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Design Activities and the Difference Level of Sales and Profits Performance of the Batik SMEs in Malaysia

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Abstract

In this research, data on 186 batik SMEs were analyzed on their organizational resources in term of design activities. The objective is to examine if the design activities of high performance batik SMEs differ significantly from low performance batik SMEs. The high and low performance batik SMEs were categorized based on their annual sales and profits for three consecutive years. For this purpose, the questionnaires were distributed among 186 batik business owners in Kelantan and Terengganu, Malaysia. The data collected were then analyzed using Mann-Whitney U Test and Discriminant Analysis. The result found that the high sales performers were actively involved in the design activities. The significant difference was also found between high and low profit performers in term of design activities. Among the activities, the discriminant analysis results showed that introducing new design was the main factor that distinguished the performance of sales between SMEs while design from customer's specification was the only cause that distinguished the level of profit performance between SMEs. Overall, the significant findings in this study will provide some guidance for low performers to identify their weaknesses by comparing the organizational resources possessed by the high performers.

Key Words: *Performance level, Small and Medium Sized Enterprises, Design Activities, Resource-Based View, Batik Industry.*

Introduction

Small and Medium enterprises (SMEs) in Malaysia play an important role in the nation's economy and are a major source of various economic contribution (Saleh & Ndubisi, 2006). They provide large employment opportunities, stimulate competition, aid to large companies and as seed-bed from which large companies grow (Hashim, 1999).

Bank Negara Malaysia reported that in 2006, SMEs comprises of 99.2% or 546,218 of Malaysian business establishment, of which about 80% are micro enterprises, while the remaining are the large companies totaling 4,486 (0.8%). The large numbers of SMEs contribute to the greater employment opportunities, about 5.6 million or 56% of the total employment market (BNM Report, 2007). However, despite the large total in numbers, in 2003, the SMEs only contributed 31.9% to the country's GDP with an export value totaling 18.1%. Two years later, the growth rate only increased by 0.1% on the GDP (32%) with the export value totaled only 19%.

Similarly, productivity levels in the SMEs were found to be significantly lower than large enterprises as they generated an average value added per employee of just RM14,740, far lower than the RM47,830 generated by large enterprises (BNM Report, 2007).

Based on the above statistics, SMEs in Malaysia are still not able to reach their full potential. Hashim and Osman (2003) indicated that the business practices in small firms are still limited in focus. As a backbone of the country's economy and their significant presence and role, the SMEs need to be more aggressive to improve their productivity and competitiveness (ACCCIM, 2007). SMEs in Malaysia should not totally rely on government agencies, they should find their own path of progress by relying on strategies that allow them to access new markets, increase their revenue and expand their customer base (Saleh & Ndubisi, 2006).

In Malaysia, manufacturing sector (including batik industry) is the major sector besides service, mining and agricultural. SMEs accounted for 96.5% or 39,436 of all enterprises in manufacturing sector (BNM Report, 2007). For manufacturing SMEs, The Small and Medium Industries Development Corporation (SMIDEC) defined it as an enterprise with full-time employees not exceeding 150 or with annual sales turnover not exceeding RM25 million.

Recently, the batik industry has been recognized as a priceless heritage that has potential market in Malaysia as well as in the international market. Being recognized for its priceless heritage for the country, the batik industry has been increasingly supported by the government and NGO through various programmes locally (e.g., Annual Piala Seri Endon Design Competition, Batik Walks, Piala Seri Iman Design Competitions and Malaysian Batik Festival) and internationally (e.g., International Batik Festival, Annual Malaysian Week in London, Annual Kuala Lumpur International and Batik Convention and Exhibition-KLIB). The government officers are also directed to wear batik on every Thursday in order to keep this industry continuously alive.

The local batik industry was valued at RM370 million in 2003 but with the government push, since 2004 it has generated RM400 millions in revenue per year. The batik industry can also generate tourism income through the event that has been created.

Due to its potential, batik has been highlighted in the Ninth Malaysian Plan as one of the traditional product that should be developed further (The Ninth Malaysian Plan, 2006). Nowadays, after so many efforts carried out by the government and NGOs, batik is now generating big incomes to batik entrepreneurs. Some of them have their products marketed at international levels and their pieces have been recognized as the world standard.

However, despite the success of the firms, many others in the batik industry are still not able to reach their full potential. After so many efforts given by the government and NGO to elevate the batik industry, only few firms have recorded high performance while the others are just satisfied with day-to-day income.

This study was conducted to provide a better understanding on why the performance of the SMEs differs among the industry players although they are from the same industry, culture and region. This question could be answered through the comparison of the firm's resources which have been identified as associated with firm's performance by the previous studies between high and low performance of batik SMEs. By comparing the firm's resources in both groups, the factors that contribute to the difference levels of batik SMEs could be identified. The results of this study may provide some guidance to the low performers to be at par as their counterparts.

Batik is categorized as one of the Malaysian craft products and widely used as a design on textile. Therefore the design activities are strongly related to this product. For that reason, the design activities were adopted as the issue to be examined in this study.

The main objective of this study was to examine whether there are differences in the organizational resources in term of design activities between high and low performance of batik SMEs in Kelantan and Terengganu, Malaysia. The following specific objectives of the study are then formulated:

RO1: To examine whether there are differences in design activities between high and low performance of batik SMEs.

RO2: To determine the design activities that distinguishes the high performers from the low performers of batik SMEs.

This article is organized into five sections. Following this introductory section is section 2 which provides a review of the related literature. Then, the third section explains the details of the research methodology used in this study. Data analysis and research findings are laid out in section 4. The summary of the research, its implications and limitations are presented in the last section with suggestions put forward on the direction for future research.

Literature Review

Theoretical Background

This research was guided by the resources-based view approach as the theoretical basis. It has been first introduced by Wernerfelt (1984) and further expanded by Barney (1986). The resources-based theory (RBT) is the way in which internal resources contribute towards a firm's sustainable competitive advantage (Way 2002).

Barney (1991) defined resources as tangible and intangible assets that organizations use to choose and implement strategies. Firm resources include all assets, capabilities, organizational process, firm attributes, information, knowledge, etc controlled by a firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness (Barney, 1991).

Tangible assets are also known as physical assets (Bergh, 1998). Tangible assets are defined as ones a firm can use only in its own operation (Bergh, 1998), it can be seen and touched (Kothari & Barone, 2005). The example of tangible assets include land, building, equipment (Kothari & Barone, 2005), plant, people (Milfelner *et al*., 2008) financial capital, machines (Arya & Lin, 2007) and location (Lerner & Almor, 2002). In contrast, intangible assets are rights that are not physical in nature (Kothari & Barone, 2005). The example of intangible assets include organizational culture, human capital, knowledge, reputation, management skills (Arya & Lin, 2007), procedures and systems, brand (Milfelner, Gabrijan, & Snoj, 2008), innovation, idea generation, design and quality of product or service (Lerner & Almor, 2002). However, Arya & Lin (2007) emphasized that although tangible assets are necessary for the operation of the firms; intangible assets are the real source of competitive success.

The dynamic relationship between resources and financial performance has been the focus of many researchers in business and economics for a number of years. But the issue of how the resources contribute to the different level of financial performance has not attracted many researchers. It appears a gap in the literature on measuring the direct impact of specific competencies (resources) on performance (De Carolis, 2003). Therefore, one of the purposes of this study is to fill this gap and empirically investigate the impact of specific resources on firm performance. Through this examination, the findings in this study is hoped to provide SMEs entrepreneurs some guidance with respect to be successful SMEs with regard to annual performance. In this sense, by relying on the resource-based approach, together with the literature focused on the study of SMEs performance, this study aims to examine the organizational resources of batik SMEs. There are various organizational resources owned by the firms (as defined by Barney, 1991); however, this study focused on design activities as this variable has several strengths relevant to the batik industry.

Performance

According to the accounting common terminologies, performance is the relationship of the income and expenses of an enterprise, as reported in the income statement (Kothari & Barone, 2005). Some studies relate the performance as a success (Walker & Brown, 2004). In the extant literature, performance is measured by either subjective or objective criteria. Profit and total sales are among objective performance measures which widely used in the studies of SMEs (e.g Lin & Chen, 2007; Garg, Mottal, & Goyal, 2005; Arbuthnot, Sisler, & Slama, 1993; Craig, Martin, & Horridge, 1997).

Profit is usually used because achieving profit is frequently identified as an overriding business goal (Kent, 1994) and total sales are considered a valid measure for presenting overall performance, especially in relatively homogeneous sample or in the same industry (Haber & Reichel, 2005).

Although some researchers described an objective data as sensitive, confidential information and difficult to obtain from the respondents (Berthon et al, 2008), it would seem to be the simplest way to assess performance (Haber & Reichel, 2005). Subjective measures would be the preference of some researchers due to the difficulty in obtaining the objective data (e.g., Ramanathan, Ramanathan, & Hsiao, 2012; O'Regan & Ghobadian, 2004; Durham & Littrell, 2000; Walker & Brown, 2004) or to overcome a problem when a sample contains a variety of industries (Allen & Helms, 2006). However, since subjective measures of performance are based on the owner's perceptions, they increase the possibility of measurement error and the potential for bias (Kotey, 2005). Therefore, if researchers limit themselves to a single industry (as the current study) the objective performance measures may be more meaningful (Allen & Helms, 2006) to be assessed. For that reason, this research considered to use objective performance as it represents the narrowest conception of business performance. And since the objective of this study is to examine the factors that cause the sales and profits performance between batik SMEs to differ, this study therefore operates firm's performance in terms of sales and profits.

Hypotheses Development

Activities Relating to Products and Performance

Batik is one of the Malaysian handcrafts. Garg *et al*, (2005) defines handicraft as hand-made articles, which are produced by craftsmen with or without tools, simple instruments or implements operated by the craftsman mainly by hand. Within the category of hand-made goods, some such as handicraft products often have an additional identifying feature such as traditional or artistic styles derived from the geographical region or country production (Garg *et al.*, 2005).

In Malaysia, batik has been widely used as a design on textiles. According to Slaybaugh, Littrell, and Farrell-Beck, (1990), there are two types of attributes of textile products being important to consumers. The first type concerns attributes that relate to the physical performance of product such as the texture, durability, size and usefulness of the textile. The second type includes attributes related to the psychological performance of a product such as the color, design, beauty of workmanship, quality and cultural aspects of a textile.

As this study focused on a single industry, batik business, a physical performance of the product was not much different from one SME to another. Batik is usually drawn on the same fabric ranging from rayon, jacquard, crepe or chiffon. It is also purposely used for clothing. The size of batik design textiles also similar in which usually two and half meters for men and four meters for women. However, in terms of psychological aspects, the batik SMEs might have different capabilities than their counterparts. Among the psychological performance of product, design and quality have been usually adopted by researchers (Littrell, Stout, & Reilly, 1991; Chaganti and Chaganti, 1983) as the contribution to the high performance of SMEs.

Over the past two decades, quality has been heralded as the source of competitive advantage and some researchers have given strong support for the view that quality must be adopted as a strategic goal in organizations (Prajogo, 2007). Quality is concerned with providing better products that satisfy customers' needs (Prajogo, 2007). Study by Garg *et al.* (2005) on handcrafted art ware and giftware industries in India indicated that firms which follow their own shapes and styles of products and try to provide leadership in the quality standards grabbing a bigger market share. Study by Durham and Littrell (2000) on handcraft enterprise in 11 developing countries found that crafts that did not meet high quality standards or failed to be adapted to customer needs could not compete in competitive market.

As stated previously, beside quality, design was also important to enhance customer demand. Study by Gobagoba and Littrell (2003) indicated that design and quality of the fabric were among the criteria which led to competitive advantage. Most of the small business owners in Guatemala identified that quality and design set their products apart from their competitors.

From the literature, it shows that regarding activities relating to products, design and quality were among the factors which influenced the SMEs performance, therefore between high and low performing firms, those criteria might be different. Thus, this study developed the general hypothesis below. The hypothesis however will be modified after factor analysis is conducted, or in other word, after the dimension of quality and design is confirmed as two constructs.

Ha: There are differences in activities relating to products between high and low performance of batik SMEs.

Methodology

Research Instrument and measurement

In order to achieve the research objective a questionnaire was designed to obtain the relevant data. The questionnaire was segmented into 2 main sections; Section A was on activities related to products and section B was on firm performance.
The research on performance in the batik industry has not attracted many researchers. Therefore, since there is lack of references on performance in the batik industry, the measurement of activities related to product variables were inspired from research findings on small business studies which have been identified as associated with SMEs performance. Some of the measures however were modified in order to suit with the actual conditions of the batik industry. The respondents have to respond based on five-point Likert scale. The previous literature which have several strengths relevant to this research were Littrell *et al.* (1991), Shim and Drake (1991), Durham and Littrell (2000) and Chaganti and Chaganti (1983).

The performance measures used in this research were the annual sales and annual profits for three consecutive years from 2005 to 2007. In this section, the respondents were required to fill in the answers with the appropriate figures. The average sales were then derived by adding the annual figures of annual sales for over three years period and divided by three. The same procedures were repeated on the annual profits. Finally, the high and low performance of batik SMEs were obtained by splitting the data at the median of average sales and profits.

Population

Empirical data was collected from 186 batik insiders in Kelantan and Terengganu which met the definition of SMEs by Small and Medium Development Council (SMIDEC). SMIDEC defines manufacturing SMEs as companies with sales turnover less that RM 25 millions or full time employees less than 150. The states of Kelantan and Terengganu were chosen in this study for two reasons. Firstly, it was because of their backgrounds as the two states which batik first grew in Malaysia (World Batik Council, 2005). Secondly because most of the batik insiders are also in these two states.

The number of SMEs which were involved in the batik industry in Kelantan and Terengganu were collected from the directories of SMIDEC, Batik Guild and MARA. The number of batik SMEs were obtained from various directories because none of the directories could give the real population of the batik SMEs. This situation occurs because each agency only has the profile of SMEs which registered with them. Even the Commissioner of Companies Malaysia (CCM) could not identify the number of batik SMEs since all of them were registered under the textile industry.

The numbers of batik population were therefore taken from the various directories in order to overcome this problem. This method had been used by Littrell *et al.* (1991). After sorting the redundant lists, the total populations obtained from the directories in the two states were 186 batik SMEs. The number of population obtained as represented in Table 1. Due to the small number of population, a complete survey was conducted in order to get the maximum data.

Table 1: Population data from the directories

Directory	Terengganu	Kelantan	Total
SMIDEC	12	4	16
Batik Guild	54	84	138
MARA	24	8	32
Population	90	96	186

This research was carried out with the aims to examine whether the resources of one group differ from one another. Therefore, the populations were split into two different groups. The groups were formed to represent the two different populations of the batik SMEs; a high performance of batik SMEs and a low performance of batik SMEs, according to their levels of performance in the annual sales and annual profits. The characteristics of the two different populations and how they were derived were explained in the next section.

Data Collection

The data was obtained through distributing the questionnaires to the batik SMEs which were answered by the owner-managers or someone with complete information about the respective firms. This was taken in order to ensure the information obtained was accurate and reliable.

The data was collected between September and October 2008. The researcher recruited 10 undergraduate students from a local university to collect the data. The researcher also conducted 3 hours of training for the enumerators to eliminate potential bias. The enumerators were asked to use the method of premise-to-premise to ensure the questionnaires were interpreted in the correct way by the respondents. A personalized cover letter that explained the purpose of the study accompanied each questionnaire. After two months, the target of 186 answered questionnaires was successfully achieved.

Analysis and Results

The data collected was analyzed using Statistical Package for Social Science (SPSS) Software Version 16. Statistical procedure employed in this study included normality test, factor analysis, reliability test and descriptive analysis. In order to achieve the research objectives, Mann-Whitney U Test and Discriminant Analysis were performed.

Descriptive Statistics of Performances

Respondents were asked to provide the figures of annual sales and annual profits for three consecutive years from 2005 to 2007. These figures were then calculated to derive the average sales and average profits by adding the annual figures of annual sales / profits for over three years period and divided by three.

Table 2 shows the descriptive statistics on performance measures. For annual sales, the mean value was RM392,218.44 with a standard deviation of 595,073.55. For annual profits, the mean value was RM141,758.30 with a standard deviation of 271,531.05. The SMEs that included in this study had a median sales of RM189,333.33 with a range from RM6,600.00 to RM4.2 millions. Looking at annual profits, the average profit ranged from RM2,533.33 to RM2.2 millions with a median of RM53,833.33.

On skewness and kurtosis, a value of 0 corresponds to a normal distribution (Maltby & Day, 2002). However, this table showed the value of 3.537 and 4.603 for skewness and the figure of 14.882 and 25.542 for kurtosis. This means that the distributions of performance data in this study were positively skewed and more pointed than a normal distribution.

Table 2: Descriptive statistics on performance measures

	Average on annual sales	Average on annual profits
N	186	186
Mean	392,218.44	141,758.30
Median	189,333.33	53,833.33
Std deviation	595,073.55	271,531.05
Skewness	3.537	4.603
Kurtosis	14.882	25.542
Minimum	6,600.00	2,533.33
Maximum	4,200,000.00	2,200,000.00

This research was carried out with the aims to examine whether design activities of one group differ from one another. Therefore, the populations were split into two different groups. The groups were formed to represent the two different populations of the batik SMEs, a high performance of batik SMEs and a low performance of batik SMEs, according to their levels of performance in the annual sales and annual profits.

Based on the descriptive statistics on both performance measures in Table 4-1, the conclusion was made as follows: those SMEs below RM 189,333.33 in average annual sales were categorized as the low sales performers. Those SMEs with annual sales exceed RM 189,333.33, were categorized as high sales performers. For low profit performers, their annual profits were below RM 53,833.33 and to be classified as the high profit performers, the SMEs should have the annual profits more than RM 53,833.33. The other figures in this table represent the medium, minimum and the maximum values for each category.

Factor Analysis on Activities Relating to Products

Factor analysis is a technique or more accurately can be said as a family of technique which aims to simplify complex sets of data by analyzing the correlations between them (Foster, 2001). Exploratory factor analysis which is employed to identify the main constructs is the most common usage by the researchers (Field, 2005). In this study, the factor analysis was conducted for generating the accurate hypotheses (Yaacob, 2008).

In order to generate the hypotheses of the study regarding the statements relating to the products, exploratory factor analysis was performed to the data to identify the main construct. The principle component method for factor analysis was used with varimax rotation, and the items with a factor loading of 0.50 and above were included in the subsequent analysis.

For procedures, firstly the Keiser-Meyer-Olkin (KMO) Measures of Sampling Adequacy was computed. The KMO measured if data is likely to factor well. According to Coakes and Steed (2001), KMO should be 0.60 or higher in order to proceed with factor analysis. For the activities related to product items, the KMO value was 0.721. This measure is above 0.6 and therefore the items are adequate for factor analysis. The final results of the factor analysis on activities relating to products are displayed in Table 3.

Table 3: Results of factor analysis on activities relating to products

Item	Factor 1 (Design Activities)	Factor 2 (Quality control)
Introduced new design	0.870	
Design from customer's specification	0.856	
Adapt design from others	0.695	
Design using technology	0.615	
Quality check		0.828
Quality level		0.802
Eigenvalue	2.838	1.085
Percentage of variance explained	39.830	25.545
Cumulative percents of variance	39.830	65.374

From the table, the factor analysis was able to identify 2 factors which had an eigenvalue greater than 1.00. Overall, the two factors accounted for 65.4% of the total variance.
The results after rotation showed the items under factor 1 were related to the design of the products, therefore all these items were referred as design activities. However, the items loaded with factor two were about the quality of the product, therefore these items were termed as quality control.

After the dimensions have been defined through factor analysis, it is important to ensure the measurements are reliable (Bryman & Cramer, 2001). As such, the reliability test was then conducted in order to examine whether the construct of the variables for activities relating products and which had been inspired from several small business studies were reliable.

Reliability Test on Activities Relating to Products

Reliability is defined as the degree to which measures are free from error and therefore yield consistent results (Zikmund, 2003). There are numbers of different reliability coefficients, however, Cronbach's alpha is a special measure of reliability which one of the most commonly used by researchers (Coakes & Steed, 2001). Cronbach's alpha can take values between 0 and 1. In general, 0.6 is used as a standard cut-off point, however, the higher the coefficient or the closer to 1, the more reliable the measure (Abu & Tasir, 2001; Field, 2006).

The reliability test was to carry out on each factor produced by factor analysis to confirm its internal consistency. The Cronbach's alpha was used in this study to assess the reliability of the items. The summary of the reliability test of the two dimensions from the statements relating products is shown in Table 4.

Table 4: Results of reliability test

Dimensions	Tested Items	Cronbach's alpha
Design activities	4	0.782
Quality control	2	0.542

The results of the reliability analysis indicated that the alpha value for design activities is 0.782. This figure suggests the evidence of reliability in the design activities construct. However the alpha value for quality control variable which is 0.542 was below 0.6, which is below cut-off point (Abu & Tasir, 2001), thus this factor was removed from this research.

As quality control is eliminated from this study, the study hypotheses will only focus on design activities. Therefore the subsequent hypotheses to be tested would be:

H1 : There are differences in design activities between high and low sales performers of batik SMEs.

H2 : There are differences in design activities between high and low profit performers of batik SMEs.

Normality Test

Testing normality is a pre-requisite for inferential statistical techniques (Yaacob, 2008). The results of normality test have the implication for using parametric or non-parametric test for later parametric test is proposed (Maltby & Day, 2002). In addition to skewness and kurtosis, Kolmogrov-Smirnov Test (K-S test) was run on the data for normality test. As this study is going to be looked for group differences (low and high performance groups), there is a need to run this test for each group.

The results of a K-S Test showed all of the variables in both performance measures were highly significant at 0.01 levels. It means that the data distributions in this study are significantly deviate from a normal distribution (non-normal). Therefore, these findings alert that non-parametric tests should be used for subsequent analyses.

Inferential Analysis on Design Activities and the Difference Level of Performance

RO1: To examine whether there are differences in design activities between high and low performance of batik SMEs.

In order to achieve research objective 1 and to test hypothesis 1 and 2, there are four items as suggested in factor analysis - introduced new design, design from customer's specification, adapt design from others and design using technology were grouped together under one variable which termed as design activities. The score for design activities was the sum of scores of these four items. As shown in table 5, Mann-Whitney U test was used to test the hypotheses.

Table 5: Results on Mann-Whitney U test on design activities

		N	Mean Rank	U	p-value
Sales Performance					
Design activities				2973.00	0.000***
	Low performers	93	78.97		
	High performers	93	108.03		
	Total	186			
Profit Performance					
Design activities				3583.00	0.040*
	Low performers	93	85.53		
	High performers	93	101.47		
	Total	186			

Note: *** indicates significant difference at $p < 0.001$ level
** indicates significant difference at $p < 0.01$ level
* indicates significant difference at $p < 0.05$ level

From table 4-4, the results showed that the mean rank for the high performers was greater than the mean rank for the low performers under both performance measures. The mean rank for high sales performers was 108.03 while the mean rank for the low sales performers was 78.97.

Under profit performance measure, the mean rank for high performers was 101.47 while for the low performers it was only 85.53. The data analysis showed the p-value of 0.000 for sales performance measure and 0.040 for profit performance measures, which means that the difference was significant at 0.001 and 0.05 levels respectively. Thus, both H1 and H2 are accepted. These findings thus support the hypotheses that there are differences in the design activities between high and low performance of batik SMEs in Kelantan and Terengganu.

The design activities which distinguish the performance level of Batik SMEs

RO 2 : To determine the design activities that distinguishes the high performers from the low performers of batik SMEs in Kelantan and Terengganu.

The discriminant analysis was performed on the items of the design activities comprised of introducing new design, design from customer's specifications, adapt design from others and design using technology in order to determine in ranking the design activities that distinguish the high performers from the low performers.

Using the discriminant analysis results (see Table 6), it had been found that the overall Wilks' Lambda was significant at p = 0.003, indicating that overall, the predictors differentiated among the two level groups. The results from the table also indicated that in ranking, the activities that distinguished the high from the low sales performers was led by introducing new design, with the discriminant coefficient equals to 0.86. It was then followed by designing from customer's specification with discriminant coefficient of 0.81, adapting design from others with discriminant coefficient of 0.80 and designing using technology with discriminant coefficient of 0.55.

Table 6: Results of discriminant analysis on design activities for sales performance measure

Predictor variables in the order of importance	**Standardized canonical discriminant function coefficients**
Introduced new design	0.862**
Design from customer's specification	0.811**
Adapt design from others	0.796**
Design using technology	0.546*
Centroid of the groups	
Group 1 (Low performers)	-0.304
Group 2 (High performers)	0.304
Canonical correlation	0.292
Wilk's Lambda	0.915
Chi-square	16.218**
Significance level	0.003
Number of cases correctly classified	65.6%

Note: *** indicates significant difference at p < 0.001 level
** indicates significant difference at p < 0.01 level
* indicates significant difference at p < 0.05 level

Table 7: Results of discriminant analysis on design activities for profit performance measure

Predictor variables in the order of importance	**Standardized canonical discriminant function coefficients**
Design from customer's specification	0.904**
Centroid of the groups	
Group 1 (Low performers)	-0.230
Group 2 (High performers)	0.230
Canonical correlation	0.226
Wilk's Lambda	0.946
Chi-square	9.518*
Significance level	0.049
Number of cases correctly classified	58.1%

Note: *** indicates significant difference at p < 0.001 level
** indicates significant difference at p < 0.01 level
* indicates significant difference at p < 0.05 level

In contrast to the previous performance measure where all the items of the design activities were identified as discriminant variables between low and high sales performance of batik SMEs, the result of the discriminant analysis (see Table 7) on profit performance measures showed only the design from customer's specification that distinguished the high from the low profit performers with a discriminant coefficient of 0.90. This result also explains the lower significant level of the Wilks' Lambda which was only at p = 0.49.

On the overall results of discriminant analysis, we can conclude that all of the design activities did contribute to the different level of sales performance among batik SMEs. However, in terms of profit, only design from customer's specification contributes to the different level of profit performance.

Discussion

The analysis on the design activities indicated that there was a difference between high and low performance of batik SMEs in Kelantan and Terengganu. This difference appeared under both sales and profit performance measures. This means that the attention was given on the design activities by high sales performers differed from the low sales performers. The attention on this kind of activity also differed between high profits performers and low profits performers.

Both high sales and profits performers were significantly more likely than low sales and profits performers to be involved in the design activities. This could be seen from the higher mean rank for the high performers in both performance measures than the low performers. This finding is consistent with the study by Siu (1999). His study on Chinese small firms in Mainland China found that the majority of higher-performing firms gave higher superiority to product design and lead the market by introducing new products.
From the findings, it was clear that the high performers were actively involved in the design activities. However, there were four items in design activities. Knowing which from those four items that most distinguished the two performance groups will give the alternative for the low performers to take a remedial action. Thus, the discriminant analysis would provide the answer.

The results of discriminant analysis for sales performance measure indicated that among four predictors, introduced the new design was the most important design activities associated with the different level of sales performance. The next most important variables were design from customer's specification, adapt design from others and design using technology. This is in agreement with the previous study by Littrell *et al.* (1991) who had indicated that more successful entrepreneurs were actively producing original designs. This gives an impact on their sales because the customers are more attracted to buy products of different designs from others. Therefore, this is the first design activities that should be adopted by low performers. However, if they felt that they are not able to generate design alterations or new design ideas on their own, they can seek advices from batik facilitators such as Batik Council, Budi Penyayang Foundation and Terengganu International Design Excellent (TIDE) would be helpful.

The results of discriminant analysis on profit performance showed that only the design from customer's specification was the causal effect on the different performance levels between batik SMEs. In this study, the design from customer's specification means that the design was in accordance to the descriptions given by the customers. The customers gave descriptions of what they wanted, maybe from their own idea or from magazine or other sources. This kind of design could contribute to the higher profits since the large profit margin can be included in a costing formula. The customer would accept whatever price put by the entrepreneur as long as the design as their specification is satisfied.
Even if the design is from the magazine or other sources and the price is stated, the entrepreneur still can say that they bear different overhead costs, therefore they could not give the price as demanded. The entrepreneur usually takes the opportunity in this activity and thus it could enhance their profits. Therefore, the low performers should not avoid to accept this opportunity if it comes to them. In fact, they could also choose this kind of activities as a business strategy.

Implication and Recommendation

The findings of this study have implications for practitioners, colleges and universities, related agencies and researchers.

Implication and Recommendation for Practitioners

Generally, the findings of this study are interesting for the batik industry entrepreneurs. The high performers would know their strength and low performers could identify their weaknesses by comparing the firm's resources owned by high performers.

The results from this study suggested that if the SMEs want to perform at a significantly higher level than their competitors, the SMEs should actively be involved in design activities. However, if they do not have any skill in that, they could take the first step by attending training.

Implication and Recommendation for College and Universities

Local colleges and universities with training programs in the batik design such as Universiti Teknologi Mara (UiTM), Limkokwing University and New Era College invest considerable effort in the training of batik artists, but lack of information on the factors affect the degree of batik artists' success. Therefore this study could overcome the lack and gives the entrepreneur's fundamental information on how to be highly performing batik SMEs.

The universities may also be an appropriate bridge to interconnect the future batik entrepreneurs and business reality. This could be done through student practical program. Through this program, the real constraints and needs for success could be identified. As suggested by Lee, Sontag and Slocum (2002), through practical, students would have the opportunity to develop working relationships with industry leaders, gain experience with and form a realistic view of industry, and enter mentoring relationships. Faculty would have the opportunity to interact with industrial people and see the current industry situation.

Implication and Recommendation for Related Agencies

The current findings also have the implications on government agencies such as *Yayasan Pembangunan Usahawan* (YPU), *Majlis Amanah Rakyat* (MARA) and other related agencies such as Budi Penyayang Foundation, Batik Council and Terengganu International Design Excellent (TIDE). The efforts should be focused in assisting the entrepreneurs especially in designing programs. Design has been identified as a significant variable to be at higher status in the batik industry. These agencies should continue encourage the entrepreneurs to make innovation on old design and always search for new design. Therefore specific target approaches in terms of training in the designing activities may be needed to assist batik SMEs in Kelantan and Terengganu.

Implication for Researchers

Another contribution of this research is for the researchers. Firstly, this study is one among a few which empirically tested the performance levels of the batik industry. Most of the previous studies in the batik industry are likely to focus on the process of batik making such as arts, tools, colors of batik design and designer's problem (e.g., Hodge, 1999; Lilethun, 2000; Beament, 1972; and Joseph, 1982).

In Malaysia, previous studies had focused on batik history and technique (Abu Samah, 1982), batik printing (Wan Ahmad, 1996), education in batik art (Sutisna, 2005), design of batik *sarong* (Abdul Kadir, 2003) and batik *tjanting* (Lias, 2007). Thus this study could overcome the lack of research on performance in the batik industry.

Limitation of the Study and Suggestion for Future Research

This study is conducted only in Kelantan and Terengganu because most of the Batik SMEs are situated in these areas. Therefore, the findings in this study were only limited to the batik SMEs in Kelantan and Terengganu and not on the batik industry in Malaysia as a whole. Expanding future research in other states could help understand in more depth about the specific characteristics of batik SMEs and their perceived needs.

Secondly, this research is an inductive identification of a firm's resources related performance in the batik industry. It examines only in terms of design activities. Future research should identify other firm resources which might serve as predictors of different levels of firm performance. More future research in the area of identifiable differences among the batik SMEs would be beneficial to the industry.

Another limitation of the study is due to the use of resource-based view as a grounded theory. Since this theory only focuses on the internal factors of the firms, this study neglects the external factors which might also contribute to the performance of the firms in the batik industry. Future research should take into consideration the external factors, which might use other related theories.

Conclusion

The research objective of this study was to use resource-based theory to examine the cause of the different level of sales and profit performance among batik SMEs. The activities related to products have been adopted after reviewing previous literature from the similar industries.

Those factors were analyzed using appropriate tests (Mann-Whitney U test and Discriminant Analysis) to examine which resources distinguished the low from the high performance firms. The result showed that the high sales performers were actively involved in the design activities. The significant difference was also found between high and low profit performers in terms of design activities. Among the activities, the results of discriminant analysis showed that introducing new design was the main factor that distinguished the performance of sales between SMEs while design from customer's specification was the only cause that distinguished the level of profit performance between SMEs.

Other than for the batik entrepreneurs, the results from this study also have the implication for the universities, government, private agencies and the researchers. Some suggestions have been proposed for them.
By recognizing the limitations of this study, future studies are recommended to look into several other aspects. As a result, the increased knowledge in the industry can contribute to the survival and growth of batik SMEs in today's competitive environment.

As a conclusion, if appropriate efforts are given by the entrepreneurs, related agencies and the researchers, the batik industry will burst as one of the traditional crafts which play a more important role in fostering Malaysian economy than it currently is.

References

Abdul Kadir, N. (2003). *Satu kajian tentang reka corak permukaan kain batik sarung tradisional di negeri Kelantan.* Unpublished master's Thesis. Universiti Sains Malaysia.

Abu, M. S., & Tasir, Z. (2001). *Pengenalan kepada analisis data berkomputer SPSS 10.0 for windows*. Kuala Lumpur: Venton Publishing.

Abu Samah, A. J. (1982). *Batik: Sejarah, teknik dan keistimewaannya (satu aspek dalam teknologi keseniaan melayu.* Unpublished master's Thesis. Universiti Kebangsaan Malaysia.

Allen, R. S., & Helms, M. M. (2006). Linking strategic practices and organizational performance to Porter's generic strategies. *Business Process Management,* 12(4), 433-454.

Associated Chinese Chambers of Commerce and Industry of Malaysia (ACCCIM). (2007). *Report of ACCCIM survey on SME for the first half of 2007,* Kuala Lumpur, Malaysia.

Arbuthnot, J. J., Sisler, G., & Slama, M. (1993). Perceived store performance and retail purchase decisions of buyers for small specialty stores. *Clothing and Textiles Research Journal,* 11(2), 21-27.

Arya, B., & Lin, Z. (2007). Understanding collaboration outcomes from an extended resource-based view perspective: The roles of organizational characteristics, partner attributes, and network structures. *Journal of Management, 33(5),* 697-723.

Bank Negara Malaysia (BNM) (2007). *Strategies for SME development.* Small and Medium Enterprise (SME) Annual Report 2006. Ref No: 09/07/03.

Barney, J. B. (1986). Strategic factor markets: Expectations, luck and business strategy. *Management Science,* 32(10), 1231-1241.

Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal of Management,* 17(1), 99-120.

Beament, T. (1972). *An introduction to batik.* Published Master's Thesis. Sir George Willams University, Montreal, Canada.

Bergh, D. D. (1998). Product-market uncertainty, portfolio restructuring, and performance: An information-processing and resource-based view. *Journal of Management,* 24(2), 135-155.

Berthon, P., Ewing, M. T., & Napoli, J. (2008). Brand Management in Small to Medium-Sized Enterprises. *Journal of Small Business Management,* 46(1), 27-45.

Bryman, A., & Cramer, D. (2001). *Quantitative Data Analysis with SPSS Release 10 for Windows.* Philadelphia: Routledge.

Chaganti, R., & Chaganti, R. (1983). A profile of profitable and not-so-profitable small businesses. *Journal of Small Business Management,* 21, 43-51.

Coakes, S. J., & Steed, L. G. (2001). *SPSS analysis without anguish.* Milton: John Wiley & Sons Australia, Ltd.

Craig, J. S., Martin, R., & Horridge, P. (1997). Apparel manufacturing business owners: A gender comparison. *Clothing and Textiles Research Journal,* 15(1), 1-11.

De Carolis, D. M. (2003). Competencies and imitability in the pharmaceutical industry: An analysis of their relationship with firm performance. *Journal of Management,* 29(1), 27-50.

Durham, D. E., & Littrell, M. A. (2000). Performance factors of Peace Corps Handcraft Enterprises as indicators of income generation and sustainability. *Clothing and Textiles Research Journal,* 18(4), 260-272.

Field, A. (2005). *Discovering statistics using SPSS*. Second Edition. London: Sage Publications.

Foster, J. (2001). *Data analysis using SPSS for windows version 8 to 10: A beginner's guide.* London: Sage Publications.

Garg, A. K., Mittal, R. K., & Goyal, O. P. (2005). A study of quality management in Indian handicraft units. *Global Business Review*, 6, 189-205.

Gobagoba, M. R., & Littrell, M. A. (2003). Profiling micro apparel enterprises in Botswana: Motivations, practices, challenges, and success. *Clothing and Textiles Research Journal*, 21(3), 130-141.

Haber, S., & Reichel, A. (2005). Identifying performance measures of small ventures – The case of the tourism industry. *Journal of Small Business Management*, 43(3), 257-286.

Hashim, M. K. (1999). SMEs *in Malaysia: Research Issues and Agenda. International Conference on SMEs at New Crossroads: Challengers and Prospects*. Universiti Sains Malaysia, Malaysia-Penang.

Hashim, M. K., & Osman, I. (2003). An evaluation of the business practices in Malaysian SMEs. *Malaysian Management Review*, December 2003.

Hodge, T. (1999). *Indonesian batik design transmitter of culture.* Published Master's Thesis. California State University, Dominguez Hills.

Joseph, R. M. (1982). *Diffused batik production in Central Java.* Published Doctoral Dissertation. University of California.

Kent, P. (1994). Management advisory services and the financial performance of clients. *International Small Business Journal*, 12(4), 45-58.

Kothari, J., & Barone, E. (2005). *Financial accounting: An international approach.* Prentice Hall.

Kotey, B. (2005). Goals, management practices, and performance of family SMEs. *International Journal of Entrepreneurial Behaviour & Research*, 11(1), 3-24.

Lee, Y. A., Sontag, M. S., & Slocum, A. C. (2002). Michigan apparel and textile manufacturing industry: Characterization and needs assessment. *Journal of Textiles and Apparel, Technology and Management*, 2(3), 1-11.

Lerner, M., & Almor, T. (2002). Relationships among strategic capabilities and the performance of women-owned small ventures. *Journal of Small Business Management*, 40(2), 109-125.

Lias, H. (2007). *Palm oil based wax as an alternative resist agent for batik canting.* Unpublished master's Thesis. Universiti Teknologi Mara.

Lillethun A. G. (2002). *Batik in America: Javanese to Javanesque, 1893 to 1937*. Published Doctoral Dissertation. The Ohio State University.

Lin, C.Y. & Chen, M.Y. (2007). Does innovation lead to performance? An empirical study of SMEs in Taiwan. *Management Research News*, 30(2), 115-132.

Littrell, M. A., Stout, J., & Reilly, R. (1991). In home businesses: Profiles of successful and struggling craft producers. *Family and Consumer Sciences Research Journal*, 20(1), 26-39.

Maltby, J., & Day, L. (2002). *Early success in statistics.* London: Prentice Hall.

Milfelner, B., Gabrijan, V., & Snoj, B. (2008). Can marketing resources contribute to company performance?. *Organizacija*, 41(2),

Ninth Malaysian Plan 2006-2010 (2006), Economic Planning Unit, Prime Minister's Department, Putrajaya, Percetakan Nasional Malaysia Berhad. http://www.epu.jpm.my

O'Regan, N., & Ghobadian, A. (2004). Short-and long-term performance in manufacturing SMEs: Different targets, different drivers. *International Journal of Productivity and Performance Management,* 53(5), 405.

Prajogo, D. I. (2007). The relationship between competitive strategies and product quality. *Industrial Management & Data Systems,* 107(1), 69-83.

Ramanathan, R., Ramanathan, U., Hsiao, H. (2012). The impact of e-commerce on Taiwanese SMEs: Marketing and operations effects. *Int. J. Production Economics,* 140, 934-943.

Saleh, A. S., & Ndubisi, N. O. (2006). An evaluation of SME development in Malaysia. *International Review of Business Research Papers,* 2(1), 1-14.

Shim, S., & Drake, M. F. (1991). Profitability of women's apparel shops: Business practices, promotions, and store/owner characteristics. *Clothing and Textiles Research Journal,* 10(1), 68-75.

Siu, W. (1999). Marketing and company performance of Chinese small firms in Mainland China: A preliminary study. *Journal of Small Business and Enterprise Development,* 7(2), 105-122.

Slaybaugh, J., Littrell, M. N., & Farrell-Beck, J. (1990). Consumers of Hmong Textiles. *Clothing and Textiles Research Journal,* 8(2), 56-64.

Sutisna, E. I. (2005). *Kajian tentang keberkesanan pengajaran dan pembelajaran pendidikan seni kraf batik di Sekolah Menengah Rendah Daerah Batang Padang, Perak darul Ridzuan (satu kajian kes).* Unpublished master's Thesis. Universiti Pendidikan Sultan Idris.

Walker, E., & Brown, A. (2004). What success factors are important to small business owners? *International Small Business Journal,* 22(6), 577-594.

Wan Ahmad, W. Y. (1996). *Batik printing of polyester fabric*. Unpublished Doctoral Dissertation. Universiti Teknologi Mara.

Way, S. A. (2002). High performance work systems and intermediate indicators of firm performance within the US small business sector. *Journal of Management,* 28(6), 765-785.

Wernerfelt, B. (1984). The resource-based view of the firm. *Strategic Management Journal,* 5(2), 171-180.

World Batik Council (2005). http://www.worldbatikcouncil.com.my.

Yaacob, R. M. (2008). *SPSS for business and social science students: Version 14 for windows.* Kelantan: Pustaka Aman Press Sdn. Bhd.

Zikmund, W. G. (2003). *Business research methods.* Thompson: United State.