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THE FIT OF COMPETITIVE STRATEGIES, MANAGEMENT ACCOUNTING SYSTEMS AND INFORMATION TECHNOLOGY SYSTEMS AND ITS EFFECT ON BUSINESS UNIT PERFORMANCES

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ABSTRACT

This study aims to provide empirical support for the arguments that the performance of Fit Low Cost business units is better than that of Misfit Low Cost business units and that the performance of Fit Differentiation business units is better than that of Misfit Differentiation business units. The Balanced Scorecard was used to measure the performance of business units, including their financial, customer, internal process, and learning/growth performance. A survey method was employed using a questionnaire. Non-parametric multivariate analysis of variance (Kruskal Wallis test) was used to analyze the data. The business unit of a large manufacturing company in East Java Province was used as the unit of analysis. We find that Fit Low Cost business units do not outperform Misfit Low Cost business units, while Fit Differentiation business units outperform Misfit Differentiation business units. Therefore, the results for Fit Differentiation and Fit Low Cost support and reject contingency theory, respectively. These findings strengthen contingency theory and promote its relevance in practice. Given their prevalence in actual practice, some of the current management accounting practices must be analyzed by academics and included in their classroom lecture materials.

Keywords: fit low cost and differentiation, misfit low cost and differentiation, performance, management accounting system, information technology

INTRODUCTION

The manufacturing sector of Indonesia has faced several challenges following the implementation of the ASEAN–China Free Trade Agreement in January 1, 2010, and this increasing amount of challenges in the ASEAN economic community has also been perceived by government and business practitioners (Kontan, July 7, 2014). To achieve competitive advantage, business organizations must not only operate efficiently but also develop their creativity and innovation (Prahalad, 2002). Therefore, companies must formulate appropriate business strategies (Jogiyanto, 2005). Information technology systems (ITS) have become a powerful, strategic weapon in the integration of business strategies, in the provision of better customer service (Hemmatfar, 2010; Issa–Salwe, Ahmed, Aloufi, and Kabir, 2010), and in competition with other businesses (Jogiyanto, 2005).

Chen (2010) and Luftman and Ben Zvi (2011) showed that the fit between the organizational factors of business and ITS is a major concern among academic and business practitioners. Accounting researchers emphasize the importance of increasing the role of management accounting system (MAS) to implement ITS-supported strategies (Phadongsitthi, 2003, Langfield–Smith, 2006). Given that accounting cannot be implemented without ITS (Dechow, Granlund, and Mouritsen, 2007, Bhimani, 2006), linking strategy to information technology and MAS in the framework of contingency theory is the present focus in the literature (Chenhall, 2007; Bhimani, 2006). The role of MAS in supporting the formulation, implementation, and changing of strategies also presents another concern (Langfield–Smith, 2007).

Figure 1 shows the fit among competitive strategy, MAS, and ITS and its relationship with performance according to Bhimani (2006).

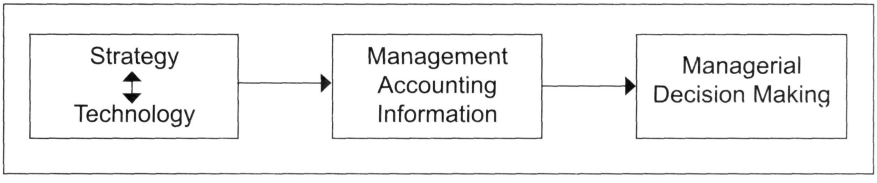

Figure 1: Linkage among Strategy, MAS, and ITS

The above figure shows that ITS supports the planning and implementation of competitive strategy, while MAS supports the alignment of competitive strategy with ITS. In other words, MAS acts as a "facilitator" of the alignment between competitive strategy and information technology systems. Therefore, "*the marriage of strategy and technology is joined by management accounting as a third partner.*" If this condition can be achieved, a fit is established between the strategic subsystem and the operational subsystems. This fit further improves the quality of decisions of the management, which subsequently drives the organization to achieve better performance.

Contingency theory assumes that the fit between competitive strategies and contextual variables helps the organization achieve a favorable performance and vice versa (Drazin and Van de Ven, 1985). A favorable fit indicates an enhanced performance, whereas a poor fit indicates a diminished performance (Chenhall, 2007). Organizations can achieve a better performance if they establish a fit among the subsystems, and thus this fit helps them to respond to changes in external variables (Burrell and Morgan, 1979). Contingency theory also asserts that the success of an organization is determined by its ability to adapt to environmental factors that are motivated by their need to survive (Burrel and Morgan, 1979). An organization is a series of linkages among subsystems, with each subsystem performing specific functions to achieve overall organizational success. If a combination of subsystems at the same level exists within an organization, then the organization achieves alignment (fit). Otherwise, the organization is misaligned (misfit).

The organizational subsystem in this study is a strategic subsystem composed of a competitive strategy (low cost and differentiation) and operational subsystems, such as MAS (traditional and strategic) and ITS (automation and enabler). MAS has a role in the processing of information into useful information for helping the management in making strategic decisions. ITS has a role in collecting, administering, storing, and integrating information that can be "called" at any time to be processed by MAS. With regard to the alignment of strategy with MAS, Chenhall (2007) stated the following:

> "...strategies characterized by conservatism... and cost leadership are more associated with formal, traditional MCS focused on cost

> control... Concerning product differentiation... are associated with broad scope MCS for planning purposes..."

With regard to linking ITS to MAS, Chenhall (2007) proposed the following:

> "The more technologies are characterized by standardized and automated processes, the more formal the controls including a reliance on process control and traditional budgets with less budgetary slack. The more technologies are characterized by high levels of task uncertainty, the more informal the controls including less reliance on standard operating procedure... clan control and use of broad scope MCS."

The role of ITS in organizations has evolved from improving efficiency through automation to being an enabler (Venkatraman, 1994). If the information technology concept of Chenhall (2007) is associated with that of Venkatraman (1994), the technologies that are characterized by standardized and automated processes represent technology as an automation, while those that are characterized by high levels of task uncertainty represent technology as an enabler.

MAS also acts as a liaison to the increasingly high interdependencies between strategy and ITS in order for the decisions of the management to match with the business realities of their organizations (Dechow, Granlund, and Mouritsen, 2007). On the basis of the development stages of organizations, Nishimura (2005) divided management accounting practices into drifting, traditional, mathematical, and integrated practices. MAS drifting, traditional, and mathematical processes can be categorized as traditional MAS, while integrated practices are categorized as strategic MAS, the scope of which is broader than that of the former (Chenhall, 2007).

Companies that implement the differentiation strategy must quickly respond to changes in consumer preferences and must actively monitor changes in the market. Strategic MAS provides information that is necessary in the implementation of the strategy. Necessary ITS is an enabler ITS that supports the practice of strategic MAS. Conversely, companies that implement the low cost strategy generally emphasize the timeliness and efficiency of their processes (Baines and Smith, 2003; Jermias and Ghani, 2004). These

companies require financial information that is useful for monitoring efficiency in the overall value chain and for enabling companies to set lower prices than their competitors. Traditional MAS provides information that emphasizes the financial aspect, while automation ITS supports the practice of traditional MAS.

Based on the above explanations and the concept of technology defined by Chenhall (2007) and Venkatraman (1994), contingency theory asserts that a fit company implements competitive strategies, practices MAS, and uses ITS in accordance with the following configurations:

1. Companies that implement the low-cost strategy require traditional MAS and automation ITS.
2. Companies that implement the differentiation strategy require strategic MAS and enabler ITS.

Therefore, a company is considered misfit if these configurations are not observed.

We emphasize the importance of a more complex performance measurement that can integrate the performance measures of various parts of an organization. The Balanced Scorecard is considered a representative measurement that integrates financial and non-financial measures in a framework that is explicitly linked to a strategy (Chenhall, 2006; Langfield–Smith, 2006: Langfield–Smith, 2007). MAS and ITS can be achieved under a fit competitive strategy, which indicates that the company can optimize its utilization of ITS and empowerment its human resources. In this regard, the company satisfies its employees and positively affects their learning/growth. In turn, operational improvements that can enhance the internal process performance of the company are attained. Improvements in internal processes will enhance customer performance, as favorable operational processes enhance the quality of products in accordance with the purchasing power of customers, thus improving customer service as well. The improved performance of customers also affects the improvements in financial performance.

We test whether fit business units outperform misfit business units according to contingency theory. We use the Balanced Scorecard to measure the

performance of business units, including their financial, customer, internal processes, and learning/growth performance. Fit is achieved when the application of strategy, the practice of MAS, and the use of ITS in a business unit comply with the following configurations:

1. Fit Low Cost: Business units that implement the low-cost strategy tend to practice traditional MAS and use automation ITS[1].
2. Fit Differentiation: Business units that implement the differentiation strategy tend to practice strategic MAS and use enabler ITS.

Misfit business units are divided into the following:

1. Misfit Low Cost: Business units that implement the low-cost strategy tend to practice strategic MAS and use automation ITS[2].
2. Misfit Differentiation: Business units that implement the differentiation strategy tend to practice traditional MAS and use enabler ITS.

The business unit is used as the unit of analysis because the strategy of a business unit has a higher tendency to be achieved than that of a corporation (Ireland, Covin, and Kuratko, 2009). Therefore, we test the implementation of business unit strategies that are associated with organizational factors (Chenhall, 2007). The main research questions are as follows:

1. Do Fit Low Cost business units outperform Misfit Low Cost business units?
2. Do Fit Differentiation business units outperform Misfit Differentiation business units?

This study is important because (1) research on the fit between strategy and its contextual variables remains limited, (2) many gaps are identified in the literature, and (3) scientific studies on business practices have become increasingly important because of the development of ITS.

1 According to Ireland et al. (2009:131–132), a business unit generally combines the low cost with the differentiation strategy; in this case, not a single strategy in practice can be applied perfectly. Therefore, we used the term "tendency." Following the same rationale, this term also applies to MAS practices and IT usage.

2 Misfit Low Cost includes four configurations, three possibilities of which are presented in Figure 6.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Basic Concepts of Contingency Theory

An organization is a series of linkages among several subsystems, including strategic control, operational, human, and managerial subsystems. The environmental and subsystem factors in contingency theory are considered analogous to a continuum line and are characterized by Burrell and Morgan (1979), as shown in Table 1.

Table 1: Characteristics of Environmental Factors and Organizational Subsystems

Environment	*Stable + Certain* ⟷ *Turbulent + Unpredictable*
Organizational Subsystems	
Strategic Control Subsystem	Operational Goal Setting ⟷ Creation of a Learning System
Operational Subsystem	Routine, Low-discretion Roles ⟷ Complex, High-discretion Roles
Human Subsystem	Economic Man ⟷ Self-actualizing Man
Managerial Subsystem	Bureaucratic ⟷ Organic

Contingency theory posits that organizational performance is a result of the successful aligning of organizational aspects with contingency variables, including environment, company size, strategy, and technology; the more advanced the technology is, the more managers face greater uncertainty, thus increasing the need for task predictability (Donaldson, 2001). The mutual interdependence of tasks is another factor of contingency (Donaldson, 2001). Hayes (1977) concluded that the interdependencies among sub-units could influence the performance of a business unit. Anderson and Lanen (1999) described the linkages between organizational factors and the environment from the contingency theory perspective.

Concept of Fit in Contingency Theory

Contingency theory has two views, namely, Cartesian and Configuration (Gerdin and Greve, 2004). According to the Cartesian view, "fit is combination of the levels of the contingency and structure that produce higher performance" (Donaldson, 2001). As shown in Figure 1, organizations with a structure that "matches" or "fits" the "context" of the factors are deemed more effective than those with a structure that does not have the same fit (Donaldson, 2001).

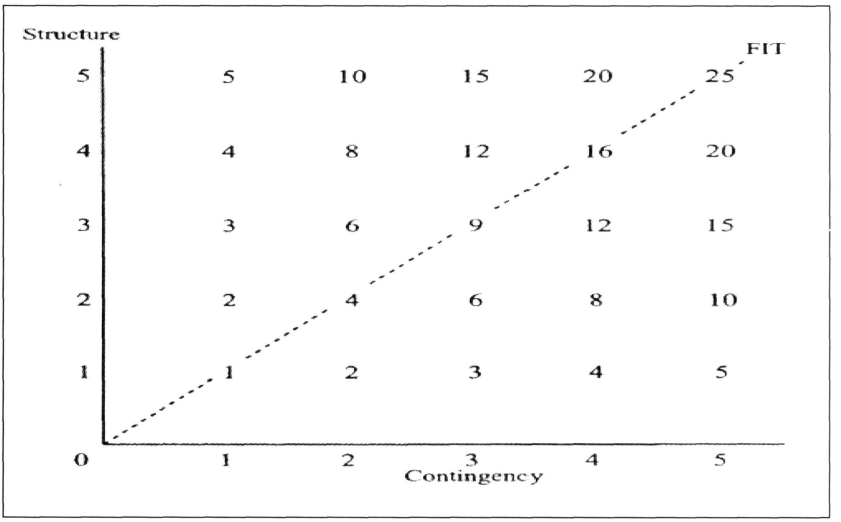

Figure 1: Level of Fit and Performance

Figure 1 shows that a fit is achieved if the contingency factors and the structure of a company are at the same "level" (Donaldson, 2001). The position outside the fit line is the misfit, and a longer distance from the fit line will lead to a lower performance (Donaldson, 2001). Burrel and Morgan (1979) explained the concept of fit among sub-systems within an organization using "the congruency hypothesis" (Figure 2).

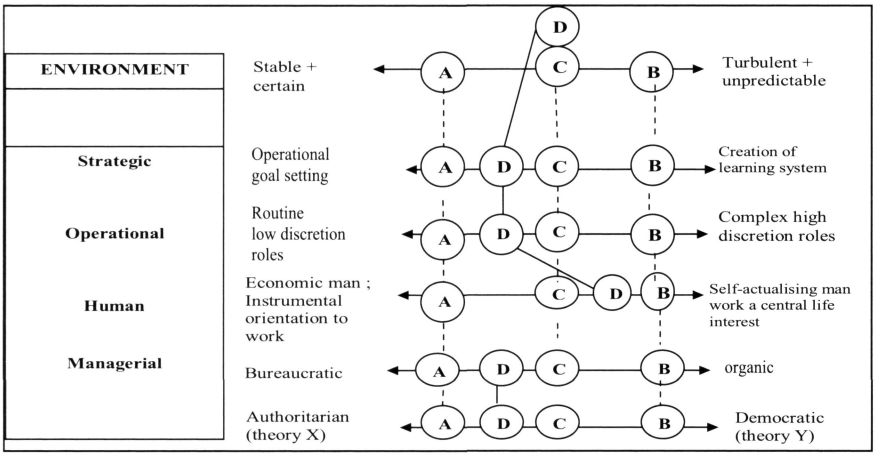

Figure 2: Fit Model in Contingency Theory

The fit model presumes that "...a necessary condition for the effectiveness of an organization in meeting the demands of its environment is that the relationships between subsystem characteristics be congruent" (Burrell and Morgan, 1979). Therefore, configurations A, B, and C are fit, whereas configuration D is misfit.

Competitive Strategy

According to Chenhall (2007), the most important aspects of contingency theory are the important role of competitive strategy and its relationship with technology and MAS. Companies must achieve the fit of these variables to survive. A competitive strategy is an offensive or defensive action for creating a safe position (defendable) in the industry, for winning the competition, and for gaining higher profits (Porter, 1993). Companies usually employ two strategies, namely, differentiation and low cost.

Management Accounting System

Otley (1980) argued that the fit between contingency variables and management control systems influences the effectiveness of the organization. According to Nishimura (2005), companies need a MAS to improve their efficiency and support their implementation of strategies. Management accounting techniques include the following:

1. Traditional Management Accounting Practice: *ratio analysis, standard costing, budgetary control, variance analysis, cost–volume–profit analysis, inventory modeling, opportunity cost accounting, and performance evaluation.*

2. Integrated or Strategic Management Accounting Practice: *activity-based costing, balanced scorecard, back-flush accounting, target costing, value chain analysis, life cycle costing, and quality costing system.*

Information Technology System

IT has a major role in the efficiency, effectiveness, communication, collaboration, and competition of organizations (Jogiyanto, 2003; Said, Hui, Taylor and Othman 2009). IT also serves a management role at different levels of an organization, including operational level management, middle management (tactical), and upper management (strategic) (Turban and Volonino, 2010). According to Venkatraman (1994), the role of IT in organizations has evolved from improving efficiency through automation to creating and maintaining flexibility in the network at the organization level and between organizations (Figure 3). The key factors of strategic IT include decision support systems, enterprise resource planning (ERP), and database systems with "data mining" (Hemmatsfar, 2010).

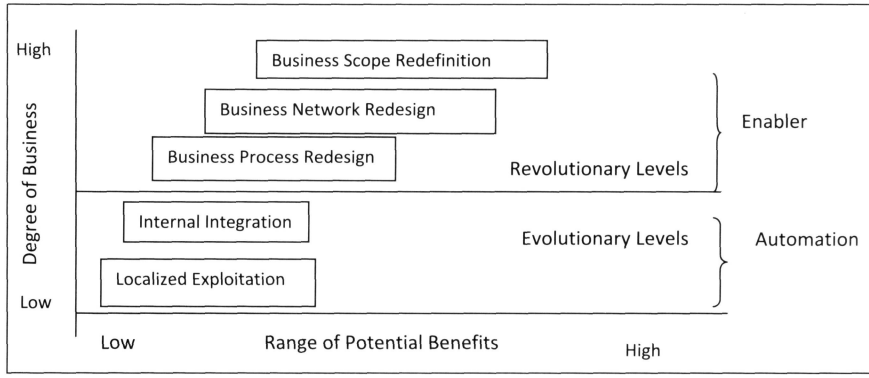

Figure 3: Level of Information Technology Transformation

Performance

Recent contingency studies have used performance as a variable that is directed toward financial and non-financial measurements that utilize the Balanced Scorecard concept (Langfield–Smith, 2007). Balanced Scorecard is considered appropriate in contingency literature because this concept is modified accounting information directly linked to the achievement of a strategy (Langfield–Smith, 2007). The Balanced Scorecard concept contains four performance items, namely, financial, customer, internal processes, and learning/growth (Kaplan and Norton, 1996).

Relationship between the Fit of an Organizational Subsystem and the Contextual Variable with Performance

Research on the relationship between fit of competitive strategy and performance-associated IT (i.e., Atkins, 1994, Jouirow and Kalika, 2004, and Tavakolian, 1999) concludes that fit supports the achievement of a better performance. However, Luftman and Brier (1997), Luftman and Brier (1999), Rathman, Johnson, and Wen (2005), and Duh, Chow, and Chen (2006) concluded that fit is unrelated to performance. Coleman and Papp (2006) found several factors that hinder the achievement of fit. Luftman and Tal Ben-Zvi (2011) identified the five main problems for managers, among which the fit between ITS and the processes within a business organization was given the highest priority.

Unfortunately, some studies have also established a negative relationship between ITS and MAS. For instance, Hoque (2004), Kholeif, Abdel Kader, and Scherer (2008), and Morton and Hu (2008) concluded that the using an ERP that is not fit with organizational variables would lead to a decreased performance. Therefore, Dechow, Granlund, and Mouritsen (2007: 634) stated the following:

> "...in sum, the linkages between information technology, management accounting and management control are thus often uncertain, even surprising, and therefore unidirectional assumptions in this regard may prove to be misleading, therefore the research needed to develop insights into this relationship is significant."

Some researchers have also investigated misfit to prove its effect on organizational performance (i.e., Grescow, 1989, Burton, Lauridsen, and Obel, 2002, and Jermias and Gani, 2011). They find that the relationship between fit and performance generally supports the conclusion of contingency theory, in which fit positively affects organizational performance. However, studies on the effects of misfit on performance have yielded inconsistent findings (Jermias and Gani, 2011). Based on the theoretical explanation, the substance of fit in this study is presented in Figure 4.

Organizational Subsystem	
Strategic Operational : Man.Accounting System Information Tech. System	*Low Cost* ⟷ Differentiation Traditional ⟷ Strategic Automation ⟷ Enabler

Figure 4: Substance of Fit

Based on the above theoretical explanation, we propose the following:

Hypothesis 1

H1A: Fit Low Cost business units have a better financial performance than Misfit Low Cost business units.

H1B: Fit Low Cost business units have a better customer performance than Misfit Low Cost business units.

H1C: Fit Low Cost business units have a better internal process performance than Misfit Low Cost business units.

H1D: Fit Low Cost business units have a better learning/growth performance than Misfit Low Cost business units.

Hypothesis 2

H2A: Fit Differentiation business units have a better financial performance than Misfit Differentiation business units.

H2B: Fit Differentiation business units have a better customer performance than Misfit Differentiation business units.

H2C: Fit Differentiation business units have a better internal process performance than Misfit Differentiation business units.

H2D: Fit Differentiation business units have a better learning/growth performance than Misfit Differentiation business units.

RESEARCH METHOD

Business units are grouped into the following:

1. The Fit Group consists of the following:
   a) Fit Low Cost: business units that implement the low-cost strategy, practice traditional MAS, and use automation ITS.
   b) Fit Differentiation: business units that implement the differentiation strategy, practice strategic MAS, and use enabler ITS. The configuration of these fit groups is presented in Figure 5.

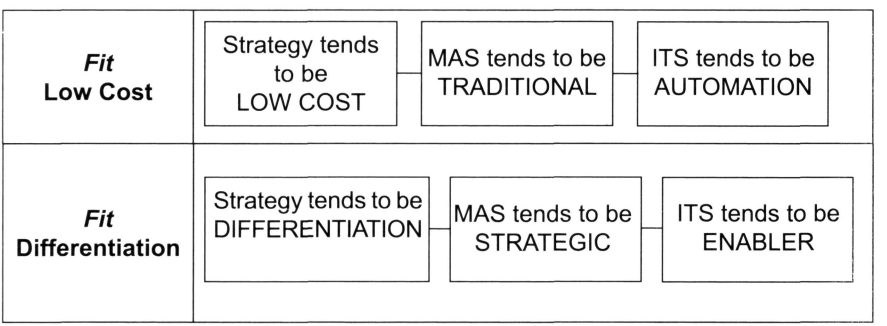

Figure 5: Fit Configuration

2. The Misfit Group consists of Misfit Low Cost and Misfit Differentiation (Figure 6).

Population, Sample, and Sample Size

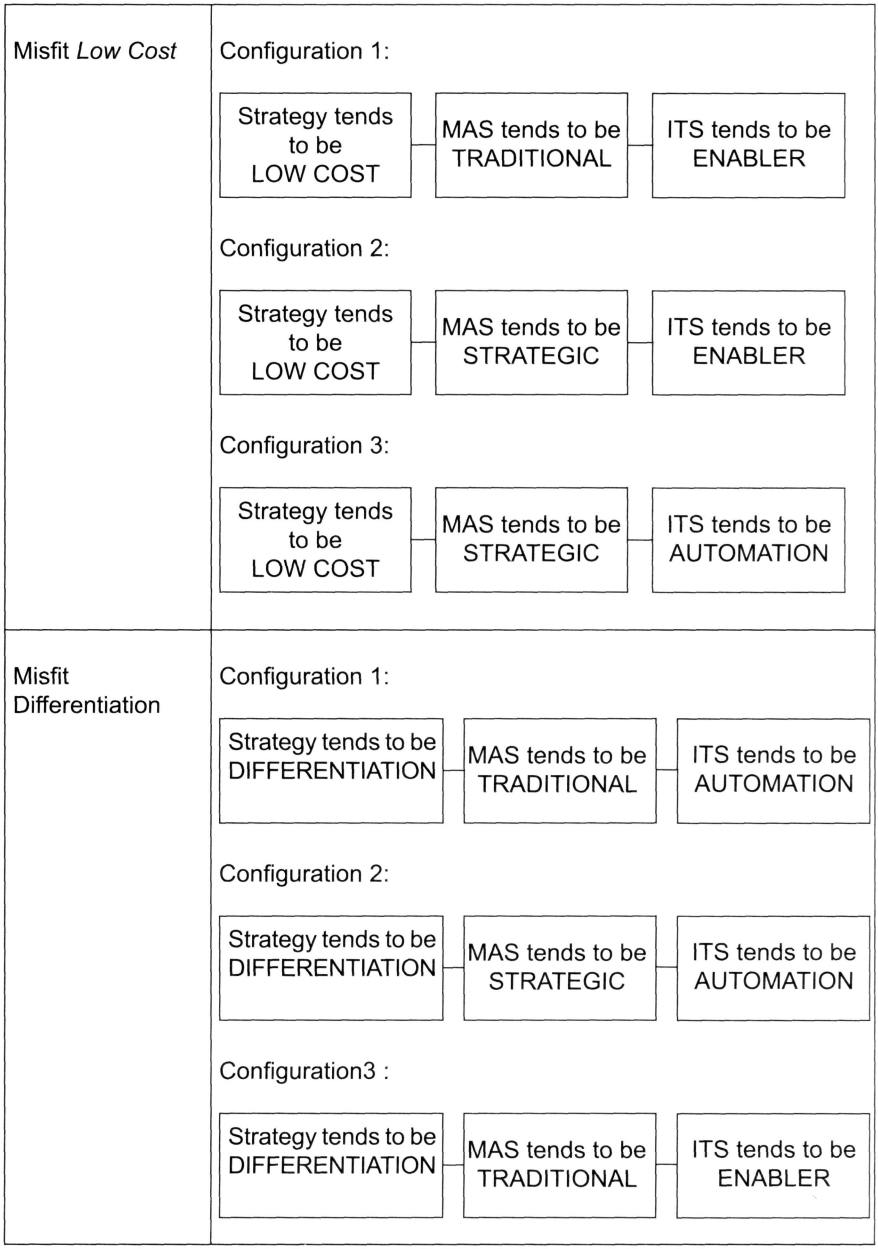

Figure 6: Configuration of Misfit

The business unit of a large manufacturing company in East Java Province was used as the unit of analysis in this study. A large manufacturing company employs more than 100 people (www.bps.go.id). The sample size was determined following the approach of Yamane (1973), which was cited by Ferdinand (2006) as follows:

$$n = \frac{N}{1+ND^2},$$

where

n = number of samples
N = population size: 487 companies (Ministry of Industry, East Java, 2010)
D = specified precision or tolerable percentage of inaccuracy

If D is 10%, then the sample size is 83. This sample size is in accordance with the suggestions of Hair, Black, Babin, and Anderson (2010), who argued that when using multivariate analysis of variance (MANOVA), the observation for each group should require 10 to 20 samples. Given that four groups were analyzed in this study, the required number of samples was 80.

The managers, chief financial officers (Seaman and Williams, 2006), or internal auditors of business units were selected as the respondents. Internal auditors were selected in consideration of their capability in managing both financial and non-financial information.

Classification of Variables

The variables in this study include the following:

1. Independent variable (X): fit of competitive strategy, MAS, and ITS. Fit is divided into two groups, namely, Fit Low Cost and Fit Differentiation, as shown in Figure 6. Misfit is divided into two groups, namely, Misfit Low Cost and Misfit Differentiation, as shown in Figures 5 and 6.

2. Dependent variable (Y): Performance, which includes financial, customer, internal process, and learning/growth performance.

Measurement of Variables

1. Measurement of variable X: Fit of competitive strategy, MAS, and ITS, which are measured as follows:
   a) The respondents were asked to answer questions about the fit elements, including the application of a competitive strategy, practice of MAS, and use of ITS, as shown in Table 2.

Table 2: Elements of Fit Measurement

Element of Fit	Measurement Model	Scale
Application of competitive strategy: Differentiation and Low cost	Never Implemented — Intensively Implemented 1 1 1 1 1	Interval
Practice of MAS: Traditional and strategic	Never Practiced — Intensively Practiced 1 1 1 1 1	Interval
Use of ITS	Never Used — Intensively Used 1 1 1 1 1	Interval

To obtain an equation that could be used to group the respondents, the opposite scale was used at the time of tabulation as follows:

i. Differentiation strategy: Never applied (1) to intensively applied (5)
ii. Low cost strategy: Never applied (5) to intensively applied (1)
iii. Strategic MAS: Never practiced (1) to intensively practiced (5)
iv. Traditional MAS: Never practiced (5) to intensively practiced (1)
v. Enabler ITS: Never used (1) to intensively used (5)
vi. Automation ITS: Never used (5) to intensively used (1)

b) The responses were tabulated before the business unit strategy (i.e., low cost or differentiation), MAS (i.e., traditional or strategic), and ITS (i.e., automation or enabler) were identified using the following procedure (Jermias and Gani, 2005):

   i. Competitive strategy: If the average score of the responses exceeds the mean, the business unit tends to apply the differentiation strategy. Conversely, if the average score is lower than the mean, the business unit tends to apply the low-cost strategy.
   ii. The same procedure was performed to separate business units that practiced strategic and traditional MAS as well as those that used the automation and enabler ITS.

c) We replicated steps 1 and 2 to classify the respondents into four groups, namely, Fit Low Cost, Fit Differentiation, Misfit Low Cost, and Misfit Differentiation.

2. Measurements for performance (Y). Performance is measured according to the perspectives of respondents toward financial, customer, internal processes, and learning/growth performance. Specifically, the respondents were asked to write down their evaluations of performance on the available column, as shown in Table 3.

Table 3: Measurement of Performance

Element of performance	Measurement	Scale
Financial	If last year: • The target reached 100%, the value would be 100. • The target reached 50%, the value would be 50. • The target reached 0%, the value would be 0.	Ratio
Customer, Internal Process, and Learning/ Growth	If last year: • The actual value was equal to the plan, the value would be 100. • The actual value was 50% of the plan, the value would be 50. • The actual value was 0% of the plan, the value would be 0.	Ratio

Financial performance was measured using the "target" because this aspect is generally measured on the basis of certain financial targets. For the customer, the internal process and learning/growth performances were measured using the "plan" because these elements were "planned" instead of "targeted" in the annual work plan.

Research Instrument

The questionnaire included the following questions:

1. Application of competitive strategy (10 questions). The questions for differentiation strategy were about the policies that were directed toward creating unique products and services for consumers. The questions for low-cost strategy were related to policies directed at achieving efficiency and low pricing.

2. Practice of MAS (10 questions). The questions for strategic MAS considered the ABC system, target costing, cost of quality, life cycle costing, and balanced scorecard. The questions for traditional MAS considered ratio analysis, variance analysis, standard cost systems, budgeting, BEP, and EOQ analysis.

3. Use of ITS (9 questions). The questions for enabler ITS (questions 1 to 5) included Internet usage, database, e-commerce, ERP, and Internet-based Electronic Data Interchange (EDI). The questions for automation ITS (questions 6 to 9) included the use of spreadsheets and software for accounting, telephone-based EDI, and use of Internet for communicating with suppliers.

   The questions were mostly adapted from previous research because their validity and reliability had already been tested. The questions for competitive strategy were taken from Jermias and Gani (2004, 2005), Baines and Smith (2003), and Kaplan and Norton (1996). The questions for MAS were taken from Nishimura (2005) and Jermias and Gani (2005). The questions for ITS were taken from Jogiyanto (2003) and modified from Duh, Chow, and Chen (2006) and Hemmatfar (2010). To distinguish the level of automation and enabler ITS, the concept of Venkatraman (1994) was used.

4. Performance (12 questions). All 12 questions pertained to the Balanced Scorecard concept, with each performance having three questions.

Data Analysis

The data were processed as follows: (1) check the completeness of data, (2) tabulate the data, and (3) group the business units into Fit Low Cost, Fit Differentiation, Misfit Low Cost, and Misfit Differentiation.

Hypothesis Testing

Parametric MANOVA was used to test the hypotheses. The conclusions were based on sig value. If the sig value was smaller than α (0.05), the four groups would differ in terms of their performance. Following Gudono (2011), the assumptions were tested according to normality and homogeneity. If the assumptions were not satisfied, then non-parametric MANOVA (the Kruskal–Wallis test) was performed simultaneously and partially.

RESULTS

Validity and Reliability of the Instrument

The data were processed using SPSS. The Pearson correlation values were greater than 0.5, and a significance value of 0.000 was used in determining the validity of the questionnaire items (Sekaran, 2003). The Cronbach's alpha values for all elements of the fit were greater than 0.7, which indicated the reliability of all questionnaire items (Hair, Black, Babin, and Anderson, 2010) (Appendix 1).

Descriptive Analysis

As shown in Appendix 1, "On-Time delivery" obtained the highest mean for the application of differentiation strategy, and "Efficient Use of Assets" obtained the highest mean for the application of low cost strategy. Therefore, these policies were considered the most important for the two strategies. The use of product life cycle cost report obtained the highest mean for strategic MAS, and the use of budget obtained the highest mean for traditional MAS. The distribution of data for the use of budget was 3–5, which indicated that all business units used their budget from moderately (3) to very intensive (5).

The use of data warehouse obtained the highest mean for enabler ITS, and the use of office programs obtained the highest mean for automation ITS. "Sales growth" obtained the highest mean for financial performance, and "retain customer" obtained the highest mean for customer performance. "Timeliness of delivery" obtained the highest mean for internal processes, and "employee benefits" obtained the highest mean for learning/growth.

Business Unit Classification Based on the Configuration of Fit

We obtained four groups of fit, namely, Fit Low Cost (17 business units), Fit Differentiation (20 business units), Misfit Low Cost (21 business units), and Misfit Differentiation (32 business units).

Parametric MANOVA Results

Parametric MANOVA was used to achieve the research objectives. The results are presented below.

1. The descriptive statistics is presented in Table 4.

Table 4: Descriptive Statistics for the Parametric MANOVA

Group	Performances							
	Financial		Customer		Internal Process		Learning/ Growth	
	Mean	Std. Dev.	Mean	Std Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Fit Low Cost	251,76	39,64	228,24	39,17	222,65	45,69	232,94	54,83
Misfit Low Cost	250,24	47,37	224,29	47,10	247,62	43,72	248,33	48,54
Fit Differentiation	261,25	47,90	259,75	49,59	260,75	50,27	267,25	37,36
Misfit Differentiation	240,16	32,14	241,25	36,52	240,16	38,72	240,16	43,96

The Fit Differentiation group ranked the highest for the entire performance. The financial and customer performances of the Fit Low Cost group were higher than those of the Misfit Low Cost group. However, the opposite results were obtained for internal processes

and learning/growth. Therefore, the results for the Fit Differentiation group supported contingency theory, and those for the Low Cost group were not empirically consistent.

2. To satisfy the assumption in MANOVA using SPSS, the p-value in Box's M must be greater than 0.05 (Hair, Black, Babin, and Anderson, 2010). The sig value was 0.000 < 0.05 (see Appendix 3), which indicated that the variance–covariance of the four groups was not homogeneous, and the assumption of MANOVA did not hold. Other indicators can be seen from Levene's test. The sig value for financial performance was 0.016 < 0.05, which indicated that the variance–covariance was not homogeneous, and the assumptions of MANOVA did not hold. Therefore, using parametric MANOVA was inappropriate.

Non-Parametric MANOVA Test

Based on the above explanations, the non-parametric statistical procedures had to be used and tested by expanding the Kruskal–Wallis test for multivariate data (Yanti, 2010; Katz and Mc Sweeney, 1980, May and Johnson, 1997). The Kruskal–Wallis test results are shown in Table 5.

Simultaneous Kruskal–Wallis Test Results

The following hypotheses were formulated in this test:

Ho : F1 (X) = F2 (X) = ... = Fk (X): all k populations have an identical distribution or no differences are observed between the sample groups.

H1 : Fk (X) ≠ F1 (X) for some k ≠ 1: a difference is observed between the sample groups.

Criteria: Follow the chi-square $\chi 2$ distribution and reject Ho if KW ≥ $\chi 2$ with k-1 degrees of freedom at the sig α level. By entering formulas in Minitab, the value of KW was 7.81473 > χ^2_3 (0.95) (see Appendix 4). Therefore, Ho is rejected, and a difference exists between groups (see Appendix 3).

Table 5: Mean Rank for the Fit and Misfit Groups

Group	Mean Rank (to be rounded)			
	Financial	Customer	Internal Process	Learning/ Growth
Fit Differentiation	32	33	32	32
Misfit Differentiation	23	23	23	23
Fit Low Cost	19	20	16	18
Misfit Low Cost	20	19	22	21

The Fit Differentiation group had a higher mean rank than the Misfit Differentiation group, which indicated that the former had higher financial, customer, internal processes, and learning/growth performances than the latter. However, the business units in the Fit Low Cost group had lower financial, internal processes, and learning/growth performances than those in the Misfit Low Cost group. The customer performance of the Fit Low Cost group slightly differed from that of the Misfit Low Cost group, inconsistent with contingency theory.

The hypotheses test results are presented in Table 6, which shows that Ho was accepted. Therefore, the performance of the Fit Low Cost group did not differ from that of the Misfit Low Cost group as reflected by the Asymp. Sig values, which were all greater than 0.05. Ho was also rejected for the Fit Differentiation group, which indicated that the whole hypothesis could be accepted because all Asymp.Sig values were smaller than 0.05.

Table 6: Hypothesis Test Results

No	Group	Hypotheses	Performances	Asymp.Sig
1	Fit Low Cost and Misfit Low Cost	H1.A	Financial	0,940
		H1.B	Customer	0,918
		H1.C	Internal Process	0,139
		H1.D	Learning/Growth	0,430
2	Fit Differentiation and Misfit Differentiation	H2.A	Financial	0,028
		H2.B	Customer	0,019
		H2.C	Internal Process	0,040
		H2.D	Learning/Growth	0,028

These results show that the performance of business units in the Fit Low Cost group was lower than that of those in the Misfit Low Cost group, thus contradicting contingency theory. By contrast, the performance of business units in the Fit Differentiation group was higher than that of business units in the Misfit Differentiation group, thus supporting contingency theory.

DISCUSSION AND RESEARCH IMPLICATIONS

The results support the conclusions of Hyvonen (2007) but slightly differ from those of Hyvonen (2008), who argues that the use of advanced IT is not related to the implementation of strategy. The results for the Fit Differentiation group also prove the propositions of Chenhall (2007), who suggests that companies that manufacture "differentiated" products must flexibly respond to the needs and desires of their consumers. These conditions have led to increased "interdependencies" along the value chain that involves suppliers, customers, and other parts of a company, such as marketing, production, purchasing, and research and development. Such interdependence will increase the need for timely and accurate management accounting information (Gerdin, 2005; Abernethy, Bouwens, and Van Lent, 2004). Therefore, the demand for rapid and flexible ITS also increases (Chenhall, 2007).

The internal processes and learning/growth performances of Fit Low Cost business units are lower than those of the other groups. This result may be interpreted as follows:

1. According to Kaplan and Norton (2004), a business unit that implements a low-cost strategy is generally a follower instead of a leader. To achieve efficiency along the value chain in all parts of the company, an excellent process internal management is crucial in the internal process of a business unit that implements a low-cost strategy (Kaplan and Norton, 2004). Therefore, the innovation process is only performed to ensure the achievement of efficiency. A business unit that implements the low-cost strategy requires an ITS that is useful for improving quality, production processes, and productivity (Kaplan and Norton, 2004). Fit Low Cost business units have a low internal processes performance because their management is unimportant in managing internal processes. In addition, their management cannot

align MAS with ITS to achieve innovation, efficiency, and timely product delivery.

2. According to Kaplan and Norton (2006), learning/growth performance is associated with management success to harmonize their strategies with their employee goals, training programs, and incentive programs. Given that business units that implement a low-cost strategy are followers instead of leaders, their management does not feel the need to improve the knowledge and skills of their employees through training and ITS use.

3. According to Jogiyanto (2005), strong leadership factors have an important role in harmonizing existing subsystems. The top management of business units in the Misfit Low Cost group can manage the interdependencies of their subsystems. Therefore, despite its misfit configuration, it can still achieve a high performance. This conclusion can be attributed to the theory of Hofstede (1984), as cited in Paramita (1989), about the management culture in Indonesia, especially with regard to the dimensions of high power distance and moderate uncertainty avoidance. Based on this theory, the leadership styles applied in managing Indonesian companies are paternalistic, autocratic, and tend to avoid uncertainty (Paramita, 1989; Sudarwan and Fogarty, 1996). As a result, the manager formalizes the organization by implementing various policies and regulations and by using strict standards to ensure a high performance. Therefore, a higher financial, customer, internal processes, and learning/growth performance can still be achieved without harmonizing the subsystem.

CONCLUSION AND RESEARCH LIMITATIONS

The business units in the Fit Low Cost group do not outperform those in the Misfit Low Cost group. On the contrary, the business units in the Fit Differentiation group outperform those in the Misfit Differentiation group. The results for the Fit Differentiation group support contingency theory, which posits that business units with a fit between strategic and operational subsystems can outperform misfit business units.

The following limitations of this research can be addressed in future research:

1. With regard to the implementation of a competitive strategy, this study ignores the implementation stage that involves growth, sustenance, and harvest.

2. With regard to ITS use, this study does not consider whether IT is used in a centralized or decentralized system.

These limitations must be considered because they may affect the fit of business units.

REFERENCES

Abernethy, M. A., Bouwens, J., & Van Lent, L. (2004). Determinants of Control System Design in Divisionalized Firms, *The Accounting Review*, *79*(3), 545-570.

Anderson, S. W., & Lanen, W. (1999). Economic Transition, Strategy and the Evolution of Management Accounting Practices: the Case of India, *Accounting, Organizations and Society*, *24*, 379-412.

Atkins, M. H. (1994). Information Technology and Information Systems Perspectives on Business Strategies, *Journal of Strategic Information Systems*, *3*(2), 123-135.

Baines, A., & Langfield-Smith, K. (2003). Antecedents to Management Accounting Change: a Structural Equation Approach, *Accounting Organizations and Society*, *28*, 675–698.

Bhimani, A. (2006). Management Accounting and Digitization, in *Contemporary Issues in Management Accounting*, Edited by Alnoor Bhimani, New York, USA, Oxford University Press, pp.70-91.

Burrel, G. & Gareth, M. (1979). *Sociological Paradigms and Organisational Analysis,* Vermont, USA, Ashgate Publishing Company.

Burton, R. M., Lauridsen, J. & Obel, B. (2002). Return on Assets Loss from Situational and Contingency Misfits, *Management Science*, *48*(11), 1461-1485.

Chenhall, R. H. (2007) Theorising Contingencies in Management Control Systems Research In *Handbook of Management Accounting Research*, edited by Christopher S Chapman, Anthony G Hopwood, and Michael D.Shields Volume 1, Oxford, UK, Elsevier, pp.163-205.

Chenhall, R. H, (2006). The Contingent Design of Performance Measures, In *Contemporary Issues in Management Accounting*, Edited by Alnoor Bhimani, New York, USA, Oxford University Press Inc, pp.92-116.

Chenhall, R. H. & Langfield-Smith, K. (1998). The Relationship between Strategic Priorities, Management Techniques and Management Accounting: An Empirical Investigation Using a Systems Approach, *Accounting, Organizations and Society*, *23*(3), 243-264.

Chen, L. (2010). Business–IT Alignment Maturity of Companies in China, *Information & Management*, *47*(1), 9–16.

Dechow, N., Granlund, M., & Mouritsen, J. (2007). Management Control of the Complex Organization: Relationships between Management Accounting and Information Technology. In C. Chapman, A. Hopwood, & M. Shields (Eds.), *Handbook in Management Accounting Research*. (Vol. 2, pp. 625-640). Amsterdam: Pergamon Press.

Donaldson, L. (2001). *The Contingency Theory of Organizations, New Delhi, India Sage Publication, Inc.*

Duh, R. R., Chow, C. W. & Chen, H. (2006). Strategy, IT Applications for Planning and Control, and Firm Performance: The Impact of Impediments to IT Implementation, *Information & Management*, *43*, 939–949.

Drazin, R., & Van de Ven, A. H. (1985). Alternative Forms of Fit in Contingency Theory. *Administrative Science Quarterly*, *30*, 514-539.

Ferdinand, A. (2006). *Metode Penelitian Manajemen*, second edition. Semarang: Badan Penerbit Universitas Diponegoro.

Gerdin, J. (2005). The Impact of Departmental Interdependencies and Management Accounting System Use on Subunit Performance. *European Accounting Review*, *14*(2), 297-339.

Gerdin, J. & Greve, J. (2004). Forms of Contingency Fit in Management Accounting Research-A Critical Review, *Accounting. Organizations and Society, 29*, 303-326.

Grandlund, M. & Mouritsen, J. (2003). Problematising the Relationship between Management Control and Information Technology. *European Accounting Review, 12*(1), 77-83.

Grescov, C. (1989). Exploring Fit and Misfit with Multiple Contingencies, *Administrative Science Quarterly*, September, *38*, 431-453.

Gudono, (2011). *Analisis Data Multivariat*, Yogyakarta, BPFE.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate Data Analysis, A Global Perspective*. New Jersey: Pearson Education Inc.

Hayes, D. C. (1977). The Contingency Theory of Managerial Accounting. *The Accounting Review*, *52*(1), 22-39.

Hemmatfar, M. (2010). Competitive Advantages and Strategic Information Systems. *International Journal of Business and Management*, *5*(7), 158-169.

Hoque, Z. (2004). A Contingency Model of the Association between Strategy, Environmental Uncertainty and Performance Measurement: Impact on Organizational Performance. *International Business Review, 13, 485–502.*

Hyvonen, J. (2007). Strategy, Performance Measurement Techniques and Information Technology of the Firm and Their Links to Organizational Performance. *Management Accounting Research, 18*, 343–366.

Hyvonen, J. (2008). Linking Management Accounting and Control Systems, Strategy, Information Technology, Manufacturing Technology and Organizational Performance of the Firm in Contingency Framework, http://herkules.oulu.fi/isbn9789514287091/.

Ireland, R. D., Covin, J. G. & D. F. Kuratko. (2009). Conceptualizing corporate entrepreneurship strategy. *Entrepreneurship: Theory & Practice, 33(*1), 19-46.

Issa-Salwe, A., Ahmed, M., Aloufi, K. & Kabir, M. (2010). Strategic Information Systems Alignment: Alignment of IS/IT with Business Strategy. *Journal of Information Processing Systems*, *6*(1), 121-128.

Jermias, H. & Gani, L. (2010). The Effects of Strategy-Management Control System Misfits on Performance, Makalah disajikan dalam *Seminar Internasional di Fakultas Ekonomi dan Bisnis Universitas Hasanudin Makasar*, 22 August 2011.

Jermias, J. & Gani, L., (2005). Ownership Structure, Contingent-Fit, and Business-Unit Performance: A Research model and Empirical Evidence. *The International Journal of Accounting, 40*, 65-85.

Jermias, J. & Gani, L. (2004). Integrating Business Strategy, Organizational Configurations and Management Accounting Systems with Business Unit Effectiveness: a Fitness Landscape Approach. *Management Accounting Research*, *15*, 179–200.

Jogiyanto, (2005). *Sistem Informasi Strategik Untuk Keunggulan Kompetitif.* Bandung: Penerbit Andi.

Jogiyanto, (2003). *Sistem Teknologi Informasi, Pendekatan Terintegrasi: Konsep Dasar, Teknologi, Aplikasi, Pengembangan dan Pengelolaan*. Bandung: Penerbit Andi.

Jouirou, N. & Kalika, M. (2004). Strategic Alignment: a Performance Tool (An empirical study of SMEs), Small and Medium sized Enterprises, *Proceedings of the Tenth Americas Conference on Information Systems*, New York.

Kaplan, R. S. & Norton, D. P. (2006). *Alignment; Using Balanced Scorecard to Create Corporate Sinergies*. Boston: Harvard Business School Publishing Corporation.

Kaplan, R. S. & Norton, D. P. (2004). *Strategy Maps, Converting Intangible Assets into Tangible Outcomes*. Boston: Harvard Business School Publishing Corporation.

Kaplan, R. S. & Norton, D. P. (1996), *The Balanced Scorecard*, President and Fellows of Harvard College.

Kaplan, R. S. & Atkinson, A. A. (1989). *Advanced Management Accounting*, second edition. New York, USA: Englewood Cliffs.

Katz, B. M. & McSweeney, M. (1980). A Multivariate Kruskal-Wallis Test with Post Hoc Procedure, *Multivariate Behavioral Research, 15(3), 281-297.*

Kholeif, A. O., Abdel Kader, M. G. & Scherer, M. J. (2008). *Enterprise Resource Planning Implementation and Management Accounting Change in a Transitional Country*, *New York*, Palgrave Macmillan.

Kontan, 7 Julai 2014, *Industri RI Belum Siap Hadapi MEA*.

Langfield-Smith, K. (2007). A Review of Quantitative Research in Management Control System and Strategy, in *Handbook of Management Accounting Research*, Edited by Chapman, Hopwood and Shields, Elsivier Ltd, pp.753-783.

Langfield-Smith, K. (2006) Understanding Management Control Systems and Strategy, In *Contemporary Issues in Management Accounting*, edited by Alnoor Bhimani, New York, USA, Oxford University Press, pp. 243-265.

Luftman, J. N., Papp R. & Brier, T. (1999) Enablers and Inhibitors of Business-IT Alignment. *Communications of AIS*, *1*(11), 1-33.

Luftman, J. & Ben-Zvi, T. (2011) Key Issues for IT Executives 2011: Cautious Optimism in Uncertain Economic Times, *MIS Quarterly Executives*, *10*(4), 203-212.

Ministry of Industry, East Java, 2011, Directory of Big Industry in East Java (2010).

Morton, N. A. & Hu, Q. (2008). Implications of the Fit between Organizational Structure and ERP: A Structural Contingency Theory Perspective. *International Journal of Information Management*, *28*, 391-402.

Nishimura, A. (2005), Fundemental Features and Perspectives of Management Accounting in Asia. In *Management Accounting in Asia*, edited by Akira Nishimura and Roger Willet, Singapore, Thomson Learning.

Otley, D. T. (1980). The Contingency Theory of Management Accounting Achievement and Prognosis. *Accounting, Organizations and Society, 5*(4), *413-428.*

Phadoongsitthi, M. (2003). *The Role of Managerial Accounting in Emerging Economies: an Empirical Study of Thailand*, Dissertation, University of Maryland.

Paramita, B. (1989). *Masalah Keserasian Budaya dan Manajemen Indonesia*. Jakarta: Lembaga Penerbit Fakultas Ekonomi Universitas Indonesia.

Porter, M. E. (1993). *Strategi, Bersaing: Teknik Menganalisis Industri dan Pesaing* translated by Agus Maulana, Jakarta: Penerbit Erlangga.

Prahalad, C. K. & Krishnan, M. S. (2002). The Dynamic Synchronization of Strategy and Information Technology, *MT Sloan Management Review*, *43*(4), 24-33.

Rathman, S. G., Johnson, J. & Wen, H. J. (2005). Alignment of Business Strategy: A Case Study of Fortune 50 Financial Service Company, Journal *of Computer Information System*, 1-8.

Seaman, A. E. & Williams, J. J. (2006). Management Accounting Systems Change And Sub-Unit Performance: The Moderating Effects Of Perceived Environmental Uncertainty. *Journal of Applied Business Research – First Quarter 2006, 22*(1), *103-120.*

Said, J., Hui, W.S., Taylor, D. & Othman, R (2009). Customer Focus Strategies and Information Technology Capabilities; Implications for Service Quality of Malaysian Local Authorities. *International Review of Business Research 5*(3) 241-256.

Sekaran, U. (2003). *Research Methods for Business, A Skill Building Approach.* New York: John Wiley & Sons.

Sudarwan, M & Forgaty, T. J. (1996). Culture and Accounting in Indonesia: An Empirical Examination. *The International Journal of Accounting, 31*(4), 463-481.

Tavakolian, H. (1989). Linking the Information Technology Structure with Organizational Competitive Strategy: a Survey. *MIS Quarterly*, *13*(3), 309-317.

Turban, E. & Volonino, L. (2010). *Information Technology for Management, Improving Performance in the Digital Economy*, seventh edition. New York USA: John Wiley & Sons.

Venkatraman, N. (1994). IT-Enabled Business Transformation: From Automation to Business Scope Redefinition. *Sloan Management Review, 35*(2), 73-87.

Yanti, T. S. (2010). Perluasan Uji Kruskal Wallis Untuk Data Multivariate. *Statistika*, *10*(1), 43-49.

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APPENDIX 1

Descriptive Statistics

No.	Element of Fit		Mean	Standard Deviation	Pearson Correlation* (Sig)	Cronbach's Alpha
1	Competitive Strategy: Differentiation	Uniqueness of product	3.92	1.019	0,781 (0,000)	0,770
		Promotion	3.43	1.237	0,767 (0,000)	
		New design	3.51	1.134	0,804 (0,000)	
		On-time delivery	4.49	0.623	0,450 (0,000)	
		Service after sales	4.24	0.928	0,532 (0,000)	
	Competitive Strategy: Low Cost	Efficiency of the total cost	4.02	0.983	0,686 (0,000)	0,801
		Efficiency of the R&D expense	3.90	0.937	0,803 (0,000)	
		Efficiency of marketing expense	3.90	0.960	0,758 (0,000)	
		Efficiency of asset usage	4.23	0.808	0,796 (0,000)	
		Efficiency of shipping expense	4.13	0.914	0,858 (0,000)	
2	Management Accounting System: Strategic	ABC system	3.70	1.054	0,635 (0,000)	0,738
		Target costing	3.99	0.977	0,603 (0,000)	
		Quality cost	3.98	0.971	0,647 (0,000)	
		Life cycle costing	4.06	0.998	0,644 (0,000)	
		Balanced Scorecard	3.84	0.993	0,516 (0,000)	
	Management Accounting System: Traditional	Ratio analysis	4.18	0.856	0,818 (0,000)	0,798
		Analysis of variance	4.08	1.019	0,823 (0,000)	
		Budget	4.37	0.741	0,727 (0,000)	
		Breakeven analysis	4.19	0.873	0,838 (0,000)	
		Economic order quantity	3.79	1.137	0,709 (0,000)	

3	System of Information Technology: Enabler	Internet	4,01	0,97	0,723 (0,000)	0,784
		Database	4,42	0,65	0,669 (0,000)	
		E-commerce	3,90	1,06	0,789 (0,000)	
		ERP	4,16	0,89	0,744 (0,000)	
		Internet-based EDI	3,86	0,95	0,692 (0,000)	
	System of Information Technology: Automation	Office programs	4,41	0,99	0,561 (0,000)	0,778
		Accounting software	3,90	1,24	0,667 (0,000)	
		E-mail	3,97	1,15	0,828 (0,000)	
		Telephone-based EDI	3,66	1,13	0,826 (0,000)	
4	Financial Performance	ROI	79.06	18.327	0,709 (0,000)	0,801
		Profitability	84.72	16.152	0,827 (0,000)	
		Sales growth	86.39	18.005	0,727 (0,000)	
	Customer Performance	Reduction in customer complaints	76.39	19.575	0,750 (0,000)	0,807
		Increase in new customers	77.17	21.607	0,823 (0,000)	
		Customer retention	85.39	16.494	0,699 (0,000)	
	Internal Process Performance	Product innovation	77.61	21.855	0,728 (0,000)	0,828
		Production efficiency	82.22	16.912	0,862 (0,000)	
		On-time delivery	83.33	16.777	0,864 (0,000)	
	Learning/ Growth Performance	Welfare of employees	81.94	17.748	0,863 (0,000)	0,860
		Employee productivity	81.72	18.162	0,933 (0,000)	
		Knowledge and skills of employees	83.06	16.519	0,879 (0,000)	

APPENDIX 2

Homogeneity of Variance–Covariance Matrix (MULTIVARIATE).

Box's M	73.279
F	2.221
df1	30
df2	14514.823
Sig.	0.000

Homogeneity of Variance–Covariance Matrix (PARTIAL).

	F	df1	df2	Sig.
Financial	3.649	3	86	0.016
Customer	0.330	3	86	0.804
Internal Process	0.733	3	86	0.535
Learning/Growth	1.134	3	86	0.340

APPENDIX 3

Kruskal–Wallis Test Results (Multivariate).

$$\hat{\Sigma} = \frac{1}{N-k}\sum_{l=1}^{k}\sum_{i\in n_l} R_{n_l}(x^{(i)})R_{n_l}(x^{(i)})'=,$$

where
N = 17+20+32+21=90
k = 3

$$KW = \sum_{l=1}^{k} n_l \left(\overline{R}^{(l)}\right)\hat{\Sigma}^{-1}\left(\overline{R}^{(l)}\right) = 0+0+35.1249+0=35.1340$$

$\chi^2_3\,(0.95) = 7.81473$

Note: The complete data processing results using Minitab are available upon request.