

PERFORMANCE MEASUREMENT THAT AFFECTS SMEs BUSINESS PROFITS: CASE STUDY OF SMEs IN KHON KAEN PROVINCE

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Abstract

This study aims to measure performance measurement related to business profits of small and medium-sized enterprises (SMEs). The study was conducted by using self-administered questionnaires which were distributed to a sample group of 400 SME entrepreneurs in Khon Kaen Province, in the north-eastern region of Thailand. The data was analyzed using SPSS, in regarding with chi-square test, and multinomial logistic regression. By using the multinomial logistic regression, it shows that this method is able to predict the performance measurements related to business net profits of SMEs with an accuracy of 51.3%. It was found that, there are two factors, time and finance, significantly affecting business profit based on the results of the multinomial logistic regression models. As a result, performance measurement related to business profits of SMEs shows that SMEs entrepreneurs should focus on time and financial factors. It could affect business profits at a high net of 15% or more. It can be concluded that SMEs can obtain a higher possibility of net profit if the performance measurement is taken into account in those businesses.

Keywords: Small and medium-sized enterprises, SMEs in the manufacturing sector, SMEs in the wholesale and retail sector, SMEs in the service sector, Business profits, Performance measurement

INTRODUCTION

Currently, it is accepted that small and medium-sized enterprises (SMEs) are recognized as an important sector for economic expansion in Thailand. It can be seen from the expansion rate of the SME Gross Domestic Product (GDP), which is a key economic indicator for an

macroeconomics overview. It is likely to be higher than the expansion rate of the country (2.9%) in 2014 (The Office of Small and Medium Enterprise Promotion [OSMEP], 2014). Meanwhile the percentage of the GDP made up by SMEs increased from 37.0% of GDP by SMEs in 2013 to 37.4% of GDP by SMEs in 2014 (OSMEP, 2014).

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As a major part in driving the economic growth of SMEs, government sectors and other enterprise support agencies are trying to search for a strategy which is able to gain the highest profit margins to enhance the performance of SMEs. For example, the Bank of Small and Medium-Sized Enterprises Development of Thailand (SME Bank) organizes activities to strengthen SMEs by allowing easier access to capital (Small and Medium Enterprise Development Bank of Thailand, 2012). In addition, the Office of Small and Medium Enterprise Promotions (2014) conducted training programs to develop the potential of SMEs and to support the Federation of Thai Industries by providing a framework for cooperation between the public and private sectors for the development of SMEs in Thailand, and to develop competitive capacity in both domestic and international markets (International Institute for Trade and Development, 2013).

Despite these successes, SME entrepreneurships have a low score on the confidence index in terms of costs such as production cost, labor cost, and logistics and transportation cost, and the competitive marketplace (OSMEP, 2014). This Low confidence index results, in this sense, affect business profits of entrepreneurships. Indeed, SME entrepreneurships might still have weak points in getting accurate data for analysis and business development planning for the right decisions to enhance performance (Rompho & Boonitt 2012).

Performance measurement is a management tool which plays a vital part in assisting entrepreneurs with knowing the results of business performance and

improving their business profits (Sink & Tuttle, 1989; Laitinen, 1996; Medori, & Steeple, 2000; Neely, Gregory & Platts, 2005; Lohrke, Kreiserb & Weaver, 2006). Without potential business improvement, SMEs would not be able to compete. Therefore SMEs entrepreneurs should have proper performance measurement so that they can the proper data to make the right decisions, which is a vital metric of business performance and profit.

Over the past few decades, many studies have shown that the performance measurement for SMEs have been developed to several aspects, such as financial ratios, quality, flexibility, resource utilization, innovation, financial results, customer satisfaction, learning and growth, internal processes, staff satisfaction, community, and environment. This measurement is also important in determining profitability, as profit is part of performance measures at the firm level (Kaplan, 1983; Kaplan & Norton, 1992, 1996; Jarvis et al., 2000; The National Productivity Institute, 2004; Avlonitis & Salavou, 2007; Reijonen, & Komppula, 2007; Parmenter, 2007; Cocca & Alberti, 2010; Fred, 2011; Bianchi, Marinkovic & Cosenz, 2013; Inman, 2014; Ivars & Martínez, 2015). These studies have obviously shown that the performance measurement can improve or enhance performance to be suitable for increasing business profits.

However, minimal literature focuses on performance measurement and the profitability of the business. For this reason, the researcher was interested in performance measurements that affect business profit of SMEs. The results of this research would be useful to SMEs

entrepreneurs in Thailand and other countries with the similar business culture. In addition, the results of this study may be used as guidelines to enhance the performance of SMEs for their business profit. It also would be beneficial to the government and other enterprise support agencies, to be used as guidelines to implement and evaluate policies and strategies for SME development.

Purpose

The intention of this research project is to find out the performance measurements affecting business profit of SMEs. The significant research purposes are: (a) to measure SMEs' performance, (b) to study SMEs' business profit, and (c) to study SMEs' performance measurements that affects business profit.

To achieve the research outcomes, the next section provides an in-depth review of the literature underpinning the research objectives towards the development of an evaluative framework undertaken in the research project.

Beyond the established theoretical perspectives: Performance measurement related to business profits of SMEs

This section reviews the literature concerning the parameters of research under three main headings: SMEs, business profits, and performance measurement related to business profits of SMEs. These attributes build upon the literature of the research project's posited objectives and elucidate the key issues underpinning an evaluative framework and the research

methodology.

Small and Medium Sized Enterprises (SMEs) are small and medium sized firms which can be classified by the number of employees and financial assets.

In addition, Thailand has classified the SME sectors regarding the financial assets in the manufacturing sector should not exceed 50 million baht, in the wholesale sector should not exceed 50 million baht, in the retail sector should not be over 30 million baht, and in the service sector should not be over 50 million baht.

After reviewing the above literature, the researcher discovered that each sector of SMEs performance measurements might be expected to be done differently. However, in fact, the data of SMEs in the retail sector and SMEs in the wholesale sector are not used as separate sectors, so this is the limit of data that researcher could combine the data of SMEs in the wholesale sector and SMEs in the retail sector into the same sector. It is the aim of this research project to test this contention. Therefore, the issue will be researched and analyzed further in the area of the business profits of SMEs.

Business profit of SMEs will be measured by the SMEs's profitability level of companies with business profits from net income. The Office of SMEs Promotion (2014) classified Thai SMEs' profitability into 5 levels:

- (a) Level 5 net profit of more than 15% as strong net profit
- (b) Level 4 net profit of about 11-15% as normal net profit
- (c) Level 3 net profit of around 8-10% as not strong enough, there are certain profits, but no loss

- (d) Level 2 net profit of around 5-7% as quite poor, but circulation of funds is possible
- (e) Level 1 net profit of less than 5% as awful, loss incurred and no circulation of funds.

Performance measurement is an indicator of results, in which the researcher studied documents (Ôhno, 1998; Hudson, Smart & Bourne, 2001; Macpherson & Wilson, 2003; Olsen, 2007; Blackburn, Hart, & Wainwright, 2013) and related performance measurement to business profit on the following variables:

- **Quality** : reliability of products delivered or waste from the production service

- **Time** : the reduction in waiting time and resource utilization
- **Flexibility**: productivity and introduction of new products
- **Finance** : sales, cash flow and inventory
- **Customer Satisfaction**: delivery reliability, service and market share
- **Human Resources**: quality of work, labor efficiency and staff learning.

These independent variables are used to establish the framework to assess control variables that the researcher applied to specify the criteria for performance measurement related to business profits of SMEs. Thus, the researcher created twenty-four variables as in Table 1:

Table 1: Twenty-four variables of dimensions for performance measurement related to business profits of SMEs

Independent variables	Control variables	Total of variables
Quality	product quality, process quality, waste, defects, and suppliers	5
Time	work in process, output, lead time, and delivery lead time	4
Finance	inventory, orders/receipts, profit, turnover, costs and expenditure, cash flow, and sales / value added	7
Customer Satisfaction	user problems, product usage, service, returns and complaints	5
Human Resources	safety, staff turnover and personnel development	3
Total of variables		24

Conceptual framework

Based on the proposed theoretical background of the literature and the twenty-four variables created by the researcher, a conceptual framework has been established as shown in Figure 1.

The conceptual framework (Figure 1) guides the research methodology and structures the analysis of the research outcomes. The twenty-four control variables under all five of the performance measurement independent variables relate with SMEs' business profit. These variables have been further explained in the framed hypotheses. Hence, the researcher posits:

Hypothesis 1: Different SME sectors have different business profits as shown in Table 4

Hypothesis 2: SMEs' business profit depends on performance measurements as shown in Table 6.

Based on these two hypothesizes, it can be justified that it is crucial to study the business profit by evaluating the performance measurements from different SME sectors.

The next section synthesises the literature to derive a research methodology that tests the conceptual framework and the framed hypotheses as mentioned in Figure 1.

Research methodology

This section provides an overview of the research methodology employed to resolve the research objectives concerning SMEs' performance, SMEs' business profit, and SMEs' performance measurement that affects business profit.

To measure SMEs' performance

(1) Sampling and data collection

The researcher selected the area of Khon Kaen province, which is in the center of the

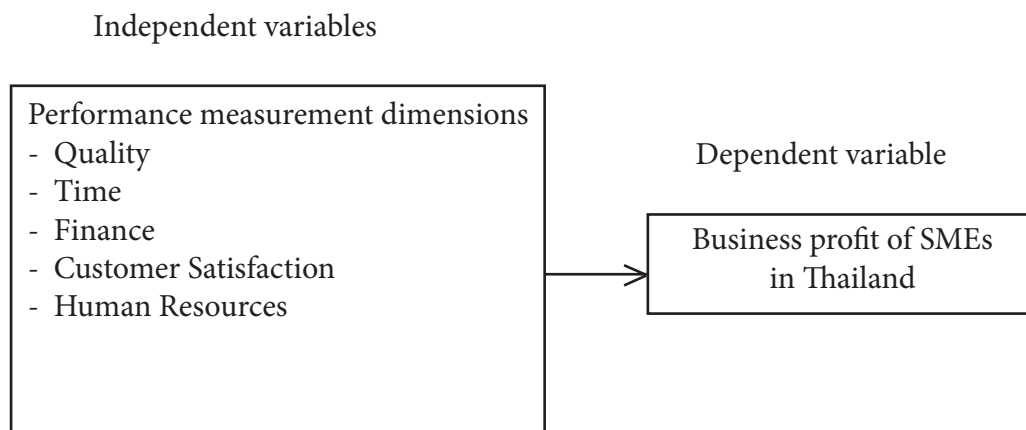


Figure 1: Research conceptual framework

Northeastern region and has the densest concentration of SMEs, contributing 7.56% to the total number of SMEs in Thailand (OSMEP, 2014). Also, Khon Kaen province is a provincial pilot project which is being developed as a center of the ASEAN Economic Community (AEC) as a connection point for the Economic Corridor East - West in Indochina. It is attractive to investors; both domestic and international (Chotechai, 2013).

The samples used in this study were SME entrepreneurs in Khon Kaen province. They were selected from a random sampling to calculate the sample size for estimating the population mean based on Lind, Marchal, Wathen's formula for statistical techniques in business (Lind, Marchal, & Wathen, 2011, p.276) as:

$$n = \left(\frac{Z\sigma}{E} \right)^2 \quad (1)$$

Regarding the formula above, the error in estimating the mean is to be less than 0.09 with a 95 percent level of confidence

as the standard normal value of z is 1.96, and the estimation of the standard deviation (from a pilot study) is 0.835. Substituting these values into a formula acquire the sample size as:

$$n = \left(\frac{1.96 \times 0.835}{0.09} \right)^2 = 330 \quad (2)$$

Indeed, the computed value of 330 is rounded up to 400 to reduce any errors that may occur. These surveys were distributed and received a 100% response rate. In fact, 400 samples were classified into subgroups of SMEs, namely: SMEs in the service sector, SMEs in the manufacturing sector, SMEs in the retail sector, and SMEs in the wholesale sector. For this reason, stratified random sampling is used for illustrating proportional allocation, which allocates the total sample size among the strata in proportion to the strata sizes, and the sample is randomly selected from each stratum (Lind, Marchal, & Wathen, 2011) as Table 2.

With the above sampling groups, a pilot study was used as a tool for data collection

Table 2: Number selected for a proportional stratified random sample

Stratum	SMEs sectors	Number of SMEs*	Relative frequency	Number sampled
1	Service	81,734	0.41	164
2	Manufacturing	43,633	0.22	87
3	Retail & Wholesale	74,278**	0.37	149
Total		199,645	1.00	400

Source: * The Office of Small and Medium Enterprises Promotions (2015)

to create a questionnaire checklist by studying twenty-four variables under all the five performance measurement independent variables for performance measurement of SMEs sectors in Khon Kaen province.

(2) Data analysis and statistics

The data was analyzed by using SPSS for Windows Version 17.0. Descriptive statistics were used to identify the arithmetic mean (AM) and Standard Deviation (SD). The analyzed results were interpreted and classified into several comment levels by applying an average score in each level on a statistical basis. Then the average level of opinion was calculated from width interval calculation, as:

- Average of 4.21 to 5.00 in the mean opinion level;
- Average of 3.41 to 4.20 means there are a lot of opinions;
- Average of 2.61 to 3.40 means there is moderate opinion;
- Average of 1.81 to 2.60 means there is less opinion; and
- Average of 1.00 to 1.80 means the least number of opinions.

To study SMEs' business profits

(1) Sampling and data collection

The samples were selected as mentioned; a questionnaire was used as a tool for data collection and for studying business profits which were divided into the 5 levels from the Office of SMEs Promotion (2014) mentioned earlier.

(2) Data analysis and statistical methods

The research measured the prediction of SMEs' profitability in Thailand from the net profit that was less than 5% to over 15% net profit. The researcher used descriptive statistics to test whether the hypotheses of different SMEs with business profit were different or not different from predictions with a statistical significance at the 0.05 level using the Chi-square test.

To study SMEs' performance measurement that affects business profit

(1) Statistic and data analysis

The researcher used factor analysis by using the principle component method and multinomial logistic regression analysis. The factors were extracted using the principle component to see the potential of 24 variables which were considered as factors. It was examined by using an Eigen value that exceeds 1.0. The Eigen value is indicative of the ability of the emerging factors to explain the variability of the original variables. Besides, the researcher also applied the Varimax rotation method and Kaiser-Meyer-Olkin (KMO) statistics, which are used to measure the suitability of the information available, and any data with $KMO > 0.6$ would be considered as suitable to use for factor analysis techniques. The researcher used SPSS Statistics, version 17.0 to perform exploratory data analysis based on descriptive statistics such as frequency, percentage, mean, and inferential statistics such as multinomial logistic regression analysis.

(2) Assessment of research tools

The researcher assessed the accuracy and reliability of the questionnaire by having the content examined for reliability by experts and incorporating the updates and corrections they suggested. The test reliability was determined by finding the Discrimination Power by using Item-total Correlation. This measures the performance of SMEs in the discrimination (r) range from 0.329 to 0.731. To test the tools reliability, Cronbach's Alpha Coefficient was used, and the performance measures of SMEs had alpha coefficients ranging from 0.738 to 0.850.

Results

This section analyses the outcomes of the significant features of the research project of performance measurement of SMEs, SMEs' business profit, and performance measurements that affect business profit of SMEs in Khon Kaen province, Thailand.

Performance measurement of SMEs

The researcher found that SME entrepreneurs had performance measurements at a high level in all variables, except for product usage which was moderate. When considering SMEs individually, it was found that SMEs in the wholesale & retail sectors had performance measurements at a high level, except SMEs in the manufacturing sector which had product usage and service variables at the medium level. For SMEs in the service sector the results were at the medium level as shown in Table 3.

SMEs' business profit

As Table 4 shows, there were three business sectors, manufacturing, wholesale & retail, and service, evaluated in this study. The business profit was classified into four groups; strong net profit—with the net profit of more than 15%, normal net profit—with the net profit of about 11-15%, not strong enough net profit—with the net profit of about 8-10%, and quite poor net profit—with the net profit of around 5-7%.

As a result, the researcher found that SMEs in different sectors had different business profits which were statistically significant at the 0.05 level. Among the groups of business sectors, the service sector (42.0%) was the major group followed by wholesale & retail (37.2%) and manufacturing sector (21.8%) respectively. Also, the service sector (35.4%) has the strongest net profit among those sectors. Remarkably, the manufacturing sector (54.0%) had the most normal net profit. Considering the decreasing business profit ranges, the wholesale & retail sector performed in the not strong enough range (37.6%) and quite poor (11.4%) due to uncertain profits and the net profit of about 5-7%, respectively. These results support Hypothesis 1: *Different SME sectors have different business profits.*

Performance measurements that affect business profit of SMEs

The researcher utilized Factor Analysis, Multinomial Logistic Regression Analysis, K-Means Cluster Analysis, and Model and application to assess the performance measurements that affect the business profit of SMEs.

Table 3 Performance measurements from the samples classified by SMEs sectors

Performance Measurement	Overview			Manufacturing Sector			Wholesale & Retail Sector			Service Sector		
	\bar{X}	S.D.	Opinion Level	\bar{X}	S.D.	Opinion Level	\bar{X}	S.D.	Opinion Level	\bar{X}	S.D.	Opinion Level
Product quality	4.27	0.59	High	4.43	0.56	High	4.06	0.64	High	4.38	0.49	High
Process quality	4.20	0.63	High	4.30	0.61	High	3.96	0.71	High	4.37	0.48	High
Waste	4.30	0.62	High	4.34	0.61	High	4.06	0.66	High	4.49	0.53	High
Defects	4.27	0.58	High	4.29	0.55	High	4.09	0.62	High	4.43	0.52	High
Suppliers	4.27	0.57	High	4.34	0.57	High	4.06	0.60	High	4.43	0.50	High
Work in process	4.15	0.60	High	4.15	0.60	High	4.00	0.63	High	4.29	0.55	High
Output	4.14	0.64	High	4.23	0.58	High	4.01	0.69	High	4.21	0.61	High
Lead time	4.13	0.64	High	4.13	0.52	High	3.98	0.62	High	4.27	0.68	High
Delivery lead time	4.05	0.69	High	4.16	0.57	High	3.90	0.76	High	4.13	0.67	High
Inventory	3.92	0.60	High	3.94	0.54	High	3.87	0.62	High	3.96	0.61	High
Orders/Receipts	3.80	0.79	High	3.77	0.56	High	3.74	0.88	High	3.87	0.80	High
Turnover	3.83	0.78	High	3.79	0.55	High	3.72	0.86	High	3.95	0.78	High
Costs and expenditure	3.84	0.65	High	3.82	0.58	High	3.74	0.73	High	3.95	0.59	High
Cash flow	3.79	0.64	High	3.79	0.59	High	3.70	0.69	High	3.86	0.62	High
Profit	3.84	0.63	High	3.98	0.51	High	3.69	0.67	High	3.90	0.64	High
Sales/Value added	3.99	0.58	High	4.07	0.50	High	3.77	0.63	High	4.14	0.51	High
User problems	3.80	0.67	High	3.80	0.57	High	3.64	0.75	High	3.93	0.61	High
Product usage	3.52	0.90	High	3.22	0.71	Medium	3.63	0.77	High	3.57	1.06	High
Service	3.49	0.95	Medium	3.25	0.75	Medium	3.66	0.84	High	3.47	1.10	Medium
Returns	4.11	0.64	High	4.16	0.57	High	3.97	0.66	High	4.21	0.64	High
Complaints	3.85	0.68	High	3.82	0.56	High	3.87	0.66	High	3.86	0.74	High
Safety	3.90	0.70	High	3.79	0.59	High	3.87	0.68	High	3.97	0.77	High
Staff turnover	3.86	0.61	High	3.77	0.56	High	3.82	0.64	High	3.94	0.60	High
Personnel Development	3.94	0.67	High	3.85	0.58	High	3.84	0.70	High	4.08	0.66	High

Table 4 SMEs business profit classified by sectors

Business Profit \ Sector	Manufacturing n (%)	Wholesale & Retail n (%)	Service n (%)	Total n (%)
<i>Strong net profit</i> (net profit of more than 15%)	15(17.2)	35(23.5)	58(35.4)	108(27.0)
<i>Normal net profit</i> (net profit of about 11-15%)	47(54.0)	41(27.5)	64(39.0)	152(38.0)
<i>Not strong enough net profit, there are uncertain profit, but no loss</i> (net profit of around 8-10%)	23(26.4)	56(37.6)	42(25.6)	121(30.3)
<i>Quite poor net profit, but circulation of funds is possible</i> (net profit of around 5-7%)	2(2.3)	17(11.4)	0(0.00)	19(4.7)
Total n (%)	87(21.8)	149(37.2)	164(42.0)	400(100.0)

Remarks: Chi-square = 45.27 $p < 0.001$
n statistically significant at 0.05

(1) Factor Analysis

Regarding the analyzed results, there were several control factors examined by multi-collinear statistically. Therefore, factor Analysis was used to group those control variables together, which led to the creation of a new variables equation in the following order as given below in Table 5.

The results displayed in Table 5 showed the Kaiser-Meyer-Olkin (KMO) statistics equaled 0.8877, which was over 0.6, so the information was appropriate to use for this technical analysis. In addition, the results showed that there were five factors that had an Eigen value over 1.0, so the analysis grouped the factors into five groupings as in Table 5.

Table 5 Analysis of five factors

Order and factors of variance performance measurement	% of variance	performance measurement
F1. Outsourcing & Lean Manufacturing	15.74%	<ul style="list-style-type: none"> - Product quality - Process quality - Waste - Defects - Suppliers - Work in process - Returns
F2. Customer Service & Staff Development	13.42%	<ul style="list-style-type: none"> - Product usage - Service - Complaints - Safety - Staff turnover - Personnel Development
F3. Value-Added Resources	12.95%	<ul style="list-style-type: none"> - Costs and expenditure - Profit - Sales/Value added - User problems
F4. Manufacturing Performance	11.63%	<ul style="list-style-type: none"> - Output - Lead time - Delivery lead time - Inventory
F5. Cash Performance	10.78%	<ul style="list-style-type: none"> - Orders/Receipts - Turnover - Cash flow
Total	64.52	Total of 64.52 % that 5 factors could explain variability of the original 24 variables

Among these five groups of factors, the researcher has provided justifications for creating a new name for these five factors: Outsourcing & Lean Manufacturing, Customer Service & Staff Development, Value-Added Resources, Manufacturing Performance, and Cash Performance, which were derived from the group

control variables and related variance performance measurement of the SME sectors' performance.

(2) Multinomial Logistic Regression Analysis

A multinomial logistic regression model was used in performance measurements that affect business profit of SMEs, in which the dependent variable was business profit, and independent variables were Quality, Time, Finance, Customer Satisfaction, and Human Resources.

The equation (3) shows the expression of multinomial logistic regression as:

$$Y_i = \beta_0 + \beta_{1k} \text{Quality}_k + \beta_{2k} \text{Time}_k + \beta_{3k} \text{Finance}_k + \beta_{4k} \text{Customer}_k + \beta_{5k} \text{Human}_k \quad (3)$$

When I = 1, 2, 3, 4 refer to performance measurements that affect business profit with the following categories: strong net profit, normal net profit, not strong enough net profit, and quite poor net profit respectively.

When k = 1, 2, 3 it refers to the opinion level of performance measurement of SMEs, which is divided into 3 levels of opinion (Highest, High, Medium).

Regarding the few results at the lowest level, this may affect the accuracy in the prediction, therefore, three levels were selected from the four levels of the categorized data. Hence, the lowest level was amalgamated with the medium level. In this model, the researcher used multinomial logistic regression with

independent variables such as Quality, Time, Finance, Customer satisfaction, and Human Resources, in which although quite poor, the circulation of funds is possible (net profit of around 5-7%) as a baseline category to the equation logic. There were three models as follows:

Model 1 The model of performance measurements that affect business profit as strong net profit of over 15%, could be written with the following equation.

$$Y_1 = 1.07 + 1.79 \text{Quality}_1 - 0.34 \text{Quality}_2 + 17.08 \text{Time}_1 - 0.87 \text{Time}_2 - 0.53 \text{Finance}_1 + 1.76 \text{Finance}_2 + 17.51 \text{Customer}_1 + 0.60 \text{Customer}_2 - 0.32 \text{Human}_1 - 0.47 \text{Human}_2$$

Model 2 The model of performance measurements that affect business profit as normal net profit of about 11-15%, could be written with the following equation.

$$Y_2 = 1.94 + 2.17 \text{Quality}_1 - 0.14 \text{Quality}_2 + 16.81 \text{Time}_1 - 0.59 \text{Time}_2 - 0.30 \text{Finance}_1 + 1.65 \text{Finance}_2 + 17.10 \text{Customer}_1 + 0.06 \text{Customer}_2 - 1.70 \text{Human}_1 - 1.14 \text{Human}_2 \quad (5)$$

Model 3 The model of performance measurements that affect business profit as not strong enough net profits of about 8-10%, could be written using the following equation.

$$Y_3 = 1.35 + 1.09 \text{Quality}_1 - 0.22 \text{Quality}_2 + 16.49 \text{Time}_1 - 1.17 \text{Time}_2 + 2.60 \text{Finance}_1 + 1.41 \text{Finance}_2 + 16.01 \text{Customer}_1 + 99 \text{Customer}_2 - 0.71 \text{Human}_1 - 0.25 \text{Human}_2 \quad (6)$$

From the models mentioned above, when compared with the performance measurements that affect business profit which is quite poor, namely in the range of about 5-7%, but the circulation of funds is still possible, it was found that time and finance factors affected the model of performance measurements that affect business profit as strong net profit of over 15%.

The model of performance measurements that affect business profit as normal with net profit of about 11-15%, when compared with the entrepreneurs would have opportunity to gain as quite poor, but circulation of funds is possible of about 5-7%. It was found that time and finance factors affected the entrepreneurs

in terms of the possible opportunity to gain a normal net profit.

The model of performance measurements that affect business profit as not strong enough net profits of about 8-10%, when compared with the entrepreneurs would have opportunity to gain as quite poor, but circulation of funds is possible of about 5-7%. It was found that only the finance factor affected to gain as a not strong enough net profits.

By using multinomial logistic regression, it shows that this method is able to predict the performance measurements related to business net profits of SMEs with an accuracy of 51.3% as shown in Table 6.

Table 6 The Results of the Multinomial Logistic Regression Model

Performance measurements	Multinomial Logistic Regression Model				
	Strong net profit (net profit of more than 15%)	Normal net profit (net profit of about 11-15%)	Not strong enough, there are uncertain profit, but no loss (net profit of around 8-10%)	Quite poor, but circulation of funds is possible (net profit of around 5-7%)	Percentage of prediction
<i>Strong net profit</i> (net profit of more than 15%)	38	36	34	0	35.2%
<i>Normal net profit</i> (net profit of about 11-15%)	18	93	41	0	61.2%
<i>Not strong enough, there are uncertain profit, but no loss</i> (net profit of around 8-10%)	7	40	74	0	61.2%
<i>Quite poor, but circulation of funds is possible</i> (net profit of around 5-7%)	1	9	9	0	0.0%
Percentage of prediction	16.0%	44.5%	39.5%	0.0%	51.3%

From Table 6, the results of the multinomial logistic regression model is used for performance measurements that affect business profit as strong net profit of over 15%, normal net profit of about 11-15%, not strong enough net profits of about 8-10%, and quite poor, but circulation of funds is still possible of about 5-7%. It was found that the model of performance measurements that affect business profit as strong net profit, normal net profit, and not strong enough net profits have the percentage of prediction at 16%, 44.5%, and 39.5% respectively. In conclusion, there are two factors, time and finance, which significantly affect the business profit regarding the results of the multinomial logistic regression models. These results support Hypothesis 2: *SMEs' business profit depends on performance measurements.*

In the following section, the research outcomes were evaluated and synthesised for discussion to enhance the performance of SMEs in their business profit, and to implement policies and strategies for SME development.

Discussion

The outcomes of this research project contribute significantly to the knowledge in this field based on these discussions.

Firstly, SMEs entrepreneurs in each sector had performance measurement at high-level, except the entrepreneurs in the manufacturing sector had medium level opinion on product usage such as providing free workshops on product use, and services such as how to impress customers in order to retain customers.

Similarly, the entrepreneurs in the service sector had performance measurement at the medium level opinion on service in making customers impressed when they come for the service to retain existing customers. These were consistent with the concepts of Jarvis, et al. (2000), Reijonen, & Komppula (2007), Fred (2011), Inman (2014), Ivars & Martínez (2015).

Secondly, different SMEs businesses had business profit at a strong net profit above 15% in the service sector. It is argued that time and finance factors affected business profits at a strong net profit of 15% according with the concept of time such as the reduction in waiting time and resource utilization, and the concept of finance such as sales, cash flow and inventory as defined by Ôhno, 1998 and Olsen (2007) which stated that the costs of the waste of waiting were important factors in gaining competitive advantages and business profit.

Conclusion

When considering each SME sector individually, they were all at the high level of performance measurement except SMEs in the manufacturing sector which were at the middle level as were those in the service sector. In addition, it was found that different SME sectors had different business profits as seen from the service sector which had high business profit, whereas the manufacturing sector had the most normal net profit, and the wholesale & retail sector had profit at the not strong enough level.

Finally, the results of performance measurement related to business profits of SMEs shows that SMEs entrepreneurs

should focus on the factors of time and finance. It affects business profits at a high net of 15% or more and indicates that the greater the focus on performance measurement, and the higher possibility of net profit.

Research Implications

The analyses and discussion refer to the conceptual framework, hypothesis, and concepts derived from the literature review to elucidate the significance of entrepreneurs' responses, and their relationship to the research outcomes. It is concluded emphatically that SMEs entrepreneurs should focus on factors of time and finance as follows:

- (1) The entrepreneur should focus on performance measurement in the time aspect to deliver products/ services correctly at the right time and place, and to shorten the waiting time, in order to reduce the distribution period to enhance the company's productivity.
- (2) The entrepreneur should focus on the performance measurement in the financial aspect to manage the company assets, reduce costs, increase cost-effectiveness, increase revenue, and profitability.

Possible directions for future research that might build on this research project include the impact or finding other factors which affect SMEs' business profit. These areas should be investigated. The data from this study can be applied by operational management teams to create more effective performance. Problems and obstacles

that affect performance measurement of SMEs' business should be studied to find guidelines for continuous business development and changes of environment both inside and outside the company.

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