



# Competitive strategies and firm performance: the mediating role of performance measurement

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## Abstract

**Purpose** – The purpose of this paper is to examine the mediating role performance measurement plays in the relationship between competitive strategies and firm performance.

**Design/methodology/approach** – This study conducted a mail-survey of Thai listed companies in 2009. A total of 101 Thai listed companies' executives, each representing their company, participated in this study. The SPSS version 11.5, path-analytical model is adopted to analyze the survey data obtained.

**Findings** – This study finds that generally, all competitive strategies positively and significantly enhance firm performance through performance measurement. Specifically, firms' differentiation strategy not only has a direct and significant impact on firm performance but also it has indirect and significant impact on firm performance through financial measures. Cost leadership strategy that firms pursue does not directly affect firm performance. However, it does so indirectly and significantly through financial performance measures.

**Research limitations/implications** – Future research could consider the use of longitudinal data to ascertain more clearly these causal relationships.

**Practical implications** – The paper offers managerial implications that whether a firm chooses to pursue cost leadership or differentiation strategies, a strong emphasis on performance measurement will ensure the positive impact on firm performance in a fierce competitive environment.

**Originality/value** – This paper adds to the existing theoretical discussion and analyses the research and findings on the mediating role of performance measurement on the relationship between competitive strategy and firm performance.

**Keywords** Competitive strategy, Performance measurement, Firm performance, Performance management, Thailand

**Paper type** Research paper



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## 1. Introduction

Performance measurement plays a key role in developing, implementing and monitoring a strategic plan. It enables managers to evaluate whether organizational objectives have been achieved, and is further used to develop and compensate managers. It helps managers monitor whether the company is moving in the direction they want it to go. However, to the authors' knowledge there has been no study on the relationship between competitive strategy, performance measurement, and firm performance. In particular, no relevant evidence exists in Thailand.

Literature review of existing studies shows that there are different performance measurement systems (Chenhall and Langfield-Smith, 1998). Thus, it is important to ask what the most appropriate performance measures are which should be aligned to competitive strategy. Managers still face the issue of effective performance measurement, and may be overwhelmed with performance data (Maltz *et al.*, 2003; Moullin, 2007). In this paper, we argue that a competitive strategy can help a firm achieve its competitive advantage only when appropriate performance measurement is used and that a good fit between the competitive strategy and performance measurement will lead to higher firm performance.

This study examines the relationship between competitive strategy and firm performance as well as the mediating role of performance measurement. Previous studies only analyze the indirect effect of performance measurement on the relationship between differentiation strategy and firm performance (Spencer *et al.*, 2009). Our study adds to the existing theoretical discussion and analyses by investigating specifically the mediating effect of performance measurement on the relationship between two main types of strategies proposed in Porter's model, namely, cost leadership and differentiation strategies, and firm performance through performance measurement.

We develop a theoretical framework that hypothesizes the mediating effect of performance measurement on the relationship between competitive strategy and firm performance. This paper aims to contribute to a better understanding on which characteristics of performance measurement are appropriate to each type of competitive strategy proposed in Porter's model. It also aims to investigate the impact of such performance measurement on firm performance in the context of Thai industries. In addition, we offer managerial implications with respect to choosing appropriate performance measurements to align with formulated competitive strategy in order to enhance firm performance. It is our assertion that performance measurement has a significant role and is a significant tool in implementing competitive strategies that can lead to improved firm performance.

This paper is structured as follows. It first reviews the relevant literature and develops the theoretical framework and hypotheses. Then, the research methodology and data collection are described. Finally, data analysis and discussion of results as well as a conclusion are provided.

## 2. Theoretical framework and hypotheses

### 2.1 *Competitive strategy and firm performance*

Strategy is a set of decisions and actions that managers make and take to attain superior company performance compared to rivals (Parthasarthy, 2007, p. 7). Business-level strategies are significant in explaining variations in firm profitability and long-term performance (Beard and Dess, 1981). Porter's model of competitive strategy is considered in this study because of its popularity, well-defined structure,

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clarity, simplicity and generality, and the way it complements two other approaches for the analysis at the aggregate level (Ormanidhi and Stringa, 2008). The two main typologies are cost leadership and differentiation. Focussed cost leadership and focussed differentiation are excluded in this study. Focussed cost leadership and focussed differentiation strategies concentrate on narrow product or market segments and are appropriate for companies with the constrained resources that serve niche markets. Thus, focussed strategies are not considered in this study.

Cost leadership strategy is an integrated set of actions taken to produce goods or services with unique features that are sold to customers at the lowest cost compared to competitors or at reduced cost to achieve superior profitability. Dess and Davis (1984) find that the overall low-cost cluster has the highest average return on assets. Power and Hahn (2004) find that cost leadership strategy provides a statistically significant performance advantage. Allen and Helms (2006) find a cost leadership strategy relates to organizational performance.

A differentiation strategy is an integrated set of actions taken to produce goods or services (at acceptable cost) that customers perceive as being different in ways that are important to them. A study of the profit impact of a marketing strategy (PIMS) by Phillips *et al.* (1983) finds a significant and positive relationship between differentiation and market share. Firms choose from among two business-level strategies to establish and defend their desired strategic positioning against rivals. In the past, some studies found that firms prefer cost leadership as a competitive strategy to enhance firm performance. A number of studies find that firms that choose differentiation as competitive strategy outperform their competitors.

Scholars have discussed various reasons why firms need to choose an appropriate competitive strategy to enhance their performance. Porter (1985) concludes that firms that choose and implement generic strategies achieve sustained competitive advantage. However, the literature shows no consistency regarding the direction of the relationship between competitive strategy and firm performance. Thus, we hypothesize the following:

*H1.* There is a relationship between a competitive strategy and firm performance.

*H1a.* There is a relationship between cost leadership and firm performance.

*H1b.* There is a relationship between differentiation strategy and firm performance.

### *2.2 Competitive strategy and performance measurement*

A firm formulates a strategy to attain its long-term goals using a control system to measure progress toward goals and make necessary adjustments.

Empirical studies confirm that there is some relationship between business strategy and performance measures along various dimensions. Kaplan and Norton (1996) claim that performance measurement has a critical role in translating strategy into action. McAdam and Bailie (2002) find that performance measures linked to strategy are more effective. Maltz *et al.* (2003) suggest that the final set of performance measures would depend on the firm's strategy. Performance measurement also has a supporting role in strategic planning (Tapinos *et al.*, 2005). To be effective, a firm's business strategy should align with its management control system. Otherwise, the managers will not be able to know whether the firm is making progress toward its goals.

The existing literature reflects a relationship between competitive business strategy and performance measures in various dimensions (Olson and Slater, 2002; Maltz *et al.*, 2003; Gosselin, 2005). Each strategy is unique and requires different types of performance measures. Defender and prospector firms are competitive strategies classified by Miles and Snow (1978). Defender firms tend to use financial measures, while prospector firms prefer to use non-financial measures. A defender is a survivor whose main aim is to protect its current business and focus on manufacturing existing designs more efficiently through competitive pricing. A prospector firm continuously explores and exploits new products or market opportunities to achieve high growth. Prospector firms tend to take a differentiation strategy and cost leadership seems more likely to be taken by defender firms. Thus, a firm with a differentiation strategy may prefer to use non-financial measures and a cost leadership firm tends to use financial measures.

In testing different types of strategy and firm performance, Simons (1987) finds that defender firms tend to rely more on financial measures such as short-term budgets to compensate their managers. Olson and Slater (2002) find that the high-performing and low-cost defenders place greater emphasis on financial perspective and less emphasis on customers and innovation and growth perspectives. However, they find that prospectors, high-performing analyzers, and high-performing differentiated defenders place greater emphasis on non-financial perspectives. Similarly, Gosselin (2005) finds that defenders seem to use non-financial measures less frequently in Canadian manufacturing firms.

Govindarajan and Gupta (1985) report that firms following a “build” strategy (increasing sales and market share) tend to place emphasis on non-financial measures (such as new product development, market share, R&D, customer satisfaction) greater than firms following a “harvest” strategy (maximizing short-term earnings). Ittner *et al.* (1997) find that the relative weight placed on non-financial measures is greater in firms following an innovation-oriented “prospector” strategy than in firms following a “defender” strategy. Previous studies generally use Miles and Snow’s model and are largely conducted in western countries. This study, however, adopts only the two competitive strategies proposed in Porter’s model which are implemented specifically in the Asian context. In addition, the extent to which organizations use multiple measures to actually link their performance measures more closely to strategic priorities has not been investigated (Banker *et al.*, 2001).

Based on the above, we hypothesize:

- H2.* There is a relationship between a competitive strategy and performance measurement.
- H2a.* There is a relationship between cost leadership strategy and performance measurement.
- H2b.* There is a relationship between differentiation strategy and performance measurement.

### *2.3 Performance measurement and firm performance*

Performance measurement across a range of critical success factors is critical to the survival of the business and derives from the competitive strategy. Performance measures provide a set of mutually reinforcing signals that direct managers’ attention to the important strategic areas that translate to organizational performance outcomes

(Dixon *et al.*, 1990). They also guide managers' behavior toward key organizational outcomes. Performance measures can be used to improve an organizational process (Neely *et al.*, 1996) by focussing on business processes that deliver value to customers (Bititci *et al.*, 1997; Neely and Adams, 2001) and ultimately have a significant positive link with firm performance (Fleming *et al.*, 2009; Joiner *et al.*, 2009) and organizational excellence (Moullin, 2007). Considering each type of performance measures, non-financial measures are better predictors of a firm's long-term performance (Kaplan and Norton, 2001; Hoque, 2004). In contrast, Perera *et al.* (1997) find no association between the use of non-financial performance measures and perceived firm performance in organizations that follow a "customer-focussed" manufacturing strategy. This is supported by Neely *et al.*'s (2004) study, which finds no relationship between non-financial measures and performance. Jusoh *et al.* (2008) find no significant effect of using financial and customer measures on firm performance. However, financial measures are still used, especially in unstable environments. (Gosselin, 2005)

The literature is inconclusive on whether performance measurement, namely, financial and non-financial measures, is associated with firm performance. Studies in the Asian context are scarce. Thus, it is worth investigating the relationship between performance measures and firm performance because performance measures help managers monitor and assess their firm's progress toward strategic goals and objectives. Based on the above discussion, we hypothesize the following:

*H3.* Performance measurement is associated with firm performance.

*H3a.* Financial performance measures are associated with firm performance.

*H3b.* Non-financial performance measures are associated with firm performance.

#### *2.4 Competitive strategy, performance measurement, and firm performance*

A performance measurement system (PMS) has a critical role in translating strategy into action (Kaplan and Norton, 1996) as well as providing a supporting role in strategy development (Tapinos *et al.*, 2005). Empirical studies confirm that there are relationships between strategy and performance measures (Maltz *et al.*, 2003; Gosselin, 2005). Strategy also has an indirect relationship to firm performance. Hoque (2004) finds a significant and positive association between management's strategic choices and firm performance when management uses non-financial measures for performance evaluation. Joiner *et al.* (2009) find that both non-financial measures and financial measures, which are associated with a flexible manufacturing strategy, enhance firm performance. Spencer *et al.* (2009) find an indirect association between differentiation strategic priorities and organizational performance through the use of non-financial and financial performance measures. However, previous studies suggest contradictory results. For example, a study by Verbeeten and Boons (2009) gives no support for the claim that aligning performance measurement to the strategic priorities of a firm positively affects performance. Moreover, there is only one study which uses Porter's model of strategy.

Thus, there is inconclusive evidence of the relationships among strategic priority, performance measurement and firm performance, especially in the Asian context. Hence, in this study, we hypothesize that:

*H4.* There is an indirect association between a competitive strategy and firm performance through the use of performance measures.

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- H4a.* There is an indirect association between a cost leadership strategy and firm performance through the use of financial performance measures.
- H4b.* There is an indirect association between a differentiation strategy and firm performance through the use of financial performance measures.
- H4c.* There is an indirect association between a cost leadership strategy and firm performance through the use of non-financial performance measures.
- H4d.* There is an indirect association between a differentiation strategy and firm performance through the use of non-financial performance measures.

### 3. Method

#### 3.1 Sample and data collection

The study sample comprises all Thai listed companies which drive investment in the economic sector. Thai listed firms are sources of employment, income distribution, and taxes and reflect objective economic growth.

The questionnaire in this study was based on the relevant literature review. For the content validity, we used the literature review as well as consulting subject matter experts in performance measurement for the scale instrument development (Conca *et al.*, 2004; Govindarajan, 1988). Since the questionnaire was developed in English, and a Thai version was distributed, back translation from English to Thai and then from Thai to English was conducted to confirm the accuracy of the content. The Thai version was tested to determine whether statements were clear and understandable and was reviewed by experts again after the content was revised. Then the revised Thai version was used in the pre-testing with CEOs of 20 firms before mailing the questionnaires.

A cross-sectional questionnaire survey was administered to 561 Thai listed companies in manufacturing and service industries in December 2009. It is efficient and economical in terms of budgeting to gather cross-sectional information (Chenhall, 1997; Hoque, 2004; Gosselin, 2005). Each company was initially contacted by telephone to identify the name of the most suitable person within each business unit, his or her job title and the business unit's current address. These sample respondents includes chief executive officers (CEOs), chief executives within business units or vice presidents or senior managers in strategy divisions or senior managers of human resources. The questionnaires were sent to CEOs after they were contacted by phone. The reason that only the CEO level was taken as our sampling frame is because they are the ones who provide vision, decide on the firm's mission and strategies and oversee the strategy implementation process. The questionnaire is addressed to the CEO of sample firms. If the CEOs did not answer by himself, they would assign some other person who was in the related executive position and concerned business unit to complete the survey. A follow up letter was sent to non-respondent firms about four weeks after the initial mail survey. Then, about two weeks later, we called non-respondents by telephone to follow up in an attempt to increase the response rate. 101 completed and usable questionnaires were eventually received, a response rate of 18 percent. A *t*-test was used in detecting any bias between early and late responses, but no significant difference was found among the two sets of observations.

The data obtained were analyzed by using statistical software SPSS Version 11.5. The analytical methods used were factor analysis, correlation, regression, and

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path analysis. An exploratory factor analysis method was used to identify the dimensions of competitive strategy. The factor analysis method has been used by many researchers (Gosselin, 2005; Allen and Helms, 2006; Jusoh *et al.*, 2008; Joiner *et al.*, 2009). The ordinary least squares regression for path analysis allows a dependent variable in one equation to become an independent variable in another equation (Schumacker and Lomax, 1996). Thus, it was used to investigate the association between competitive strategy and firm performance through sets of measures. Path coefficients are also used to decompose correlations between dependent and independent variables into their direct and indirect effects to determine mediating effects (Asher, 1983). This method has been used by Joiner *et al.* (2009) who tested the mediating role of performance measurement on the relationship between a firm's strategic orientation to flexible manufacturing strategy and organizational performance.

#### 4. Measures

##### 4.1 *Competitive strategy*

In this study, the measures of two main types of Porter's model of competitive strategies were obtained from the literature review and then supported by practitioner experts. Samples of the measures include: a focus on producing higher quality products/services than competitors, a focus on producing a variety of product/services, a focus on vigorous pursuit of cost reduction, and a focus on process improvement through manufacturing function rather than the development of new products. Respondents were asked to indicate the degree of emphasis their firms had given to strategic priorities over the previous three years on a five-point Likert scale ranging from 1 (the least emphasized) to 5 (the most emphasized). A principal component analysis (PCA) with varimax rotation with sample size > 100 (Hair *et al.*, 1998) was used to determine the groups. Two factors are examined: cost leadership and differentiation. Cronbach's  $\alpha$  was used to test the reliability, yielding the Cronbach's  $\alpha$  of cost leadership and differentiation at 0.54 and 0.85, respectively.

The results of factor analysis confirm the items defining the characteristics of cost leadership strategy and differentiation strategy as suggested in the literature. This suggests the validity of item measurement. Calculating summated scales by averaging all items in each identified factor leads to the two types of competitive strategy classification. Among the sample respondents, 64 companies were then classified as differentiation strategy and 37 companies as cost leadership by taking the highest average mean value which reflects more dominant characteristics of each firm's strategy.

##### 4.2 *Performance measurement*

A modified version of Le Cornu and Lockett's (2000) instrument was used in this study. Some items were deleted from and some added to the original list. The final measures contained 34 performance items, and respondents were asked to rate the extent to which these performance measures have been commonly used by their business units on a five-point Likert scale ranging from 1 (not at all) to 5 (to a very great extent). Classification of the measures into financial and non-financial measures was based on prior classifications made by Horngren *et al.* (1994, pp. 890-2) and Waterhouse and Svendsen (1999). To be classified as financial, an item has to be able to be expressed in monetary terms, and/or be specifically or directly reflective of financial value rather than customer-focussed factors. In all, ten items were used as financial measures,

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including sales revenues, operating income or profit before tax, cost of goods sold, and total expenses, with 24 items used as non-financial measures, including customer satisfaction, number of customer complaints, on-time delivery, employee health and safety. Reliability tests were also performed on the two-scaled items. The financial measure sub-scale (Fin) has the Cronbach  $\alpha$  coefficient of 0.76, while the non-financial sub-scale (Nonfin) has the Cronbach  $\alpha$  coefficient of 0.91, suggesting high reliability.

#### 4.3 Firm performance

Firm performance was measured using an instrument developed by Govindarajan and Gupta (1985), Abernethy and Stoelwinder (1991), Abernethy and Guthries (1994), Chong and Chong (1997), Chenhall and Langfield-Smith (1998), Mia and Clarke (1999), Hoque (2004) and Joiner *et al.* (2009). The instrument includes: increase of sales or revenues, cash flow from operations, return on investment, return on equity, market share, new product development, market development, the quality of products and services, personnel development, employee job satisfaction, employee productivity, and employee commitment or loyalty to the firm. There were advantages in using a well-tested and robust instrument widely used in the context of strategic management studies. An additional indicator is profit margin, the most popular indicator suggested in the literature. Respondents were asked to indicate changes in the performance of those indicators in the last three years on a scale from 1 = decreased tremendously to 5 = increased tremendously. A weighted average performance index was obtained for each firm. The performance represents recent improvements in actual firm performance as perceived by the respondents. Collier *et al.* (2004) analyze the necessity of using perceptual data in large-scale surveys examining the development of strategy and highlight that “although perceptions may not always equate with reality, they are important because they are likely to be the basis of behavior.” The degree of changes in performance was used as a weighted average for all performance indicators. The Cronbach’s  $\alpha$  coefficient value was 0.90, indicating satisfactory internal reliability of the scale.

#### 4.4 Control variables

The study uses industry and the nature of the competitive environment to control for the effect they may have on firm performance.

### 5. Results

Table I reveals that about 58.4 percent of the companies are from manufacturing industry. 75 percent of the companies have operated for more than 20 years. About 55 percent of the respondents are male and 77 percent are within the age group of 31-50 years. The majority are directors and managers of the firm.

Table II shows the descriptive statistics (mean, standard deviation, skewness, and kurtosis) and reliability coefficients for all variables, and the correlation matrix among the variables. There are significant correlations for all variables of competitive strategy, performance measurement, and firm performance except for cost leadership and firm performance. The correlations between the variables in Table II are generally  $<0.6$ , indicating the absence of multi-collinearity. Further diagnosis of collinearity among the variables using variance inflation factors (VIFs) suggests very low VIFs for all the variables. Because each of the VIFs is substantially  $<10$ , there is little reason to suspect multi-collinearity among the variables (Hair *et al.*, 2006).



	Group	n	%
<i>Firm characteristics</i>			
Company type	Manufacturing	59	58.4
	Service	42	41.6
	Total	101	100
Company's age	<10 years old	6	5.9
	10-20 years old	19	18.8
	>20 years old	76	75.2
	Total	101	100
<i>Respondent's profile</i>			
Gender	Male	55	54.5
	Female	46	45.5
	Total	101	100
Age	Under 30 years old	6	5.9
	31-40 years old	39	38.6
	41-50 years old	38	37.6
	More than 50 years old	18	17.8
	Total	101	100
Respondent's job position	Chief executive officer	7	6.9
	Vice president	14	13.9
	Assistant vice president	13	12.9
	Director	33	32.7
	Manager	34	33.7
	Total	101	100

**Table I.**  
Profiles of respondents  
and their firms

Variable	1	2	3	4	5	Mean	SD	Skewness	Kurtosis
1. Cost leadership	0.54	0.38**	0.20*	0.31**	0.12	3.35	0.80	-0.04	-0.74
2. Differentiation		0.85	0.26**	0.38**	0.48**	3.57	0.92	-0.48	-0.16
3. Financial measures			0.76	0.52**	0.34**	4.12	0.51	-0.14	-0.73
4. Non-financial measures				0.91	0.21*	3.09	0.75	0.21	-0.44
5. Firm performance					0.90	3.79	0.55	-0.63	-0.14

**Table II.**  
Descriptive statistics,  
correlation coefficients  
and reliability coefficients  
for main variables

**Notes:** \*,\*\*Correlations significant at 0.01 and 0.05 levels (two-tailed), respectively. Cronbach's  $\alpha$  for reliability test is shown on the diagonal line

The reliability of the measures was assessed through Cronbach's  $\alpha$  coefficients. The items of each variable were developed based on previous studies. The Cronbach's  $\alpha$  for each measure are shown on the diagonal in Table II and range from 0.54 to 0.91. Although one is slightly below 0.60, many researchers noted that  $\alpha$ 's of between 0.50 and 0.60 are generally acceptable for exploratory research (Nunnally and Bernstein, 1994; Gupta and Somers, 1996).

Ordinary least squares regression-based path analysis was adopted to test the hypotheses. This technique allows a dependent variable in one equation to become an independent variable in another equation, and it is often employed to test relatively simple relationships (Schumacker and Lomax, 1996). We used this technique to show the relationship between strategy and performance measurement, the relationship

between performance measurement and firm performance, and the indirect relationship between strategy and firm performance via performance measurement.

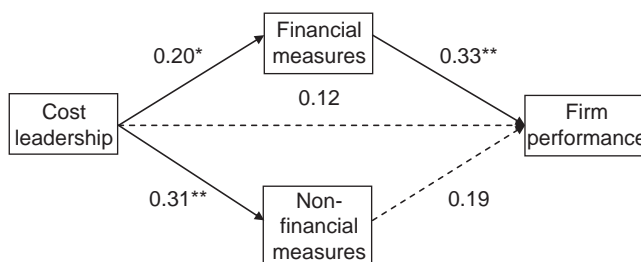
The use of multiple regressions requires certain assumptions about the data, especially in relation to distributional characteristics. Data screening was conducted to ascertain that the data satisfied the relevant assumptions for multiple regressions. Two conditions were met. First, no evidence of multi-collinearity was found by considering the VIF for each variable, which was found to be lower than two and well below the benchmark. Second, the data approximately followed a multivariate normal distribution based on kurtosis and skewness analyses. As a rule of thumb, a variable is reasonably close to normal if its skewness and kurtosis have values between  $-1.0$  and  $+1.0$  (Hair *et al.*, 2006).

Four main models were developed to test the study hypotheses shown in Table III. The regression results for competitive strategy and performance measurement are reported for Model 1. Models 2, 3, and 4 report the regression results for performance measurement and firm performance (Model 2); competitive strategy and firm performance (Model 3); and competitive strategy, performance measurement, and firm performance (Model 4). Each sub-model is presented in Figures 1 and 2. In each case, the regression results were used to compute the magnitudes (standardized  $\beta$  coefficients) of the direct effects in the path models, and the method was also used to test the significance of the mediating effects.

Impact of	Cost leadership model		Differentiation model	
	Path coefficient	<i>t</i> -value	Path coefficient	<i>t</i> -value
<i>Financial measures on</i>				
Firm performance	0.33**	3.40	0.23**	2.61
<i>Non-Financial measures on</i>				
Firm performance	0.19	1.82	0.03	0.28
<i>Cost leadership on</i>				
Financial measures	0.20*	1.99		
Non-financial measures	0.31**	3.29		
Firm performance	0.12	1.17		
<i>Differentiation on</i>				
Financial measures			0.26**	2.63
Non-financial measures			0.38**	4.12
Firm performance			0.48**	5.44

Notes: \* $p < 0.05$ ; \*\* $p < 0.01$

**Table III.**  
Path coefficients for the models



Notes: \* $p < 0.05$ ; \*\* $p < 0.01$

**Figure 1.**  
Path model for cost leadership strategy

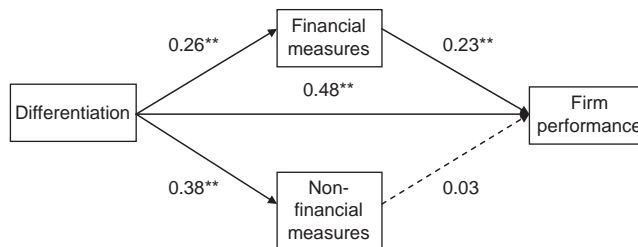
5.1 Result of hypotheses testing

The results of the path analytic model for testing all hypotheses are presented in Figures 1 and 2. *H1a* states that there is a relationship between cost leadership strategy and firm performance. This hypothesis is rejected because the results show an insignificant relationship between cost leadership and firm performance. In contrast, a differentiation strategy is significantly associated with firm performance and thus *H1b* cannot be rejected.

*H2* states that there is a relationship between a competitive strategy and performance measures. This hypothesis is supported since both cost leadership and differentiation strategies are significantly associated with all performance measurement components. The result supports both *H2a* and *H2b*.

*H3* states that performance measurement is associated with firm performance. This requires that at least one significant path exists between the performance measurement dimensions and firm performance. Financial measures link firm performance for both the cost leadership and differentiation models which support *H3a*. *H3b* is rejected because non-financial measures are not associated with firm performance for either types of strategy. These results suggest that *H3* cannot be rejected.

To test *H4*, path coefficients were used to examine the total effects of competitive strategy on firm performance through two performance measurement dimensions. We then compared them with the direct effect of competitive strategy on firm performance. The indirect effect is calculated by multiplying the contributing path coefficients. Table IV shows the direct, indirect and total effects of the competitive strategy components on firm performance. The indirect effect is calculated by multiplying the contributing path coefficients. For example, the indirect effect of differentiation on firm performance through financial measures (0.06) is obtained by multiplying the coefficient from differentiation to financial measures (0.26) by the coefficient from financial measures to firm performance (0.23). The total effect (0.54) is the sum of the direct (0.48) and indirect effects (0.06). Table IV shows the direct, indirect, and total effects of the competitive strategy components of cost leadership and



Note: \*\* $p < 0.01$

Figure 2. Path model for differentiation strategy

Table IV. Total effects of competitive strategy on firm performance

	Impact of effect				
	Direct	Financial measures Indirect	Financial measures Total effect	Non-financial measures Indirect	Non-financial measures Total effect
Cost leadership on firm performance	0.12	0.06	0.18	0.06	0.18
Differentiation on firm performance	0.48	0.06	0.54	0.01	0.49

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differentiation on firm performance. For *H4* to be rejected, the total effect of the competitive strategy on firm performance through performance measurement should be less than the direct effect of each competitive strategy on firm performance. The total effects of cost leadership and differentiation on firm performance through performance measurements are greater than the direct effect of cost leadership and differentiation on firm performance. These results imply that *H4* (*H4a-H4b*) cannot be rejected. Table IV suggests that the amount of total effect in all relationships is higher than direct effect. It indicates that both types of performance measures, financial, and non-financial measures, mediate the relationship between the two types of competitive strategies and firm performance.

## 6. Discussion and conclusions

The results offer further insights into the relationship between competitive strategy and firm performance by exploring the mediating role of performance measurement. Consistent with the literatures, this study finds an indirect effect between competitive strategic priorities and firm performance through the use of performance measurement (Spencer *et al.*, 2009; Joiner *et al.*, 2009). However, the result contradicts the study of Verbeeten and Boons (2009) which finds no support for the claim that performance measurement of the strategic priorities of the firm positively affects performance. Verbeeten and Boons (2009) conducted their research on medium- and large-sized firms operating in the Netherlands and they consider strategy in term of specific strategic priorities such as the importance of market/customer orientation, innovation, and personnel development. Joiner *et al.* (2009) and Spencer *et al.* (2009) examined Australia's largest manufacturing companies and considered strategy in term of flexible manufacturing strategy and differentiation strategy, respectively. The results of this study support those of Joiner *et al.* (2009) and Spencer *et al.* (2009). This is possibly because this study also deals with large listed firms while Verbeeten and Boon's (2009) study deals with medium- and large-sized firms. This study suggests that in the Thai context, firms use financial measures with any type of competitive strategy in order to enhance firm performance. Thus, most firms would still behave more like defender firms as defined by Miles and Snow (1978).

Our results fully support the importance of using both financial and non-financial performance measures for firms pursuing a cost leadership strategy and a differentiation strategy, consistent with the conventional theories (McAdam and Bailie, 2002; Maltz *et al.*, 2003; Gosselin, 2005). Differentiators tend to place a high emphasis on the use of non-financial measures (Govindarajan and Gupta, 1985; Ittner *et al.*, 1997) while cost leadership firms place a greater emphasis on financial measures (Simons, 1987; Olson and Slater, 2002; Gosselin, 2005). Our empirical results also provide support for the surprising findings of Simons (1987), which reveal that differentiators also use financial measures, and for Olson and Slater (2002), who find that defender firms use non-financial measures less frequently.

In line with previous research (Dixon *et al.*, 1990; Neely *et al.*, 1996; Bititci *et al.*, 1997; Neely and Adam, 2001; Moullin, 2007; Fleming *et al.*, 2009; Joiner *et al.*, 2009), this study finds that performance measurement has a positive influence on firm performance. Firms use financial measures to enhance performance while non-financial measures are not often used to enhance firm performance, supporting the studies of Perera *et al.* (1997), Neely *et al.* (2004), and Gosselin (2005). However, these results contradicts the findings of Kaplan and Norton (2001) and Hoque (2004) which conclude that non-financial measures are better predictor of firm performance.

Financial measures are direct reflections of current profitability and operating efficiency functioning as a “dashboard” to monitor and continually enhance the firm’s financial performance (Simons, 1990). Financial measures can also be used as indicators for future earnings potential, which publicly-traded firms cannot afford to neglect when reporting to their stakeholders in order to attract more capital and increase public confidence. However, non-financial measures are also important because they are more actionable and future-oriented, and their use can improve an organization’s capabilities for future planning and strategy implementation (Perera *et al.*, 1997). In this study, financial measures are significantly associated with non-financial measures, with the correlation coefficient of 0.52 presented in Table II. Therefore, financial measures such as sales revenues, operating income or profit before tax, cost of goods sold, and non-financial measures, such as customer satisfaction, number of customer complaints, on-time delivery, employee health and safety, are important for firm performance.

Effective performance measures should provide a map that guides managers’ behaviors toward critical firm outcomes such as profit, cash flow, new product development, and personnel development. Hence, the study findings support the idea that the use of performance measures can enhance firm performance. Additional statistical analyses were made and we found that the measures firms prefer to use, as indicated to a great extent in the questionnaire and chosen by more than 50 firms including sales revenues, cost of goods sold, operating income, sales growth, and customer satisfaction. The findings suggest that only one non-financial measure, customer satisfaction, is related to firm performance.

The study also provides evidence of the relationship between a competitive strategy and firm performance in the Thai context. Differentiation is significantly associated with firm performance, contrary to the findings of Power and Hahn (2004), Allen and Helms (2006), and Dess and Davis (1984), which find a positive association between cost leadership and firm performance. This is because differentiation can be a way of achieving a low-cost position. When such a position is not available, a firm may have to base its sustainable competitive advantage on the simultaneous and continuous pursuit of both low cost and differentiation (PIMS study by Phillips *et al.*, 1983).

Our study demonstrates that competitive strategies with appropriate performance measurement can improve the competitiveness of Thai listed firms.

An important aspect of strategy development is the translation of firm-level competitive strategies into performance measures. We demonstrate that even in less developed economies, performance measures represent a way that firms can achieve their strategic objectives. We find a significant relationship between competitive strategy and performance measurement. Our findings confirm that performance measurement allows firms to implement their competitive strategies. Of the two performance measures components, our findings indicate that only financial measures appear to significantly influence firm performance. In addition, financial measures are more important than non-financial measures in mediating the relationship between competitive strategy and firm performance especially in the context of Thailand.

This study finds that a differentiation strategy has a significant direct relationship with firm performance while cost leadership does not. However, both cost leadership and differentiation strategies influence firm performance through financial measures. These findings are not only interesting but also unexpected. The underlying assumption in the literature is that aligning both financial and non-financial measures

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with competitive strategy will lead to enhanced firm performance. As the result of the study is inconclusive, we therefore cannot refute those assumptions.

Although the alignment of competitive strategy with non-financial measures do not lead to significant improvements in performance, the alignment of competitive strategy with financial measures leads to significant improvements in firm performance. Thus, it appears that firms in developing economies faced with increased competition brought about by trade liberalization and other reforms will benefit greatly from an emphasis on financial measures in combination with their selected competitive strategy.

There are a few limitations in this study. Since we designed our study specifically to examine Thai listed companies, interpreting our results beyond that domain should be done with caution. Both the competitive strategy and PMS instruments used here are still relatively new in the literature and could be refined in future studies. A limitation associated with the measurement of PMS was the use of performance measures. It is possible that the reported lack (or low level) of use could mean either that the measures were not available, or were available but not useful. Further research is required to improve this measure. Another limitation is that the use of self-assessed performance has been criticized due to the potential for bias, and therefore the results must be interpreted in light of this caveat. Further, there may be variables omitted from the model in this study that may also moderate, or mediate, the relationship between different performance measures and firm performance. Anecdotal evidence suggests that not all organizations experience improved performance through the development of performance measures. However, this is the first time this model is tested. There is no other evidence to support that the implications of our model would be similar or applicable to other countries. Since our model is derived from the relevant literature review, we believe that it can apply to other economies to some extent, particularly developing economies similar to Thailand. Finally, the path model implies causality.

The results of this study contribute in many ways. It extends the existing research and findings on the mediating role of performance measurement on the relationship between two types of Porter's competitive strategy model, namely, differentiation strategy and cost leadership strategy, and firm performance. The findings challenge the assertion of the previous studies such as those of Govindarajan and Gupta (1985) and Ittner *et al.* (1997) that differentiation strategy tends to emphasize the use of non-financial measures.

However, our findings are consistent with others studies such as Spencer *et al.* (2009) which find that financial and non-financial measures act as mediating role on the relationship between differentiation strategy and firm performance. Moreover, this study provides useful insights into the significant role of performance measures as a tool for managers in implementing competitive strategies that can lead to improved firm performance. Managers and designers of performance measurement tools should pay particular attention to financial measures in implementing both types of Porter's competitive strategies.

### *6.1 Agenda for future research*

As Campbell-Hunt (2000) points out, although the paradigm of competitive strategy is now over two decades old, it has yet to prove its adequacy as a descriptive framework and move beyond its propositions about the performance consequences of different strategic designs. Further research on the relationship between strategy and firm performance, in a different context as well as the use of longitudinal data or carefully

experimental design research on the subject matter which show the causal relationships among these factors may also provide further insights.

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#### Further reading

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