

LINKAGES AMONG CORPORATE GOVERNANCE, MANAGEMENT ACCOUNTING PRACTICE AND ORGANIZATIONAL PERFORMANCE: EVIDENCE FROM A SOUTHEAST ASIAN COUNTRY

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Abstract

This paper applies a Difference-in-Difference method and Sobel's procedure to examine the complex relationships among corporate governance, management accounting practice and organizational performance, and finds out that the organizations with the majority of independent directors and the leadership separation most likely adopt management accounting practices and as a result achieve the most enhanced performance. In contrast, those with the minority of independent directors and the leadership combination least likely adopt management accounting practices, which leads to the least enhanced performance. Furthermore, it also offers evidence on the mediation of adopting management accounting practices in the effect of corporate governance on organizational performance. The findings can help business managers with building effective management accounting systems, which fit their firm's structures of corporate governance, so that they can achieve the possible best success.

Keywords: Difference-in-difference method, Corporate governance, Management accounting practice, Organizational performance

JEL Classification: C31, G34, L25, M41

1. Introduction

Corporate governance is mentioned as the structures for directing and managing organizations, which concerns the relationships among the organizational management, its board of directors, its shareholders and other stakeholders. Good corporate governance practices will help organizations to mitigate the conflicts of interests among stakeholders. They play a vital role in reducing agency costs due to the separation between ownership and management as well as the majority of independent directors in the board. This will hence create competitive advantages that lead to sustainable economic development as well as improved performance for the organizations (Cadbury 1992).

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Management accounting practices are generally regarded as important controlling tools in providing managers with financial and nonfinancial information to help them make better business decisions and maintain effective control over corporate resources. Johnson and Kaplan (1987) argue that organizations need management accounting practices to provide timely and accurate information in order to facilitate the control of costs, pricing decision, as well as the measurement and improvement of productivity. Several researchers have claimed that the new techniques have influenced the management accounting practice, and have turned its focus from a simple role of financial control to a complex role of creating value by better employing resources (Otley 1999; Fullerton and McWatters 2001; Haldma and Laats 2002).

Corporate governance practices are suggested as the determinants of adopting management accounting practices in business (Cromie et al. 1995; Salvato and Melin 2008; Christine et al. 2011). Nonetheless, to the best of our knowledge, previous research has not empirically investigated this causal relationship. This paper seeks to explore empirically the effect of corporate governance practices on the adoption of management accounting practices. In addition, good corporate governance practices and the high adoption level of management accounting practices can also result in enhanced organizational performance. Previous studies have examined these casual relationships (White and Ingrassia 1992; Beasley 1996; Ajibolade et al. 2010; Aman and Nguyen 2012). However, they have investigated the relationships of organizational performance with corporate governance practices as well as with the adoption of management accounting practices in separate research models of organizational performance. This paper finds it necessary to include both corporate governance practices and the adoption of management accounting practices into an integrated research model of organizational performance, and then simultaneously explore their influences on organizational performance. More importantly, we employ a *Difference-in-Difference* method to determine the effects of corporate governance practices on organizational performance as well as on the adoption of management accounting practices. The Difference-in-Difference method illustrates a quite clear comparison in differences among the four groups of firms.

Furthermore, grounded on the research on the mediation by Baron and Kenny (1986), we can see that the mediating role of adopting management accounting practices is important in the effect of corporate governance practices on organizational performance. Although the mediating effect is important, prior studies have not investigated this intervenient relationship. We think it essential to determine the role of adopting management accounting practices in interfering with the casual relationship between corporate governance practices and organizational performance, in which the casual relationship is weakened by the adoption of management accounting practices.

Business conditions are ever changing all over the world, especially in Southeast Asia, which is highly vulnerable to climate change, but plays an important role in working toward a global solution to sustainable development. In addition,

Southeast Asia is also one of the most dynamic and rapid economies. The business environment experiences more fluctuation there than in the developed ones. Given that Southeast Asia countries are more susceptible to fluctuation, it is more worthwhile to investigate the factors leading to improved performance in Southeast Asia based organizations. In particular, Vietnam is chosen as a case study for this research, because it is the most rapidly growing economy and a member of Southeast Asia as well as a member of the World Trade Organization (WTO). In addition, as the second most populous Southeast Asian country after Indonesia, Vietnam expects that its new status as a signatory member of the international trading system will make increasingly large contributions to the world economic growth. The dynamic and rapidly changing business environment enables organizations in Vietnam pay more attention to effective management tools in order to create competitive advantages and achieve better performance. However, the number of studies on such management tools as corporate governance or management accounting practices in Vietnam is still humble. It is important to carry out more research on these areas in Southeast Asia in general and in Vietnam in particular. As a result, in order to fill this gap, we conduct this paper for the organizations in Vietnam as a Southeast Asian member.

The paper offers statistical evidence that good corporate governance practices make important contributions to the higher level of adopting management accounting practices as well as to improved organizational performance. In particular, organizations, which have the board composed of the majority of independent directors and the separation of chairperson and CEO, most strongly affect the adoption of management accounting practices as well as organizational performance. In contrast, organizations, which have the board containing the minority of independent directors and the combination of chairman and CEO, most weakly impact on the adoption of management accounting practices as well as on organizational performance. In addition, this paper finds out that the organizations, which enjoy the higher level of adopting management accounting practices, will generate the higher organizational performance. The findings also statistically support that adopting management accounting practices in business will mediate the influence of corporate governance practices on organizational performance. In other words, when entered into the research model of organizational performance, the adoption of management accounting practices will lessen the direct impact of corporate governance practices on organizational performance.

This paper delivers some contributions. To the literature, it is the first to provide statistical evidence on the relationship between corporate governance practices on the adoption of management accounting practices. Moreover, it is also one of the first to statistically evidence that adopting management accounting practices plays the mediating role in the effect of corporate governance practices on organizational performance. These findings provide researchers with a clearer picture on corporate governance practices, management accounting practices and their relationships in Southeast Asian countries. To managers, this paper offers them with

better understanding of the relationships among corporate governance, management accounting practices and organizational performance as well as an insight on the mediating role of adopting management accounting practices in the association between corporate governance and organizational performance. Consequently, they can make better decisions on the choice of good corporate governance structures as well as appropriate management accounting practices in order to create competitive advantages over their competitors in a dynamic and rapidly changing business environment in Southeast Asia, and so enhance their organizational performance.

This paper continues with “theoretical framework”, which reviews the relevant literature and then arrives at hypotheses, followed by “methodology”. The methodology describes the way to measure the variables in the research model, how the data is analyzed, as well as the way to collect the data. The results and conclusions are presented in the two subsequent parts.

2. Theoretical Framework

This part tries to explain the complicated relationships of corporate governance practices with adopting management accounting practices as well as organizational performance. It is given that corporate governance practices impact on organizations’ decision on adopting management accounting practices in business, thereby leading to enhanced organizational performance. Grounded on the suggestions by Baron and Kenny (1986), it is argued that the characteristics of corporate governance can intervene in the relationship between the adoption of management accounting practices and organizational performance. These complex relationships will be discussed in more detail below.

2.1. Role of Corporate Governance Practices

Corporate governance is defined as ways of bringing the interests of investors and managers into line and ensuring that firms are run for the benefit of investors (Mayer 1997). Corporate governance practices are often concerned with the composition and function of organizational boards. In a study of Cadbury (1992), corporate governance instruments are regarded as a monitoring mechanism to minimize the agency costs due to the separation between ownership and management as well as the majority of independent directors in the board, and thereby improve organizational performance. The corporate governance practices are mentioned as the compositions of director boards as well as chief executive officer (CEO) duality that indicates the situation where the positions of chairperson and CEO fall in one person (Cassell 2012).

Management accounting practice is a management tool designed to provide reliable and essential financial or nonfinancial information that an organization needs to make business decisions. It is considered as a part of management practices, whose role is to offer useful information for management planning and control in order to enhance business effectiveness (Kaplan 1983). In addition to traditional

management accounting practices such as traditional budgeting, cost volume profit analysis and variance analysis, organizations should also relate their control tools to more advanced management practices (such as activity based costing, total quality management and balanced scorecard) that satisfy customers' requirements, so will gain competitive advantages (Lucas 1997).

Organizational performance is defined as the actual accumulated results of all the activities of an organization having achieved its goals. Within an organization there are often two primary outcomes analyzed, which are financial performance and nonfinancial performance. While nonfinancial performance is assessed on the items of innovativeness, quality, and customer satisfaction (Hudson et al. 2001; Kaplan and Norton 2007); financial performance is measured on the items of return on asset and on equity (Droge et al. 2003). Both these items of financial performance and nonfinancial performance are used as "organizational performance" in this paper.

A study by Salvato and Melin (2008) indicates that the empowerment of organizational management to independent directors with their outstanding qualifications, expertise and experience will lead to a high degree of formalization. The independent directors have to report their jobs to their shareholders; they hence need formal management tools to control effectively business activities (Cromie et al. 1995). In addition, Christine et al. (2011), in their research on "Corporate governance and management accounting in family firms", consider it essential to establish a separate unit in charge of management accounting, where formal management accounting tools should be employed for formalized management practices. They also imply that professionalization possessed by independent directors is related with the adoption of more sophisticated accounting management practices. Agrawal and Chadha (2005) find that the probability of restatement is significantly lower in companies whose boards or supervisory committees include outside independent financial experts, while higher in firms where CEOs hold the firm's major shares. Their findings are consistent with the argument that independent directors adopt formalized management practices, which create more faithful earnings reports. Further, Sam et al. (2012) elicit that the characteristics of CEOs play an important role in making decision on the adoption of computerized accounting practice. They suggest that there is a relationship between the adoption of computerized accounting practice and CEOs characteristic. Based on the above arguments, we can formulate the following hypothesis.

H1: Corporate governance practices impact on the adoption of management accounting practices.

It is implied by Nicholson and Kiel (2007) and Kaymak and Bektas (2008) that the boards, into which independent directors are appointed, will counter an agency problem because these boards can monitor any self-interested actions by managers. This may diminish agency costs, and therefore lead to improved firm performance. Furthermore, independent directors are selected by their outstanding qualifications, expertise and experience, so they may effectively affect business decisions, which eventually results in benefits to organizations. Firms with a person

holding positions of both chairperson and CEO can suffer an agency cost if this CEO pursues his own interest at a cost of other shareholders (White and Ingrassia 1992). In addition, Beasley (1996) and Bebenroth and Donghao (2007) offer an argument that independent directors play a unique monitoring role for the organization, which will minimize agency costs, and ultimately improve firm performance. A firm suffers worse performance, since its board cannot monitor and dismiss an underperforming CEO. Hence, the chairperson and CEO positions should belong to different individuals so that the power of control is decentralized and thereby agency costs are mitigated. In relation to corporate governance practices, Subramanian and Reddy (2012) ascertain that the disclosures of information about the corporate governance practices even also help the organizations win the confidence of stakeholders, which may eventually enhance organizational competitiveness. Grounded on the above arguments, we posit the hypothesis below.

H2: Good corporate governance practices likely improve organizational performance.

2.2. Role of Management Accounting Practices

The purpose of adopting management accounting practices is to facilitate decision-making by collecting, processing and communicating information that assists managers to plan, organize, manage and assess business processes, firm strategy as well as firm performance. In a research on management accounting, Ajibolade et al. (2010) confirm a positive relationship between the use of management accounting practices and firm performance. Wang and Huynh (2013) argue that the higher use of management accounting information will help managers to enhance their business performance. The role of accounting information practices in enhancing firm performance is also statistically supported by Williams and Seaman (2002) and by Yulius (2010). Furthermore, a number of studies have confirmed influence of e-commerce, information practice and information technology on firm performance (Choe 2003; Ismail 2007; Schulz et al. 2010). These instruments function similarly to management accounting practices in which they are all aimed to enhance efficiency of organizations. Therefore, based on the previous findings, we suggest the following hypothesis.

H3: The adoption of management accounting practices likely enhances organizational performance.

The causal relationships between variables in a research model are often more complex than a simple relationship between a predicting variable and a predicted variable. The association between two variables in a research model is often interfered with by a third variable. A procedure to examine the third variable intervention on the effect of the explanatory variable and the explained variable is introduced by Baron and Kenny (1986). Whether the interfering effect exists is determined by three conditions. First, an explanatory variable significantly impacts on a explained variable. Second, it also simultaneously imposes a statistically significant effect on a third variable. Third, the third variable, in turn, determines the

explained variable. If the three conditions are satisfied, then it can be proposed that the third or intermediary variable intervenes in the effect of the explanatory variable on the explained variable. Further, a technique suggested by Sobel (1982) is used to explore the intervening effect by examining the statistical significance for the indirect effect of the intermediary or mediating variable. A null hypothesis, that there is no the indirect influence of the mediating variable on the association between the explanatory variable and the explained variable, is statistically tested.

As above discussed, hypothesis 2 (H2) posits that good corporate governance practices can lead to improved organizational performance, while hypothesis 1 (H1) conjures that corporate governance practices are related with the adoption of management accounting practices. In addition, hypothesis 3 (H3) suggests that the adoption of management accounting practices likely results in enhanced organizational performance. Following the arguments by Baron and Kenny (1986), these hypotheses let us come to the hypothesis below.

H4: the adoption of management accounting practices can mediate the relationship between corporate governance practices and organizational performance.

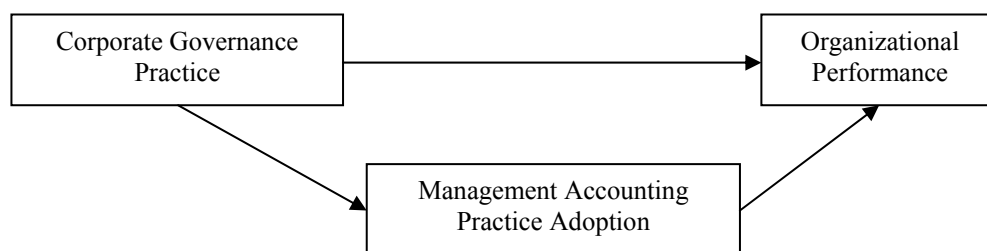


Fig. 1: Research Framework

The above-suggested hypotheses allow us to build a research framework as in Fig. 1, in which corporate governance practices are proposed to impact on organizational performance as well as on the adoption of management accounting practices that is in turn posited to affect organizational performance. The adoption of management accounting practices is also given to mediate the association between corporate governance practices and organizational performance

3. Methodology

3.1. Measurement of Variables

The measurement of *Corporate Governance Practices (CGP)* is adapted from (Cassell 2012), which refers to corporate governance as the proportion of independent directors (CGP1) as well as the duality or the separation of the positions of chairperson and CEO (CGP2). Both the variables are two dummy variables. The majority of independent directors is coded as 1 if the proportion of independent

directors is more than 50%, otherwise as 0. The separation of the positions of chairperson and CEO is coded as 1 if the positions of chairperson and CEO are separate, otherwise as 0.

A five-point scale is employed to measure *Adoption of Management Accounting Practices (MPA)*. The measurement ranges from 1. never considering, 2. decided not to introduce, 3. favored to introduce, 4. intended to introduce, to 5. under implementation of management accounting practices, adapted from Cinquini et al. (2008). The factor "MPA" consists of the following six dimensions that are traditional budgeting (MPA1), cost volume profit analysis (MPA2), activity based costing (MPA3), total quality management (MPA4), variance analysis (MPA5) and balanced scorecard (MPA6), which is suggested by the prior studies (Lucas 1997; Hyvonen 2005; Al-Omiri and Drury 2007).

Organizational Performance (OPF) is assessed by using a five-point scale from 1. no growth, 2. a little growth, 3. average growth, 4. fast growth to 5. very fast growth. A comparison to industry-average for each item was made. To help in making comparisons, the following items, which are returns on asset- OPF1, returns on equity- OPF2 (modified from Droge et al. 2003) as well as innovativeness- OPF3, quality in products or services- OPF4, and customer satisfaction- OPF5 (adapted from Hudson et al. 2001, and Kaplan and Norton 2007), are considered. Organizational performance is defined as the actual outcomes of financial and nonfinancial performances in an organization against the outcomes of its industry-average over the last year. Financial performance is based on the dimensions of return on asset as well as on equity; whereas nonfinancial performances is assessed on the items of innovativeness, quality in products or services, and customer satisfaction.

3.2. Statistical Analysis

This paper applies the Difference-in-Difference method to investigate the influences of corporate governance practices on the adoption of management accounting practices as well as on organizational performance. The Difference-in-Difference method is a research approach for examining the casual relationships, often based on comparing actual differences among four groups of the research model (Wooldridge 2009). In order words, it allows us to estimate the effect of treatment on different groups. This method measures the difference in a result after and before the treatment as well as the difference in a result between the treatment and control groups. Besides a group that is affected by the treatment, the three others are not influenced by the treatment. The group, which already received the treatment, is called "a post-treatment treated group". The three other groups are namely "the pre-treatment treated" that is treated before the treatment, "the pre-treatment non-treated" that has not been treated in the period prior to the treatment, and "the post-treatment non-treated" that is not treated in the current period. To evaluate the treatment influence, we could just compare the treated groups before and after the treatment. We employ a control group to determine and separate the

treatment effect. The Difference-in-Difference method is performed simply by taking the estimate of each group’s result, from the following regression model (1), before and after the treatment. The explanatory results are displayed in Table 1.

$$y_i = \beta_0 + \beta_1 \text{treat}_i + \beta_2 \text{after}_i + \beta_3 \text{treat}_i * \text{after}_i + \beta_4 X_i + e_i \tag{1}$$

Where: ‘treat’ obtains 1 if belonging to the treatment group, or 0 if belonging to the control group; whereas, ‘after’ gets 1 if after the treatment, or 0 if prior to the treatment.

Table 1: Difference-in-Difference Method and How It Corresponds to the Model

	Treatment Group	Control Group	Difference
Before	$\beta_0 + \beta_1$	β_0	β_1
After	$\beta_0 + \beta_1 + \beta_2 + \beta_3$	$\beta_0 + \beta_2$	$\beta_1 + \beta_3$
Difference	$\beta_2 + \beta_3$	β_2	β_3

In order to examine the effect of corporate governance practices on the adoption of management accounting practices and on organizational performance, a Difference-in-Difference procedure is utilized. Grounded on the research model, we can come to a estimated equation: $y_i = \beta_0 + \beta_1 \text{treat}_i + \beta_2 \text{after}_i + \beta_3 \text{treat}_i * \text{after}_i + \beta_4 X_i + e_i$. For organizational performance as a dependent variable, we denote ‘y’ as ‘organizational performance’, ‘treat’ as ‘the majority of independent directors’, ‘after’ as ‘the separation of the positions of chairman and CEO’, and ‘X’ as the adoption of management accounting practices. For the adoption of management accounting practices as an explained variable, we set ‘y’ as ‘the adoption of management accounting practices’, ‘treat’ as ‘the majority of independent directors’, ‘after’ as ‘the separation of the positions of chairman and CEO’. The majority of independent directors obtain the value of 1 if the proportion of independent directors exceeds 50%, otherwise it gets the value of zero. The separation of chairperson and CEO is coded as 1 if the positions of chairperson and CEO belong to one individual, otherwise it is zero.

Then, Sobel’s (1982) technique is used to evaluate the statistical significance for the mediating role of adopting management accounting practices in the effect of corporate governance practices on organizational performance. The method by Sobel (1982) is to test whether the mediating effect is statistically significant. The intervening influence is determined by investigating the statistical significance for the indirect effect of corporate governance practices on organizational performance. To explore the intervenient effect, the null hypothesis, which there is not a difference between the total effect and the direct effect (or an indirect effect is zero), is tested. The two sets of models, which are (1) “OPF = $a_1 + b_1 * \text{CGP1} + c_1 * \text{MPA}$ ” and “MPA = $a_2 + b_2 * \text{CGP1}$ ” as well as (2) “OPF = $a_1 + b_1 * \text{CGP2} + c_1 * \text{MPA}$ ” and “MPA = $a_2 + b_2 * \text{CGP2}$ ”, are applied to discover the intervenient impacts of adopting management accounting practices on the connection of organizational

performance with corporate governance practices (CGP1 and CGP2). We utilize a t-test to test whether the indirect effect of corporate governance practices on organizational performance is different from zero. A t-statistic ($t_{indirect}$) is a ratio of the indirect effect coefficient ($b_{indirect}$) to its standard error ($s_{b-indirect}$), in which $b_{indirect}$ is equal to $b_2 * c_1$, and $s_{b-indirect}$ is $\sqrt{c_1^2 s_{b_2}^2 + b_2^2 s_{c_1}^2}$. When the t-statistic is more than a critical value of P_{value} of 0.05, the null hypothesis is rejected, which indicates that the indirect effect is statistically different from zero or the mediating effect exists.

Prior to exploring the causal relationships and the mediating effects in the model, internal consistency for the two variables 'the adoption of management accounting practices' and 'organizational performance' is tested with reliability analysis to investigate the degree to which numerous items of the same measure agree with one another. The internal consistency for these two variables is tested, since they are composed of several items and we need their composite variables (by taking the averages of their own items). Subsequently, the impacts of multicollinearity among the independent variables in the estimated equations are also examined with the Pearson correlations. In order to satisfy the suggested limits by Nunnally (1978), item-total correlations had better exceed 0.5 and simultaneously the acceptable level of the Cronbach's alpha should be more than 0.7. The reliability analysis offers information about the associations among individual items in the scale. If the relationship is strong, the scale will yield consistent outcomes and so is reliable. Pearson correlations among the independent variables in the research models should not be more than 0.8, the acceptable highest level suggested by Kennedy (1992).

3.3. Data Selection

We collected the data from a sample of the 705 Vietnamese organizations listed publicly in the two only Vietnamese Stock Exchanges, in which 308 organizations are listed on Ho Chi Minh Stock Exchange and the other 397 organizations on Ha Noi Stock Exchange. We employed the initial solicitations to get responses from key informers with experience in corporate governance and management accounting. The questionnaire was completed with a manager involved in corporate governance and management accounting for each targeted organization. The questionnaires were sent to 475 organizations by email and in person interviewed with managers in 230 organizations. Of 475 questionnaires emailed, 243 were returned. However, 91 questionnaires did not deliver enough information as required. Hence, only 152 complete questionnaires are offered. Of the 230 interviews scheduled to be face-to-face performed, only 185 offered the good results for our questionnaire. Lastly, our sample is made up of 337 good replies with satisfactorily required information.

4. Empirical Results

Reliability analysis is the first procedure utilized in this paper to the reliability of the data. Table 2 exhibits the results of reliability analysis. Since, the item-total correlation of ‘MPA6- balanced scorecard’ is 0.348 (untabulated) that is lower than 0.5, the acceptable limit by Nunnally (1978), we remove it out from our data. As a result, the variables “the adoption of management accounting practices” only still includes five items, which are traditional budgeting (MPA1), cost volume profit analysis (MPA2), activity based costing (MPA3), total quality management (MPA4), variance analysis (MPA5).

Table 2: Results for Reliability Analysis

Item	Item-total Correlations	Cronbach's Alpha	N of Items
MPA1	0.739	0.884	5
MPA2	0.713		
MPA3	0.678		
MPA4	0.771		
MPA5	0.723		
OPF1	0.710	0.835	5
OPF2	0.610		
OPF3	0.628		
OPF4	0.625		
OPF5	0.611		

These five items is performed with the reliability analysis again. All of the five obtain their item-total correlations of over 0.5 (the lowest is 0.678 of MPA3 and the highest belongs to MPA4 at 0.771). The Cronbach's alpha achieves 0.884, which passes the lowest limit of 0.7, suggested by Nunnally (1978). Likewise, the five elements of organizational performance all get their item-total correlations of over 0.5 (the lowest is 0.610 of OPF2 and the highest is 0.710 of OPF1). In addition, the Cronbach's alpha reaches to 0.835, satisfying the lowest limit of 0.7. Overall, these results show that these ten items obtain sufficient internal reliability. Therefore, they are reasonably retained for further analyses.

Table 3: Correlations among the Variables

	CGP1	CGP2	CGP1*CGP2	MPA	OPF
CGP1	1.000	0.324***	0.728***	0.379***	0.463***
CGP2		1.000	0.710***	0.455***	0.504***
CGP1*C GP2			1.000	0.390***	0.544***
MPA				1.000	0.543***
OPF					1.000

Significance Level: ***= 0.01, Pearson: 2-tailed

The problem of multicollinearity is really serious, because its presence causes the ordinary least square estimators to be inaccurately estimated. Multicollinearity occurs in multiple regressions when two or more of the explanatory variables in the regression model are themselves highly correlated. Hence, we conduct the correlation procedure to examine the problem of multicollinearity. Before carrying out the correlation procedure, we create new composite variables for the two variables 'the adoption of management accounting practices' and 'organizational performance', by averaging items within the variables, because these two variables consist of five items per each. The two new variables created are MPA and OPF, which represent the adoption of management accounting practices (MPA) and organizational performance (OPF). Table 3 provides the results of correlations among the five variables used in analysis that are CGP1, CGP2, CGP1*CGP2, MPA and OPF. All of the correlations among the five variables are under 0.8, the highest value proposed by Kennedy (1992), which implies that the problem of multicollinearity does not exist in our analysis.

Table 4: Summary for Ordinary Least Square regression

Predicted Variable	Predictive Variable	Coefficients	Standard Error	<i>t-statistics</i>	<i>P_{value}</i>
OPF	CGP1	0.193	0.091	2.121	0.035
	CGP2	0.231	0.092	2.527	0.012
	CGP1*CGP2	0.242	0.118	2.055	0.041
	MPA	0.278	0.040	6.926	0.000
	C	2.701	0.146	18.491	0.000
R-squared		0.438			
F-statistic/ <i>P_{value}</i>		64.623/0.000			
MPA	CGP1	0.671	0.119	5.660	0.000
	CGP2	0.843	0.116	7.272	0.000
	CGP1*CGP2	-0.456	0.158	-2.877	0.004
	C	3.371	0.074	45.390	0.000
R-squared		0.285			
F-statistic/ <i>P_{value}</i>		44.227/0.000			

To examine the effects of corporate governance practices on the adoption of management accounting practices as well as on organizational performance, firstly we estimate the two models with OLS regression. The results are displayed in Table 4, which indicates that the adoption of management accounting practices, the majority of independent directors, the leadership separation of chairperson and CEO as well as the interactive term of 'the majority of independent directors' times 'the leadership separation of chairperson and CEO' put statistically significant effects on organizational performance. The influence of adopting management accounting practices on organizational performance achieves the significance level at 0.01, whereas the others obtain the significance at 0.05.

Table 4 also reveals that the adoption of management accounting practices in business is statistically affected by the majority of independent directors, the leadership separation of chairman and CEO as well as the interactive term of ‘the majority of independent directors’ times ‘the separation of the positions of chairman’ at the 0.01 significance level. Both the models achieve the goodness of fit at the 0.01 level with *F-statistics* of 64.623 and 44.227. The variables in the research explain 43.8% of the variations in organizational performance, while only explain 28.5% of the variation in the adoption of management accounting practices. These findings imply that while adopting management accounting practices is determined by corporate governance practices, these two kinds of practices both lead to better organizational performance.

The results from the OLS procedures statistically support our hypotheses 1, 2 and 3 (H1, H2 and H3). Nonetheless, they do not clearly explain how the items of ‘corporate governance practices’ separately influence organizational performance as well as the adoption of management accounting practices. For more clarity, we undertake the Difference-in-Difference method to analyze the differences in the effects of the items of ‘corporate governance practices’ on organizational performance and the adoption of management accounting practices. The Difference-in-Difference technique yields the outcomes in Tables 5 and 6, in which we set the group with the majority of independent directors as ‘treatment’ (the group with the minority of independent directors as ‘control’) and the group with the combination of leadership as ‘before’ (the group with the separation of leadership as ‘after’).

Table 5: Results of Difference-in-Difference (for Organizational Performance)

	Majority Group	Minority Group	Difference
Combination	$2.701 + 0.193$	2.701	0.193
Separation	$2.701 + 0.193 + 0.231 + 0.242$	$2.701 + 0.231$	$0.193 + 0.242$
Difference	$0.231 + 0.242$	0.231	0.242

The results provided in Table 5 point out that the organizations with the majority of independent directors and the separation of leadership make the improvement in performance by 0.473 (or $0.231 + 0.242$) units, compared to the organizations with the majority of independent directors and the combination of leadership. The former also produces more performance than the organizations with the minority of independent directors and the separation of leadership by an amount of 0.435 (or $0.193 + 0.242$) units. The performance generated by the organizations with the minority of independent directors and the combination of leadership is 0.193 units or 0.231 units lower than the organizations with the majority of independent directors and the combination of leadership or those with the minority of independent directors and the separation of leadership, respectively.

Table 6: Results of Difference-in-Difference (Management Accounting Practice Adoption)

	Majority Group	Minority Group	Difference
Combination	3.371 + 0.671	3.371	0.671
Separation	3.371 + 0.671 + 0.843 - 0.456	3.371 + 0.843	0.671 - 0.456
Difference	0.843 - 0.456	0.843	- 0.456

Table 6 offers evidence that the difference in the adoption level of management accounting practices between the organizations with the majority of independent directors and the separation of leadership and those with the majority of independent directors and the combination of leadership is 0.387 (or 0.843 - 0.456) units. The adoption level of management accounting practices in the former is bigger than the latter. In contrast, the adoption level of management accounting practices in the latter is larger than the group with the minority of independent directors and the combination of leadership by an amount of 0.671 units. While the organizations with the minority of independent directors and the separation of leadership create 0.843 units more performance than the group with the minority of independent directors and the combination of leadership; the former organizations enjoy less performance than those with the majority of independent directors and the separation of leadership by 0.215 or (0.671 - 0.456) units. Overall, the findings imply that the group with the majority of independent directors and the separation of leadership most strongly influence the adoption level of management accounting practices as well as organizational performance; whereas the group with the minority of independent directors and the combination of leadership imposes the smallest influences. The group with the minority of independent directors and the separation of leadership takes the second position in the effect, while the group with the majority of independent directors and the combination of leadership ranks the third.

Table 7: Regression Results for Mediation

Predicted Variable	Predictive Variable	Coefficients	Standard Error	<i>t-statistics</i>	<i>P_{value}</i>
OPF	CGP1	0.614	0.064	9.562	0.000
MPA	CGP1	0.609	0.081	7.498	0.000
OPF	CGP1	0.399	0.062	6.412	0.000
	MPA	0.354	0.039	9.153	0.000
OPF	CGP2	0.672	0.063	10.694	0.000
MPA	CGP2	0.734	0.078	9.356	0.000
OPF	CGP2	0.433	0.065	6.700	0.000
	MPA	0.326	0.040	8.152	0.000

In order to investigate the mediating influence of adopting management accounting practices on the association between corporate governance practices and

organizational performance, we utilize the suggestions by Baron and Kenny (1986) and the analyses introduced by Sobel (1982). The results obtained from these analyses are described in Tables 7 and 8. As seen in Table 7, the proportion of independent directors and the separation of leadership both statistically affect adopting management accounting practices as well as organizational performance at the 0.01 significance level; while organizational performance is improved by the adoption of management accounting practices at the 0.01 statistical significance level. Grounded on the arguments by Baron and Kenny (1986), these findings induce us to posit that the adoption of management accounting practices interferes with the association between corporate governance practices and organizational performance. Furthermore, Table 8 presents evidence on the statistical significance for these mediating effects. The relationships of organizational performance with the proportion of independent directors and the separation of leadership are mediated by the adoption of management accounting practices at the 0.01 statistical significance level. Therefore, our hypothesis 4 (H4), which states, “The adoption of management accounting practices intervenes in the relationship between corporate governance practices and organizational performance”, is statistically supported.

Table 8: Results for Sobel Tests

Mediation	Relationship	$t_{indirect}$	P_{value}
MPA	CGP1 and OPF	5.790	0.000
MPA	CGP2 and OPF	6.161	0.000

5. Conclusion

Previous research has investigated the relationships of organizational performance with corporate governance practices as well as the adoption of management accounting practices. Nevertheless, to the best of our knowledge, these relationships have been only examined in separate research models. This paper includes both corporate governance practices and the adoption of management accounting practices into an integrated model to study their effects on organizational performance. We are the first to apply the Difference-in-Difference technique to investigate the effects of corporate governance practices on the adoption of management accounting practices as well as on organizational performance. We also are the first to discuss and explore the mediating role of adopting management accounting practices in the effect of corporate governance practices on organizational performance. This mediating role is discussed and investigated according to the arguments by Baron and Kenny (1986) and the procedures proposed by Sobel (1982).

The findings reveal that good corporate governance practices in an organization will bring about improved organizational performance. Good corporate governance practices also induce managers more likely to adopt management

accounting practices in business. In addition, this paper discovers that organizations, which pay more attention to management accounting practices and adopt them at high levels, will enjoy more performance than the others will. Furthermore, the adoption level of management accounting practices is found to intervene in the association between corporate governance practices and organizational performance. When entered into the research model of organizational performance, the adoption of management accounting practices will reduce the direct effect of corporate governance practices on organizational performance.

To the literature, this paper provides statistical evidence that organizations, where the board contains the majority of independent directors and the positions of chairperson and CEO separately belong to two different people, most powerfully influence the adoption level of management accounting practices as well as organizational performance. Playing the most second affecting role pertains to those with the minority of independent directors and the separation of leadership. On the other hand, organizations, in which the board contains the minority of independent directors and the positions of chairperson and CEO belong to an individual, most weakly affect the adoption level of management accounting practices as well as organizational performance. The group with the majority of independent directors and the combination of leadership takes the third affecting role. Moreover, this paper is the first one to offers evidence on the mediating role of adopting management accounting practices in the influence of corporate governance practices on organizational performance. To organizational managers, this paper sheds an insight on the relationships among corporate governance practices, the adoption of management accounting practices and organizational performance in Southeast Asian based organizations. It also provides them with better understanding of the intervening effect of adopting management accounting practices in Southeast Asian based organizations on the relationship between corporate governance practices and organizational performance. These will allow the organizational managers to make better decisions on the choice of good corporate governance practices as well as management accounting practices in order to create competitive advantages in a dynamic and rapidly changing business environment in Southeast Asia, and so enhance their organizational performance.

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