Management Accounting in Indonesia: Analysis of Current Systems, Potential for Change and Forces behind Innovation*

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Abstract

The paper begins with a description of the current practice of management accounting in Indonesia and the degree to which management accounting systems and management accountants are expected to change during the next five years. This is followed by an empirical examination of the relationship between management accounting innovation in Indonesia and such factors as organization hierarchy, system design, company performance, size, and age.

As predicted, results from this study indicated that the level of management accounting system innovation can be predicted by the level of hierarchy and the nature of organizational design. Increased hierarchy has a negative association with innovation in management accounting systems. Similarly, organizations that are process oriented use more innovative management accounting systems than functionally oriented organization.

Key words: innovation, management accounting, hierarchy, Indonesia.

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** The survey instrument and data are available from the first author upon request.

1. Introduction

Researchers and practitioners have argued that effective management accounting systems contribute to increasing competitiveness (e.g., Elliot, 1992; Shank & Govindarajan, 1989; Johnson & Kaplan, 1987). Effective management accounting systems also help managers make better decisions (Jermias, 2000; Kaplan & Atkinson, 1998) and support company strategies such as continuous improvement, high quality, and customer satisfaction (Atkinson, Waterhouse and Wells, 1997). To be relevant in an ever changing environment, management accounting systems have to satisfy managers' demands for information that leads to doing things better and to doing better things. However, there is some evidence to suggest that management accounting, as a tool for managerial effectiveness and efficiency, is virtually non-existent in Indonesia (Abdoelkadir & Yunus, 1994).

The study consists of two phases. First is a description of the current practice of management accounting in Indonesia and the degree to which management accounting systems and management accountants are expected to change during the next five years. This represents the first empirical investigation of the management accounting environment in publicly held companies in Indonesia. Second, the paper advances and tests a number of hypotheses concerning the relationship between management accounting innovation in Indonesia and such factors as organization hierarchy, systems design, company performance, size and age.

2. Phase 1 - Research methods and data collection

A survey instrument was used to gather information from companies listed on the Jakarta Stock Exchange. Two hundred and fifty three companies received questionnaires in April 1997. The survey instrument was a variation of a questionnaire developed by Armitage (1994) and was translated into the Indonesian language. The questionnaires were sent to the "Manager of Finance" or equivalent in each company. Each questionnaire consisted of three sections. The first section asked for demographic information about the company. The second section requested information about the role of the management accounting system and about the role of the management accounting group within the company. The last section sought information on the extent to which new initiatives in management accounting were being adopted by the firm.

Respondents were sent the questionnaire along with a pre-stamped return envelope and were asked to return the questionnaires within three weeks. Out of 253 questionnaires sent, 39 total usable responses were received resulting in an overall response rate of slightly over 15%. Although this response rate may be considered low by North American standards, it is consistent with, and even slightly higher than, other research experiences in Indonesia. For example, a recent survey conducted by

the State School of Accountancy (STAN) obtained only a 10% response rate. Responding to survey type research is not yet a common practice by Indonesian firms. Informal discussions indicate that some managers have concerns about the use to which survey information is to be put. Other Indonesian managers do not believe their company can benefit from participating in academic research activities and some do not participate because they feel that academic research findings are not being adequately communicated to the respondents.

The researchers knew these limitations in advance. However, the size of the country (Indonesia crosses four time zones), the nature of the research questions and the limited research budget made survey research the only feasible approach to data gathering.

3. Data Analysis and Results

a. Characteristics of the respondents

Thirty nine usable questionnaires, or 15.42%, were returned and included in the sample. They are representative of the population surveyed in this study in terms of industry classification. Figure 1 shows the comparison between surveyed and responding firms with regard to industry classification.

[Insert Figure 1 here]

A majority of the respondents were from the manufacturing sector (19 companies or 48.72%), followed by financial/banking (6 companies or 15.38%) and trading (4 companies or 10.26%). Other industry sectors accounted for less than 10% of the total response. In terms of years in operations, 95% of the respondents indicated that their organization had been in business for more than 10 years, a period that can be considered long enough to establish a presence in the market and to have developed internal accounting systems and policies. Most companies employ between 501 to 5,000 employees (25 companies or 64.1%) while two companies employ more than 10,000 employees. In terms of total assets, a majority of the respondents (76.93%) have total assets more than US$ 41,000,000.

In summary, the data consists of a significant proportion of manufacturing (48.72%) and financial and banking (15.38%) companies. In addition, most companies have been in business for more than ten years and are considered medium to large size companies in Indonesia in terms of total assets, sales, and number of employees.

b. Management Structure and Relative Performance of the Respondents

For many years, management accounting in Indonesia has been subordinated to financial accounting requirements. Companies have been more concerned with inventory valuation and financial statement preparation for external users than with providing information for internal purposes.

In recent years, however, competition has intensified and business environments have changed. Throughout the world, managers are demanding more frequent, timely and higher quality information for internal management and decision making purposes. Changes in competition and the business environment have also had a profound effect on management accounting systems and management accounting groups. For example, many recent innovations stress moving from the "functional silo" approach to management to managing the value chain which implies activity or process accounting. of interest to this research is the degree to which management accounting systems and management accounting groups in Indonesia are structured and the degree to which they are changing their accounting systems to respond to this change. To put this in perspective, a number of questions were first asked relating to management structure and relative performance.

The majority of the responding companies (76.92%) are primarily managed by function (i.e., production, marketing, finance). Only 20.51% are managed by process. The rest are a combination of the two.

This functional orientation is consistent with the characteristics of the responding companies in terms of level of hierarchies. Generally speaking, functionally oriented firms have more pronounced levels of hierarchy than process oriented firms. In this data, it is interesting to note that 22 companies (58%) have six or more levels of hierarchy and the rest have 3-5 level of hierarchy.

The ultimate goal of most companies is to maximise shareholder wealth. Achieving this goal requires that firms outperform their competitors. To measure an organisation's relative performance, respondents were asked to rank the performance of their main product lines relative to their competitors in terms of cost, quality, and customer satisfaction. The response indicated that a high proportion of the respondents (41.03%) perceive their firms to be in the top decile in their respective industry. Virtually all believe that their organisation is in the top 50% of their industry.

c. Types of management accounting techniques currently used by Indonesian companies

Various management accounting techniques are taught in Indonesian universities. Since many of these university graduates are employed by the companies represented in the study sample, it is reasonable to speculate that a number of managerial tools and techniques studied at the university are used by Indonesian companies to help managers control operations, evaluate performance and make decisions. To develop a picture about management accounting techniques currently used by Indonesian companies and to learn about their perceived effectiveness, a set of questions was asked. Table 1 summarises the research findings.

[Insert Table 1 here]

Most companies use routine decision making tools (type A in table 1). Almost all companies (>97%) use cash, revenue and expenditure budgets. Contribution margin analysis is also used by majority of the respondents (92.31%). Other techniques such as standard costs, variance analysis, and break even analysis are also frequently used (ranging from 64.10% to 74.36%), while specific costing methodologies (such as job and process costing) and transfer pricing systems[1] appear to be used by less than half of the respondents. In terms of their effectiveness, most respondents perceived that the tools they used are moderate to very effective (ranging from 3 to 5 in the scale).

In evaluating capital budgeting projects, most companies used present value, internal rate of return, and payback period methods. It seems that the accounting rate of return method is not as popular a method for evaluating project performance. In terms of effectiveness, present value and internal rate of return are perceived to be more effective than payback period and accounting rate of return methods.

The responding companies mainly used net income combined with expenditure budgets to evaluate managers' performance. Respondents consider these bases for performance evaluation to be highly effective. Return on investment is only used by less than 50% of the respondents but is perceived as having a moderate to high level of effectiveness by those that use it. The fact that return on investment is not a very popular measure for evaluating managers' performance is understandable. In Indonesia, most investment decisions are made at the highest level of the hierarchy and sometimes by the owners. Managers are more responsible for the profit of their business units or divisions. Therefore, many business units, divisions, or even companies are considered as profit centres rather than investment centres.

1. All but one manufacturing company, however, used job order costing, process costing or both. On the other hand, twelve of nineteen manufacturing companies (or 63.16%) did not use transfer pricing systems.

d. The role of management accounting systems in management decision making

Traditionally, management accounting information has been mainly financial in nature. Primarily non-strategic, its focus has been on adherence to standards, feedback on budget variances and on departmental or unit cost effectiveness. Recently, however, management accounting information has incorporated considerable operational (non-financial) information such as quality, cycle time, and customer satisfaction and has begun focusing on information that assists in the removal of non-value added activities and in the development of more robust performance measurement systems.

Most responding companies (71.79%) have an identifiable management accounting group and this group provides information to managers (as opposed to being primarily concerned with satisfying external reporting requirements). This finding contradicts previous research that management accounting practices are virtually non-existent in Indonesia (see for example Abdoelkadir & Yunus, 1994). It is also encouraging to note that in 63.16% of the organizations sampled, the management accounting group increased in size relative to other groups within the business.

To assess the nature of management accounting systems used by Indonesian companies, respondents were asked to evaluate their management accounting systems on a 5-point Likert scale with respect to the following issues for the two time frames of 1997 (current condition) and 2002 (expected condition):

1. Whether management accounting systems in Indonesia focus primarily on departmental or unit level cost effectiveness (1 in scale) or overall organizational level cost effectiveness (5 in scale).
2. Whether management accounting systems in Indonesia focus primarily on achieving cost control (1 in scale) or continuous improvement (5 in scale).
3. Whether management accounting systems in Indonesia focus primarily on non-strategic (1 in scale) or strategic cost management issues (5 in scale).
4. Whether management accounting systems in Indonesia provide mainly static comparisons and static views of costs and cycle time (1 in scale) or provide information on companies' key success factors (5 in scale).
5. Whether management accounting systems in Indonesia provide primarily financial (1 in scale) or both financial and operational information (5 in scale).

Table 2 shows the mean response to the five questions. In 1997, the mean responses are around three which indicate that responding companies are primarily using traditional management accounting systems. The mean responses for 2002,

however, indicate that respondents are prepared, and expect, to adopt more innovative approaches to management accounting systems (mean >4).

[Insert Table 2 here]

It seems that in this globalization era, Indonesian companies are willing to adapt their management accounting systems to what others in the world are doing. Several reasons might account for this phenomena. First, changes in management accounting systems might be driven by a mimetic process in which companies copy what other successful organizations have been doing (DiMaggio and Powell, 1983). Second, adaptation might be caused by the fact that many Indonesians are being trained abroad where they are exposed to new ideas. Third, many companies are being advised to adopt innovative management accounting systems by professional groups such as Indonesian Institute of Accountants and IFAC.

e. The perceived role of accountants in organizations

The role of accountants in general, and management accountants in particular, has been challenged by academicians and practitioners. Some argue that accountants tend to work in their own domain and are not interested in innovation. Table 3 shows the perceived role of accountants in Indonesia in 1997 and how that role is expected to change by the year 2002. Based on the mean responses, the respondents (recall that the respondents were "Managers of Finance" or equivalent) perceived that the role of accountants is still somewhat traditional. This role, however, is expected to evolve to a broader set of responsibilities in the next five years. Again, the results indicate that Indonesian companies are in line with other companies in the world. The traditional view of accountants as record keepers is expected to change in the future as accountants become an integral part of the business team.

[Insert Table 3 here]

f. Improvement initiatives

The increased level of international competition has caused many organizations to improve their products in terms of quality, speed, and price to meet customers' demand. Companies often find that their existing systems cannot provide information needed in this ever changing environment. Fortunately, new innovations in management accounting methods are being developed with the ultimate goal to increase customer's satisfaction.

The following section describes the extent of organizations' use of improvement initiatives, prediction about their use in the next five years, and the

level of involvement of management accountants in working with the particular initiative. Respondents were asked to indicate the intensity level on a 5-point Likert scale (1: not intense; 5: highly intense).

Table 4 provides the mean response to the current level of intensity of interest (1997), the prediction of level of intensity of interest in the year 2002, and involvement level of accountants (or management accountants) in these initiatives. The level of intensity in 1997 is moderate. However, companies expect that the interest in, and use of, these new initiatives will be much more intense in the year 2002. Accountants' involvement in these initiatives is only moderate.

[Insert Table 4 here]

These findings send a clear signal about companies' desire to improve their management accounting systems. Management is being exposed to new initiatives to increase competitiveness of their companies through new literature, seminars, training and workshops available both domestically or internationally. Unfortunately, Indonesian accountants seem not yet involved intensively in the innovation process. It appears that there is some distance to travel before the perceived role of the accountant in the year 2002 (as described in Table 3) is reached.

4. Phase 2 - Hypothesis development

The purpose of the second part of this study is to add to the descriptive findings by examining whether there is any relationship between innovation in management accounting systems in Indonesia and organizational characteristics. Specifically, the study posits and tests the relationship between the dependent variable, innovation in management accounting systems, and independent variables of hierarchy, organizational design, company performance ranking, organizational size and age.

A review of innovation adoption literature reveals that contextual variables play an important role in explaining the degree of innovation in organizations (e.g. Abrahamson, 1991; Gresov, 1989). In this literature, innovation is defined as tools, devices, and knowledge that constantly improve operating processes from the level previously achieved. Thus, company A is considered more innovative than company B if company A transforms equal inputs into greater outputs than does company B.

Innovative management accounting techniques are those that better support companies' strategies to improve customer satisfaction in terms of quality, speed, and price of their products or services. In contrast, traditional management accounting techniques are defined as those that were designed to support company strategies to produce more homogeneous products and services in stable technological environments (e.g., Johnson & Kaplan 1987). These techniques include standard

cost, variance analysis, flexible budgets, job order costing, process costing, overhead application and analysis, cash budget, production budget, and divisional performance analysis. For the purpose of this study, the level of innovation in management accounting systems is measured by companies' intensity levels in using the contemporary management accounting systems listed in Table 4.

Contingency theory indicates that the adoption of innovative management accounting techniques may be driven by several factors, including technological innovations, production techniques, environmental uncertainties, organizational design, administrative control strategies, and size of organizations (Tiessen & Waterhouse, 1981; Otley, 1981; Ghozali & Linnegar, 1996; Waterhouse & Libby, 1996; Tiesen & Waterhouse, 1983). We use various surrogates of these measures to test their link to innovation in management accounting systems.

a. Level of hierarchy

Recent technological innovation demands more flexible approaches to production techniques and work force management. The introduction of team-based approaches, for example, requires multi-skilled employees. As a result, organizations that use innovative techniques tend to be flatter than those organizations that use traditional techniques.

There is a widespread view that hierarchy is the antithesis of initiative and creativity. Hierarchical structure has been perceived as the source of trouble and inefficiency. Excessive layering has caused inefficiency and inflexibility because information passes through too many people and decisions must go through too many levels (see for example Jaques, 1990). Given this phenomenon, we expect:

> H1: Organizations with fewer levels of hierarchy tend to use more innovative management accounting systems than those with more levels of hierarchy.[2]

b. Organizational design

With increasing levels of competition, organizations are forced to respond more quickly to customer needs. Organizations that are oriented toward process are more flexible in responding to customers' needs as compared to those oriented toward function. In a process oriented organization, workers are grouped based on related functions to be performed. This condition provides a climate for mutual support and learning as well as inter-departmental multi-skill development. The characteristics inherent in process oriented organizations are consistent with

2. For convenience, all hypotheses are stated in the alternative form.

contemporary management accounting systems such as Team-Based Approaches, Total Quality Management, Employee Empowerment, and Activity-Based Management. Therefore, we predict:

H2: Process oriented organizations tend to use more innovative management accounting systems than those oriented toward function.

c. Organization performance

Management accounting systems play a crucial role in assisting managers in their planning and control activities. In light of rapid and accelerating changes in production systems, manufacturing technology, and particularly the enormous innovation in information processing technology, management accounting systems need to respond appropriately by providing the relevant and timely information demanded by today's managers. Although excellent management accounting systems may not guarantee organizations' success, ineffective management accounting systems which produce delayed, distorted, or too highly aggregated information can easily put organizations at risk. Innovative management accounting systems support organizations' effort to become more competitive through better quality, lower costs, higher productivity, and better responsiveness to customers' demand. Therefore, the following hypothesis is offered:

H3: Good performers tend to use more innovative management accounting systems than poor performers.

d. Organization size

Prior studies have argued that organization size influences the level of innovation in management accounting systems (e.g., Ghozali & Linnegar, 1996; Merchant, 1984; Bruns & Waterhouse, 1975). Larger organizations need more sophisticated systems to account for their operations. In addition, larger organizations tend to have more resources invested in innovation efforts. Therefore, we posit that:

H4: Large organizations tend to use more innovative management accounting systems than small organizations.

e. Organization age

Some empirical studies have found that organizational age is positively correlated with innovation (e.g., Ghozali and Linnegar, 1996). They argue that older

companies have the opportunity to establish themselves in the market which enables them to spend their resources on innovation efforts. Thus, we posit that:

H5: Older organizations tend to use more innovative management accounting systems than newer organizations.

5. Variable measurement

There are five variables used to test the hypotheses mentioned in the previous section. The dependent variable is innovation in management accounting systems while the independent variables are hierarchy, organizational design, performance, size, and age.

a. Innovation

The level of innovation was measured using the scales shown in Table 14. The instrument has 17 items and responses were given on a 5-point Likert-type scale based on the principle of semantic differences described in Osgood et al. (1957) (e.g., 1=not developed ; 5=highly developed). Therefore, the highest possible score is 85 and the lowest possible score is 17).

b. Hierarchy

Hierarchy is measured by the number of layers from top management (CEO) to the technicians and operators (see for example Jaques, 1990). For analysis purposes, responding firms are classified into two groups; flat and steep. An organization is flat if it has a maximum of five layers while a steep organization is one with more than five levels of hierarchy[3].

c. Organizational design

Organizational design is classified into two categories: process oriented and functionally oriented. (Organizations that indicated they utilize both process and function approaches to management were excluded from the analysis).

d. Performance

Performance of an organization is measured by the ranking of its principal product(s) or service(s) in terms of the key performance factors such as cost, time, or quality in its respective industry. Respondents were asked to provide a self-ranking of their organization as compared to their competitors. Clearly, this self-ranking is

3. The dichotomy is determined following the empirical study by Jaques, (1990). The five layers consist of the CEO, President, General Managers, Unit Managers, and Technicians and Operators. More than five layers in an organization is therefore considered excessive.

not necessarily what the real ranking would be if conducted by an objective analyst. However, it does provide a measure of relative performance. Good performers were classified as those whose self-rankings were in the top 30% while poor performers were classified as those whose rankings were below the top 30%.

e. Size

Following previous studies, organizational size is measured by total assets. Organizations are categorized into three classes: small, medium and large. For this analysis, the total assets in each category were: less than $ 40 million, 40-200 million, and more than 200 million US dollars respectively.

f. Age

This variable is measured by the length of period in operation since establishment. Respondents were divided into two categories: new organizations (less than 10 years in operation) and established organizations (more than 10 years in operation) organizations.

6. Hypothesis testing

A separate one-way ANOVA test was conducted for each independent variable since we were interested in evaluating the differences in the level of innovation between groups for each independent variable. In this design, ANOVA is considered the most appropriate (see for example Bloom, 1992; Howell, 1992; Evans, 1992).

a. Hypothesis one

The first hypothesis predicted that level of hierarchy has a negative association with innovation in management accounting systems. Table 5 shows the results of the statistical test. The results indicate a significant difference in the innovation level in management accounting systems between flat and steep organizations, $F(1,36)=2.87$, $p<.10$. Flat organizations use more innovative management accounting systems (mean=55.06) than steep organizations (mean=45.57). The results is consistent with hypothesis H1.

[Insert Table 5 here]

b. Hypothesis two

The second hypothesis expected that organizations oriented toward process would use more innovative management accounting systems than those oriented

toward function. Table 6 depicts the results of the hypothesis testing. The results show a significant difference in innovation level between process oriented and functional oriented organizations $F(1,35)=7.19$, $p<.05$. Process oriented organizations are more innovative (mean=63.38) than functional oriented organizations (mean=47.00). The results confirm hypothesis H2.

[Insert Table 6 here]

c. Hypothesis three

The third hypothesis stated that good performers tend to use more innovative management accounting systems than poor performers. Table 7 shows the results of the statistical test. The results indicate a significant difference in innovation level between good performers and poor performers, $F(1,30)=6.41$, $p<.05$. Contrary to expectations, it is the poor performers that use more innovative techniques (mean=60.80) than good performers (mean=44.95). The results are not consistent with hypothesis H3.

[Insert Table 7 here]

The result is unexpected. In general, it is reasonable to predict a positive correlation between innovation level of management accounting systems and organization performance. The contrary results raises some questions about the relationship between innovation and performance. Is it innovation that causes performance or performance expectations that create the need for organizations to innovate? In Indonesia, for example, we witness that poor performers are often forced to undergo a restructuring program that includes new management and new management methods and systems to operate their business. Poor performance could be a trigger that forces Indonesian organizations to be innovative. However, it is also true that innovative management techniques are still in the early stages of being introduced to companies in Indonesia. An alternative explanation to the unexpected results is the possibility of a lagged variable effect which could not be tested in this study. It is also possible that since almost all firms in the sample rated their performance as above average, the performance variable is poorly specified.

d. Hypothesis four and five

The fourth and fifth hypotheses investigate the association between level of innovation and organizational size and age. Statistical analyses were performed on these two hypotheses. The results show that there is no association between innovation and size or age. The results, therefore, do not support hypotheses four and five.

7. Conclusion

Contrary to existing beliefs, this study provides evidence that management accounting is used as a tool for managerial efficiency and decision making in Indonesia. Many companies have an identifiable management accounting group whose primary purpose is to provide information for managers' decision making. This study also reveals that traditional management accounting tools are being used intensively by Indonesian companies. Adoption of new initiatives in management accounting appear to lag, but are expected to increase by the turn of the century.

The traditional view of management accountants as a group that provides routine schedules and reports still dominates. However, there is a belief on the part of finance managers that management accountants will play a more active role in the future - one that fosters change and takes on broader responsibilities for the direction and management of the organization.

Although this study might be considered exploratory, the results are consistent with two of our conjectures based on existing literature. The level of management accounting systems innovation in organizations can be predicted by the level of hierarchy and the nature of organizational design. Increased hierarchy has a negative association with innovation in management accounting systems. Similarly, organizations that are oriented toward process use more innovative management accounting systems than functionally oriented organizations.

A contradictory result was found when testing the association between innovation in management accounting systems and performance. While we expect a positive association, the opposite direction was found. It might be that poor performance triggers the adoption of more innovative management accounting systems or there might be a lagged variable effect which could not be tested in this study or the variable was simply misspecified. This is an interesting finding that deserves further research particularly in determining the causal relationship between innovation and performance.

The results of the study must be tempered by the knowledge that the response rate of 15% was low and that the 39 companies that participated in this study are not a perfect representative of all publicly held companies in Indonesia. Nevertheless, given that hardly any information about management accounting practices in Indonesia exist, this study may be considered as a first step in gaining an appreciation of the types of management accounting systems that currently exist in Indonesia and the degree to which these systems, and the management accountants, who operate them, are expected to change over the next five years.

References

Abdoelkadir, Katjep, K., & Hadori Yunus, (1994), "Accounting Education in Developing Countries: Development in Indonesian Accountancy", In J.O. Bruns & B.E. Needles, Jr. (Eds.), Accounting Education for the 21st Century: The Global Challenges, American Accounting Association.

Abrahamson, E., (1991), "Managerial Fads and Fashions: The Diffusion and Rejection of Innovations", Academy of Management Review, Vol. 16, No. 3, 586-612.

Armitage, H.M., & J.H. Waterhouse, (1995), Dual Core of Innovation, Working Paper, University of Waterloo, Waterloo, Ontario, Canada.

Atkinson, A.A., J.H. Waterhouse and R.B. Wells, (1997), A Stakeholder Approach to Strategic Performance Measurement, Sloan Management Review, Vol 38, No 3, Spring, 1997.

Bruns, W.J., & J.H. Waterhouse, (1975), "Budgetary Control and Organization Structure", Journal of Accounting Research, 13, 177-203.

Dimaggio, P.J., & W.W. Powell, (1983), "The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields", American Sociological Review, Vol. 48, 147-160.

Elliot, Robert K., (1992), "The Third Wave Breaks on the Shores of Accounting", Accounting Horizons, June, 62-85.

Evans, A.N., (1992), Using Basic Statistics in the Behavioral Sciences, Second Edition, Scarborough, Ontario, Prentice Hall Canada Inc.

Ghozali. I., & G.J. Linnegar, (1996), "The Effect of Firm Characteristics on the Application of Advanced Management Accounting Techniques", The International Journal of Accounting and Business Society, Vol. 4, No. 2, 41-68.

Gresov. C., (1989), "Exploring Fit and Misfit with Multiple Contingencies", Administrative Science Quarterly, No. 34, 431-453.

Hayes, Robert H., Steven C Wheelwright, & Kim B. Clark, (1988), Dynamic Manufacturing Creating the Learning Organization, New York, Free Press.

Howell, D.C., (1992), Statistical Methods for Psychology, Third Edition, Boston, PWS-KENT Publishing Company.

Jaques, Elliott, (1990), "In Praise of Hierarchy", Harvard Business Review, January-February, 127-133.

Jermias, Johnny, (2000), "Cognitive Dissonance and Resistance to Change: The Influence of Commitment, Confirmation and Feedback on Judgment Usefulness of Accounting Systems" Accounting, Organization and Society, (Forthcoming).

Johnson, H.T., & R. Kaplan, (1987), Relevance Lost - The Rise and Fall of Management Accounting, Boston, M.A., Harvard Business School Press.

Kaplan, R.S., & A.A. Atkinson, (1998), Advanced Management Accounting, Third Edition, Prentice Hall, Englewood Cliffs, New Jersey.

Kelly, D., & T.L. Amburgey, (1991), "Organizational Inertia and Momentum: A Dynamic Model of Strategic Change", Academy of Management Journal, Vol. 34, No. 3, 591-612.

Majchrzak, A., & J. Cotton, (1988), "A Longitudinal Study of Adjustment to Technological Change: From Mass to Computer-Automated Batch Production", Journal of Occupational Psychology, No. 61.

Merchant, K.A., (1984), "Influences of Departmental Budgeting: An Empirical Examination of A Contingency Model", Accounting, Organizations, and Society, Vol. 9, No. 3/4, 291-307.

Nanni, Alfred J., Rob J. Dixon, & Thomas E. Vollmann, (1992), "Integrated Performance Measurement: Management Accounting to Support the New Manufacturing Realities", Journal of Management Accounting Research, Fall, 1-19.

Osgood, C.E., G.J. Suci, & P.H. Tannenbaum, (1957), The Measurement of Meaning, Urbana, University of Illinois Press.

Shank, J.K., & V. Govindarajan, (1989), Strategic Cost Analysis: The Evolution from Managerial to Strategic Accounting, Homewood, Illinois, Richard D. Irwin Inc.

Tiessen, P., & J.H. Waterhouse, (1983), "Towards a Descriptive Theory of Management Accounting", Accounting, Organizations, and Society, Vol. 8, No. 2/3, 251-267.

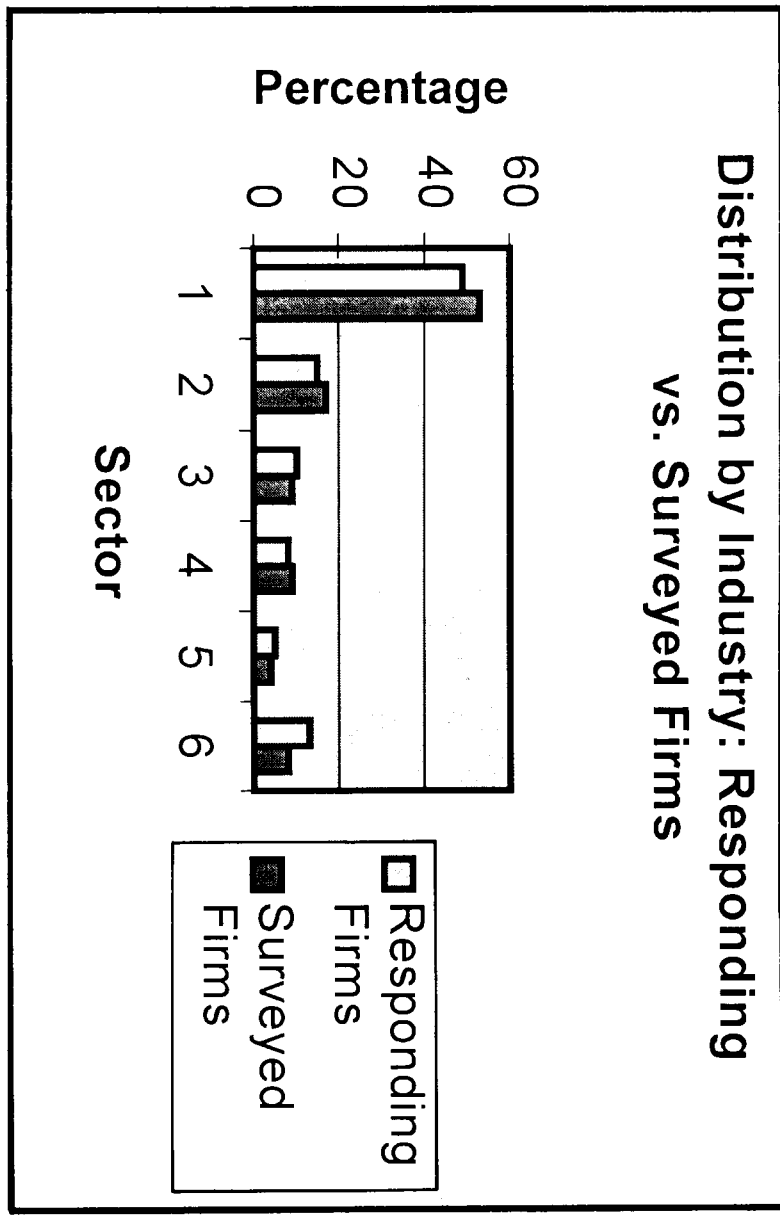

Table 1
Management Accounting Techniques Used By Indonesian Companies (%)

Management Accounting Techniques Employed	Not Used	Used	Effectiveness Low				High
			1	2	3	4	5
A. Routine Decision Tools							
1. Cash Budget	2.56	97.44	5.26	2.78	31.58	39.47	21.05
2. Revenue Budget	2.56	97.44	2.78	5.26	13.16	47.37	31.58
3. Expenditure Budget	2.56	97.44	5.26	2.78	13.16	47.37	31.58
4. Standard Cost	35.90	64.10	0.00	16.00	32.00	32.00	20.00
5. Variance Analysis	25.64	74.36	0.00	6.90	31.03	41.38	20.69
6. Break-Even Analysis	30.77	69.23	3.70	18.52	37.04	25.93	14.81
7. Job Order Costing	53.84	46.15	0.00	11.11	22.22	50.00	16.67
8. Process Costing	53.84	46.15	5.56	0.00	11.11	66.67	16.67
9. Contribution Analysis	7.69	92.31	2.78	2.78	22.22	50.00	22.22
10. Transfer Pricing	56.41	43.59	0.00	17.65	41.18	35.29	5.88

B. Project Evaluation							
1. Present Value Model	17.95	82.05	6.25	9.38	9.38	59.38	15.63
2. Internal Rate of Return	15.38	84.62	6.06	6.06	21.21	42.42	24.24
3. Payback Period	15.38	84.62	0.00	30.30	36.36	18.18	15.15
4. Accounting Rate of Return	43.59	56.41	0.00	27.27	36.36	31.82	4.55
C. Performance Evaluation							
1. Return on Investment	51.28	48.72	5.26	5.26	36.84	36.84	15.79
2. Net Income	17.95	82.05	3.13	6.25	21.88	31.25	37.5
3. Expenditure Budget	15.38	84.62	0.00	6.06	36.36	36.36	21.21

Table 2
Mean Response of the Nature of Management Accounting Systems

Question	Mean (scale of 1 – 5)	
	1997 (current)	2002 (expected)
1. Unit vs. organizational effectiveness.	3.00	3.72
2. Cost control vs. continuous improvement	3.03	4.15
3. Non-strategic vs. strategic issues	3.18	4.23
4. Static vs. key success factors	3.23	4.13
5. Financial vs. operational results	3.18	4.18

Table 3
The Perceived Role of Accountants in Indonesia

Question	Mean	
	1997	2002
1. Deliver routine reports (1 in scale) vs. service to internal customers for customer satisfaction (5 scale)	3.05	4.00
2. Inhibits or uninterested in change (1 in scale) vs. fosters change (5 in scale)	3.05	4.18
3. Isolated (1 in scale) vs. part of management team (5 in scale)	3.36	4.23
4. Exist to support financial accounting requirements (1 in scale) vs to serve internal customers (5 in scale)	3.33	4.08
5. Provides structured facts about costs (1 in scale) vs. advice based on potential cost behaviour (5 in scale)	3.13	4.03

Table 4
Improvement Initiatives and Accountants' Involvement

Intensity of Level of Interest in Improvement Initiatives	Mean (scale of 1-5)		
	1997 (current)	2002 (expected)	Level of Current Involvement
1. Benchmarking	2.56	3.41	2.82
2. Total Quality Management	3.10	3.90	3.23
3. ISO (9000, 14000, etc)	3.18	3.97	3.08
4. Flexible Manufacturing	2.08	2.51	2.15
5. Customer Focus	3.49	4.08	2.97
6. Team-Based Approach	3.18	3.62	2.95
7. Activity-Based Costing	2.57	3.54	3.51
8. Activity-Based Management	2.49	3.41	3.15
9. Social Responsibility	3.08	3.67	2.72
10. Employee Empowerment	3.18	3.77	3.00
11. Target Costing	2.87	3.28	3.44
12. Computer Integrated Manufacturing	2.74	3.67	3.41
13. Just-in-time	2.26	3.15	2.85
14. Non-financial Performance Measurement	3.00	3.56	2.85
15. Business Process Reengineering	2.72	3.56	3.03
16. Value-chain Analysis	2.18	2.64	2.41
17. Economic Value Added	2.54	3.26	2.97

Table 5
One-way ANOVA result: Innovation with hierarchy

Source		SS	MS	F-ratio	F-prob.
Between Groups	1	818.03	818.03	2.87	.09
Within Groups	35	9,972.08	284.92		
Total	36	10,790.11			

Table 6
One-way ANOVA result: Innovation with organizational design

Source	DF	SS	MS	F-ratio	F-prob.
Between Groups	1	1,668.43	1,668.43	7.19	.01
Within Groups	34	7,885.88	231.94		
Total	35	9,554.31			

Table 7
One-way ANOVA result: Innovation with performance

Source	DF	SS	MS	F-ratio	F-prob.
Between Groups	1	1,726.16	1,726.16	6.41	.02
Within Groups	30	8,080.55	269.35		
Total	31	9,806.72			