market scope expands (Miller & Friesen 1984; Moores & Yuen 2001). Managers appear to combine the structured and considerate leadership style in handling the companies (Moores & Yuen 2001) as subordinate's view were taken into consideration in decision making. Information at this stage are being gathered formally and systematically as more effort are needed to process the information. Garengo (2009) viewed the information that should be provided through a PMS in SMEs as mentioned above as most comprehensive.

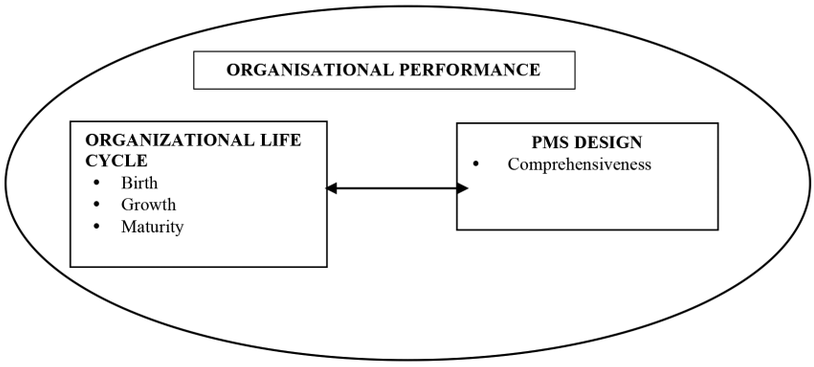

FIGURE 1. Research framework

Mature SMEs on the other hand, seek to stabilize their operations and replace innovation strategies with consolidation (Moores & Yuen 2001). Structures become fairly centralized and because of the limited focus, SMEs are expected to rely on slightly less comprehensive information compared to growth stage.

H_1: The comprehensiveness of PMS in SMEs will increase from birth to growth stage, and decrease slightly at the maturity stage the life cycle.

Performance information should be used to make decisions and provide feedback for organizations to learn from the past experience and adapt to environment (Ates et al. 2003). More comprehensive PMS is expected to provide SMEs with these advantages. Thus, it is expected that firms in their growth stage will exhibit higher performance compared to the firms in their birth and mature stages. Additionally, firms at the growth stage is expected to enjoy expansion of product-market, while birth firms are still struggling with the new business. However, Moores and Yuen (2001) suggest that firms at their maturity stage will exhibit slightly lower performance compared to the growth stage as there is slackening of organizational effectiveness.

H_2: SMEs performances are highest at their growth stage, and decrease slightly at their maturity stage and lowest at their birth stage of the life-cycle.

RESEARCH METHOD

SAMPLE

The National SME Development Council (2013) classifies Malaysian SME into manufacturing, services and other sectors. Proportionate stratified random sampling was used to ensure each sector is represented in the sampling frame. Data was collected using questionnaire survey mailed to 750[2] SME companies operating in Malaysia. The questionnaire was refined based on the feedback of a pre-test with SME company managers and 5 academic staffs representing peer reviews.

The respondents were either the owner or top management depending upon the management structure of the firm, similar to Collin and Jarvis (2002). They were targeted as they were expected to have the best knowledge of the various aspects of their organizations, particularly knowledge of the PMS design. A total of 90 responses were received, representing 12% response rate. Table 1 summarizes profile of the respondents of this study.

As shown in Table 1, majority of the respondents hold the position of managers (32.2%) and the rest of the respondents are either senior managers, directors, managing directors or CEO of the SME companies. Majority of the respondents hold bachelor degree (51.7%) and 38.9% are owners of the companies.

Table 2 presents the profile of the companies involved in the survey. Majority of the respondents are in service industries, namely business services 18.9%, followed by wholesale and retail 13.3%. The companies that operated less and above 10 years were almost equally divided, with older companies representing 58.9% of the respondents.

MEASUREMENT OF VARIABLES

PERFORMANCE MEASUREMENT SYSTEM

Comprehensiveness of Performance Measurement System (PMS) was measured using Chenhall's (2005) and Mohd-Amir et al.'s (2010) instruments which was then modified to match the SMEs environment. Using a 20-item question, respondents were asked to indicate on a seven-point scale ranging from one (not at all) to seven (to a very great extent), the level to which particular characteristics described their firms' performance measurement system. This includes the extent to which PMS provided integration between goals, strategies and operations; and across the value chain including supplier and customer. The next question includes whether the provision of performance measures in the area of financials, customers, business processes and long-term innovation was assessed. Respondents were also asked to evaluate the extent to which the PMS provided leading and lagging indicators.

TABLE 1. Profile of respondents

	Frequency (N=90)	Percentage %
Job Designation		
Chief executive officer	10	11.1
Managing director	15	16.7
Director	11	12.2
Senior manager	12	13.3
Manager	29	32.2
Others	13	14.59
Academic Qualification		
Secondary school	9	10.0
Diploma	22	24.5
Bachelor	46	51.1
Professional qualification	9	10.0
Others	4	4.4
Ownership		
Owner	35	38.9
Non Owner	55	61.1

TABLE 2. Profile of sample firms

Background variable	Frequency (N=90)	Percentage %
Industries		
Electrical and electronic	5	5.6
Metal and metal products	1	1.1
Furniture and parts	4	4.4
Food, beverage and tobacco	4	4.4
Textile and footware	6	6.7
Storage and logistics	1	1.1
Marketing	3	3.3
Wholesale and retail	12	13.3
IT related services	6	6.7
Business services	17	18.9
Healthcare	7	7.8
Construction	6	6.7
Agriculture	7	7.8
Livestock, fishing and aquaculture	2	2.2
Education and research, landscape, animation, and auditfirms	9	10.0
Number of full time employees		
Less than 20	51	56.7
Between 20-50	20	22.2
Between 51-150	8	8.9
Above 150	11	12.2
Annual Revenue		
Less than RM200,000	17	18.9
Between RM200,000 to RM250,000	20	22.2
Between RM250,001 to RM1,000,000	20	22.2
Between RM1,000,001 to RM10,000,000	15	16.7
Between RM10,000,001 to RM25,000,000	6	6.7
Above RM25,000,000	10	11.1
Companies' Age		
Less than 5 years	15	16.7
Between 5 to 10 years	22	24.4
Between 11-20 years	31	34.4
Between 21-50 years	20	22.2
Above 50 years	2	2.3

ORGANIZATIONAL LIFE CYCLE STAGES

The Miller and Friesen (1983; 1984) and Moores and Yuen (2001) instruments were adapted to measure the organizational life-cycle variables (strategy, structure, leadership and decision-making styles) on a seven-point Likert scale (1 = Not used at all, 7 = Used to great extent). Strategy items include product/service innovation, company expansion, marketing and liaison with government. Structure items are measured based on the degree of decentralization of authority and degree of specialization and differentiation of activity structure. Leadership refers to structural or considerate style of leadership. Decision-making style was measured by asking respondents the amount of information used and the degree of focus when making decisions.

ORGANIZATIONAL PERFORMANCE

This study adopted the instrument used by Ismail (2007) to measure the Malaysia SMEs performance. The instrument was developed by Khandwalla (1977) based on the manager's assessment of the company performance relative to competitors. Four items were used to measure long term profitability, availability of financial resources, sales growth, and image and client loyalty. Each item was measured using a seven-point scale ranging from one (not satisfactory) to seven (very satisfactory).

THE FINDINGS

The hypotheses testing follows two steps, first, SMEs were classified into organizational life cycle stages. Second, the PMS attributes with regard to its comprehensive criteria were compared across these life cycle stages.

DATA ANALYSIS

Classification of respondents was based on hierarchical agglomerative technique for cluster analysis using Ward's method. The organizational life cycle variables; strategy, structure, leadership and decision-making style were chosen as the clustering variables, that is the variables used to generate the cluster solution. Factor analysis was initially conducted for all the life cycle variables to reduce them into manageable set of data. Using Principle Component Analysis (PCA) as an extraction method and varimax rotation, the analysis resulted in three strategy factors, two leadership factors and one factor for decision making. The structure variable did not meet the acceptable level of reliability (Cronbach's alpha = 0.5) and therefore not included as the clustering variable.

A variety of techniques are available to 'estimate' the number of clusters. Ketchen and Shook (1996) suggested the use of multiple techniques to estimate the number of clusters, to overcome each other's shortcomings. In this study, the dendrogram, and the agglomeration coefficients were utilized to make initial choices of appropriate cluster solutions, which were then clarified using practical judgment and heuristics.

The agglomeration coefficient was examined to discover any significant 'jump' in the value of the coefficient. A jump implies that two relatively dissimilar clusters have been merged, the number of the clusters prior to their merger is the most probable solution. Table 3 shows the agglomeration coefficients associated with the number of clusters ranging from ten to one.

The agglomeration coefficient shows rather large increases in going from one to two clusters (164.298), two to three clusters (58.261), and finally three to four clusters (47.594). The following increments (after the four clusters) were rather similar. This visual inspection suggests the possibility of a two, three or four-cluster solution.

Next, the dendrogram was inspected. From a visual overview of the dendrogram, a two-cluster and a three-cluster solution would give a large width of range. Ketchen and Shook (1996) believed that the confidence in the number of clusters identified may be greater when determined through convergence of multiple methods. As

TABLE 3. Analysis of agglomeration coefficients

Number of clusters	Agglomeration coeefficients	Difference
10	139.661	12.808
9	152.469	12.809
8	165.278	13.474
7	178.752	22.946
6	201.698	23.504
5	225.202	26.545
4	251.747	47.594
3	299.341	58.361
2	357.702	164.298
1	522.000	

shown above, the three-cluster solution has been suggested by both techniques applied to estimate the number of clusters (that is, dendrogram inspection and examination of agglomeration coefficient). Therefore, we can have confidence in the three-cluster solution.

CLUSTER VALIDATION

Table 4 presents the data for analyzing the three-cluster solution. The cluster sizes were quite similar for clusters one and two, but a little larger for cluster three. The size of the largest cluster (cluster three) contained 35 cases, followed by clusters two 28 and the cluster one contained 25 cases.

ANOVA was performed to test the significant differences in cluster means for each of the clustering variables (refer Panel A for the list of variables). The resulting *F* statistic indicates that significant differences ($p<.0001$) exist in mean scores for each clustering variable. The mean scores for each variable, by cluster, and the corresponding *F* statistics are also reported in Table 4.

ANOVA was also performed to test significant differences in cluster means for each of the external variables (refer Panel B and C for PMS, demographic variables and organizational performance). This test could serve as the criterion-related validity check as these variables are not used to generate the cluster solution. The resulting *F* statistics indicate that significant differences exist in mean scores for PMS and organizational performance ($p<0.000$).

There is evidence to suggest that firms at birth stage younger than growth and mature firms. Accordingly, their size is the smallest, followed by growth and mature stage. In this study, a review of the SMEs age suggests cluster 3 is the youngest, followed by cluster 1 and cluster 2 has the longest years in operations. However, with regards to size (full-time employees and turnover) cluster 1 is the smallest, followed by cluster 3 and cluster 2 is the largest. At this point, the statistics could not provide confidence to assign the cluster label. In terms of performance, cluster 2 and 3 reveal higher score compared to median which suggest high performance. Cluster 1 on the other hand reveals lower performance. According to Moores and Yuen (2001), better performance suggests success enjoyed by expansion of product-market scope resembling firms at growth stage. The firm performance decreased slightly at maturity, implying slackening of organizational effectiveness. Firms at birth stage however, indicate poor performance due to 'much struggling' or lack of innovation. The size and performance of the SMEs provide a preliminary basis for labelling cluster 1 as in their birth, cluster 3 as growth and cluster 2 as mature stage of their life cycle.

TABLE 4. Mean scores of variables and ANOVA results

No. Cases[3]	Clusters			Median	ANOVA F-value ($p<$)
	1 n= 25 Birth	*3* n=35 Growth	*2* n=28 Mature		
Panel A *Clustering Variables*					
Marketing and diversification	3.60	5.11	3.80	4.21	30.06 (0.000)
Innovation and company expansion strategy	3.59	5.20	4.73	4.50	35.59 (0.000)
Outside parties relation	3.64	5.23	3.93	4.25	29.82 (0.000)
Considerate leadership	3.60	5.70	4.77	4.83	63.72 (0.000)
Structural leadership	3.88	5.96	5.32	5.25	45.71 (0.000)
Decision making	3.70	5.63	5.09	5.00	57.14 (0.000)
Panel B PMS	3.91	5.29	5.09	5.00	19.58 (0.000)
Panel C *Demographic profile*					
Firm age	2.68	2.37	3.18	3.00	-
Full-time employee	2.36	2.51	3.21	2.00	-
Annual turnover	2.56	2.82	3.61	3.00	-
Organizational performance	4.26	5.73	5.43	5.25	16.66 (0.000)

Next, characteristics of the clusters were compared with a priori theory. Miller and Friesen's (1984) studies were used to compare the mean scores for all the organizational variables obtained in this study. Based on the mean value of the organizational life cycle variables, again cluster 1 is labelled birth, cluster 3 as growth and cluster 2 as mature.

PMS ATTRIBUTES ACCROSS LIFE CYCLE STAGES

A profile of PMS accross the SMEs life cycle stages was obtained. There appear to be significant differences between the aggregate mean score of PMS for all clusters (refer Table 4 Panel B). Cluster 1 at birth stage revealed lowest mean score indicating least comprehensive PMS. Cluster 3 at growth stage showed highest score or most comprehensive PMS while the score decrease slightly for firms at mature stage as shown by cluster 2. Thus, the data provides support for Hypothesis 1. Mean scores for organizational performance exhibit highest performance at growth, decrease slightly at maturity and lowest at birth. Notably, the findings on SME performance at these stages provide support for Hypothesis 2.

Detail mean scores for all attributes of the PMS is summarized in Table 5. As shown in the table, the mean scores for PMS attributes at birth stage is lower than the scores at growth and mature stages of the life cycle. Majority of the mean scores for all PMS attributes at mature stage are higher than the birth stage but lower than the growth stage. Only two scores are highest at mature stage which are measures that relate to past performance and financial indicators. The findings (e.g. refer Table 5 row 5, 8 and 10) indicate that PMS integration between goals, strategies and operations are highest at growth. Growth firms measures of performance were also highest in their diversity to include perspectives other than financial, such as customers, internal process and growth (e.g. refer Table 5 row 12). It was also interesting to note that SMEs in their growth stage highly regard both formal and informal procedures and process in acquiring information (e.g. refer Table 5 row 13).

CONCLUSION

The objective of this study is to investigate whether the PMS in Malaysian SMEs vary systematically across stages of

TABLE 5. PMS attributes across life cycle stages

PMS Attributes	Mean		
	Birth	Growth	Mature
a) Measures on past performance (e.g. profits)	3.872	5.132	5.250
b) Measures provide early warning signals (e.g. planned improvement)	4.430	5.398	4.750
a) Measures on internal factors related to company activities (e.g. sales growth)	4.314	5.339	4.750
b) Measures on external factors to company (e.g. trends in technological development)	4.000	5.229	4.812
a) Measures company activities using financial indicators	4.391	5.080	5.103
b) Measures company activities using non financial indicators	3.786	4.412	4.360
Requested information arrives immediately	4.236	5.314	4.964
Reports continuously the performance of operating activities	4.073	5.514	4.929
Timeframe that a target is to be reached is specified	4.040	5.657	5.289
Performance reports is provided frequently on a systematic, regular basis	3.760	5.600	5.000
Company provides consistent and mutually reinforcing links between unit current performance and long term strategies	3.720	5.571	4.964
Fully documented form is provided for evaluating performance	3.640	5.343	4.929
Company links all business unit activities to achievement of goals and objectives	3.800	5.371	5.071
Performance measures links company unit activities to			
a) Customers	3.920	5.914	5.399
b) Suppliers	4.128	5.471	4.365
Provide measures in these areas:			
a) Financial	3.720	5.714	5.179
b) Customers	4.000	5.600	5.571
c) Internal business process	3.640	5.514	4.714
d) Innovation and growth	4.033	5.543	4.607
Formal and informal procedures and process for acquiring information	3.954	5.453	4.929

their organizational life cycle. The framework is developed based on the understanding that as organizations grow, changes will occur in the strategy, structure, leadership and decision-making style. PMS vary to support the growth, providing information according to management needs at the different stages of the life cycle.

Findings from this study provide support for the hypotheses. SMEs at birth stage exhibit less comprehensive PMS which might indicate that at this phase, SMEs still do not have systematic information collection system. The use did not appear to be comprehensive across the SMEs because at birth, structure of the firms are usually more centralized (Miller & Friesen 1984). SMEs are likely to focus on the use of partial information such as financial information to determine the performance of the company. In accordance with Miller and Friesen (1984) and Moores and Yuen (2001), SMEs in the growth stage of their life cycle indicate the mission strategy that is gradually increasing while product innovation and market scope are aggressive and widespread. This finding is consistent with Lester and Parnell (2006) where they find that organizations in their growth stage find innovation and creation of new markets as their dominant strategy. The decision-making style is comprehensive where information is derived from a various units of the SMEs. Top management began to take into account the views of subordinates and empower subordinates. Accordingly SMEs in this phase integrate all financial information and non-financial performance measures, start to have a systematic method to prepare a report as scheduled, and spread benefits obtained from such information to all parts of the SMEs through systematic documentation system. Discussion and sharing of information or communications occur frequently between managers and subordinates. PMS appear to be most comprehensive at this stage.

As predicted, it was found that the aggregate mean score of the PMS for the mature stage appear to be slightly lower that the growth stage, but higher than the birth stage. This indicates slightly less comprehensive PMS. A review of Miller and Friesen (1984) provides an overview that the product innovation strategy would be below or remained the same as in the previous stage. In this study, the findings suggest that SMEs in the maturity stage still maintain innovation of their products in accordance with current industry environment. This finding may be due to the Malaysian government policy (for example, the SME Innovation Award being introduced by the SME Corporation) that encourages SMEs to continue being innovative to add value and improve performance.

Despite the fact that the findings of this study support the proposed hypotheses, several limitations should be noted. The use of cluster analysis to categorize firms into their respective life-cycle stages relies heavily on subjective judgment of the researchers. This include determining the number of clusters and labelling the cluster solution. Although the subjectivity was minimized by using a priori theory, the results must be interpreted with care.

This study did not incorporate specific characteristics of owners although in small business, they could have great influence on business growth. Sim et al. (2000) suggested that business owner's educational level was a fundamental factor in advancement toward the next stage of growth (regardless of gender, age, years of experience, and acculturation characteristics). Future research may include the owners' educational level and their influence on business growth especially in small businesses. Future study investigating the characteristics of SMEs using in-depth qualitative study might supplement the findings of this study.

This study contributes to the knowledge on internal consistencies between organizational factors at each organizational life-cycle stages that has implications for management control systems. To the practice, it provides evidence on organizational adaptations to changes in firms' strategy and structure.

NOTES

1 Half SME businesses fail within five years and 80% could not continue after 10 years of operation (Ismail 2008).

2 Sample size was determined based on Table by Krejcie and Morgan (1970)

3 N=88 as two cases were identified as outliers

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