

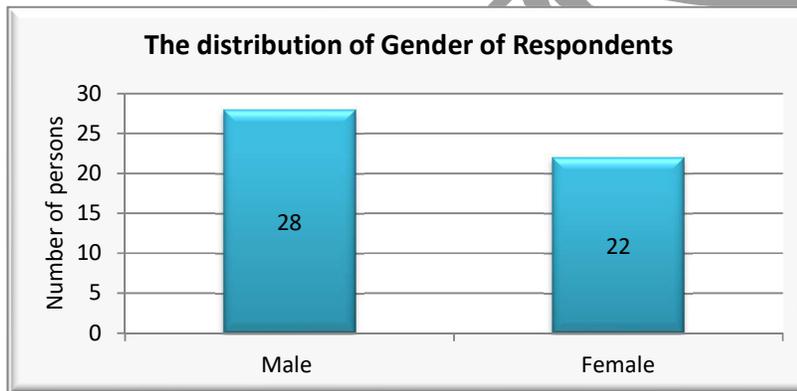
4. FINDINGS AND ANALYSIS

50 questionnaires were distributed by snowball sampling and all were collected. All questions are answered. The response rate is 100%.

4.1 DEMOGRAPHIC PROFILE OF THE RESPONDENTS

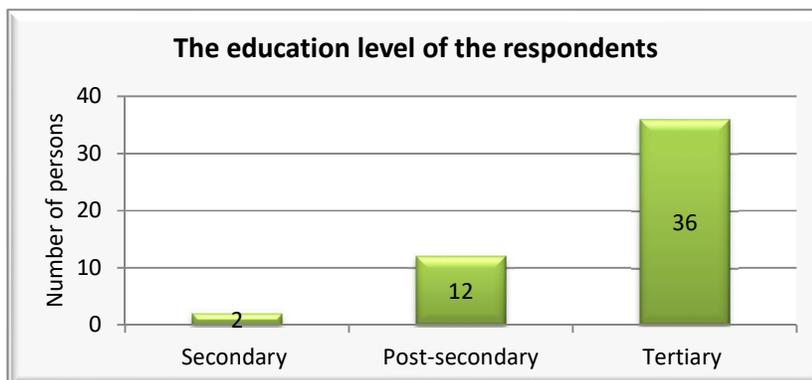
For Section I, among the 50 respondents, 56% of total respondents are male and 44% are female. Figure 4-1 shows the gender distribution of the respondents.

Figure 4-1 The gender distribution of the respondents



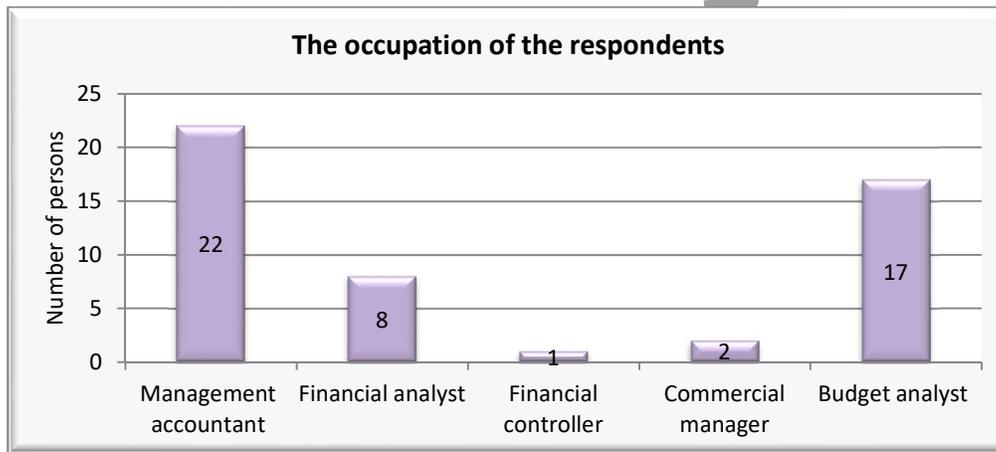
Regarding the education level, 72% of total respondents have received tertiary education, 24% post-secondary, and 4% secondary. Figure 4-2 shows the distribution of the education level of the respondents.

Figure 4-2 The education level of the respondents



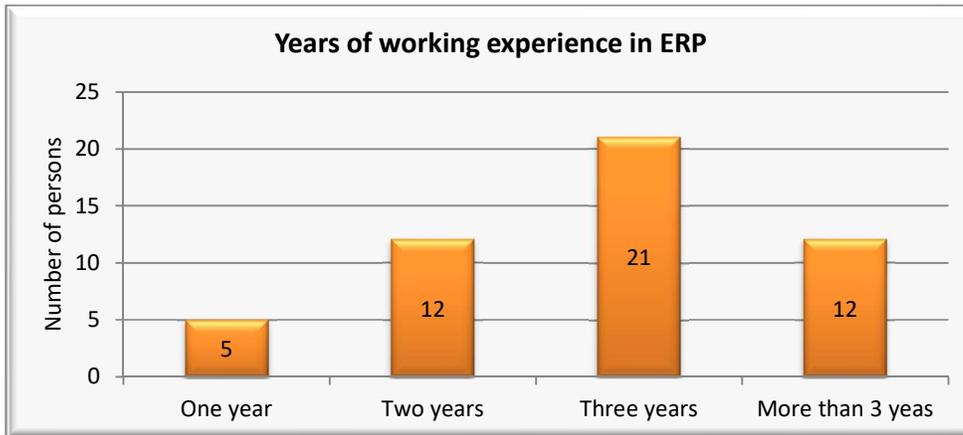
Concerning the occupation, 44% of total respondents are management accountant, 34% are budget analyst, and 16% are financial analyst. Combining the occupation and education level, the respondents are assumed to possess professional knowledge of management accounting. Figure 4-3 shows the occupation of the respondents.

Figure 4-3 The occupation of the respondents



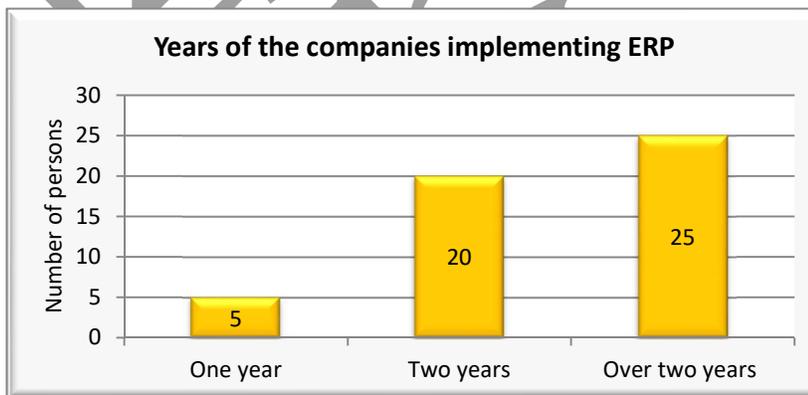
All respondents reply that they have knowledge of ERP. For the working experience in ERP system, 42% of total respondents have three years of experience, 24% have two years, 10% have one year, and 12% have more than three years of experience in ERP system. Figure 4-4 shows the number of respondents having various years of working experience in ERP.

Figure 4-4 The working experience in ERP among respondents



Most of the employers of the respondents have implemented the ERP systems for more than two years. 50% of the respondents reply that their employers have ERP systems for over two years, 40% have ERP systems in their companies for two years, 10% one year so all respondents are eligible for the reply of the section two of the questionnaire. Figure 4-5 shows the result of the last question in the first section.

Figure 4-5 Years of the companies that have implemented ERP



4.2 IMPACT OF ERP ON MANAGEMENT ACCOUNTING PRACTICES

Section two contains two questions. The first question is:

Q1 How do you find the following impacts of ERP system on management

accounting practices?

Figure 4-6 shows the result of the first question. 86% of total respondents consider that ERP system affects the management accounting practices to be more focused on value added activities (mean = 2.04). 76% of total respondents agree that ERP system allows the management accounting practices to be emphasized more on the KPIs analysis (mean = 2.46). These findings are consistent with that of Jackling and Spraakman (2006) which suggest that the management accounting practices shifts from transaction level to value added activities after the ERP implementation.

Figure 4-6 Result of Q1 of Section II

n=50	strongly agree		neutral	strongly disagree		Mean
	agree	disagree		disagree	disagree	
More focused on value added activities	8 16%	35 70%	4 8%	3 6%	0 0%	2.04
More focused on KPIs	5 10%	33 66%	0 0%	8 16%	4 8%	2.46
Management accounting practices more aligned with company's goals and objectives	6 12%	27 54%	3 6%	12 24%	2 4%	2.54
Improve financial and non-financial performance measures	11 22%	21 42%	3 6%	9 18%	6 12%	2.56
Facilitates variance analysis	2 4%	22 44%	4 8%	18 36%	4 8%	3
Improves forecasting assumptions	1 2%	11 22%	8 16%	27 54%	3 6%	3.4
Improves budgeting assumptions	0 0%	8 16%	12 24%	27 54%	3 6%	3.5

Jackling and Spraakman (2006) also find that ERP system provides changes of management accounting practices to be more aligned with the company's

goals and objectives, and improve the efficiency and effectiveness of performance measures. The results of this research are in line with the findings of Jackling and Spraakman (2006). 66% and 64% of total respondents agree that the ERP aligns the management accounting practices with the company's goals and objectives (mean = 2.54), and improves the financial and non-financial performance measures (mean = 2.56) respectively. With respect to the financial performance analysis and financial ratio analysis, as found by Nah et al (2001), ERP systems are capable of capturing the data however for the analysis of either financial or non-financial performance, the ERP systems may not be able to accomplish.

In the findings of Edwards (2001), Baxendale and Jama (2003), Lea (2007) etc., ERP systems increase the use of traditional management accounting practices such as variance analysis in financial or costing analysis however in this research, the result show neutral (mean = 3). 45% of total respondents consider that ERP facilitates their use of variance analysis while 44% provide opposite opinion. The respondents who strongly disagree are financial controller and commercial managers. ERP systems can calculate the variance amounts but the systems cannot explain the reasons of any variances as the explanation requires knowledge of the business process and operations.

In financial planning (FP&A), rolling forecasts, and budgeting regardless of capital (CAPEX) budgeting or operation (AOP) budgeting, assumptions of variables play a very important role in management accounting. Cook (2000) asserts that ERP system enhances the effectiveness of capital budgeting; and

Meall (2003) states that ERP system helps reduce budget preparation time. Nevertheless, Hope and Fraser (2001) argue that ERP systems can replace budgeting. From this research results, 60% of total respondents do not agree that ERP can improve forecasting assumptions (mean = 3.4); and also 60% do not consider that ERP improves budgeting assumptions (mean = 3.5). The respondents that strongly disagree are financial controller and commercial manager who have substantial knowledge and working experience in FP&A, and budgeting, and ERP systems. The results show that ERP systems cannot eliminate budgeting because the assumptions of forecasts and budgets require professional judgment that is related to the understanding of the company strategies, goals and objectives, business, and operations. ERP can only provide more accurate and reliable information; and real time access to the data for analysis but all ERP systems cannot give assumptions for budgeting or forecasting.

The findings show there is an impact of ERP systems on the management accounting practices. Management accounting practices such as variance analysis and KPIs analysis are more concerned with value added activities, and more inclined to coping with company's goals rather than staying on the transaction level and focusing on the number crunching. On the other side, ERP systems cannot substitute professional judgment required in financial or cost analysis, forecasting, and budgeting so there is no influence of ERP on budgeting and forecasting techniques. Overall, the results do not agree to the findings of Kaplan and Cooper (1998) and Hyvonen (2003) that ERP systems have no impact on management accounting practices.

4.3 IMPACT OF ERP ON THE ROLE OF MANAGEMENT

ACCOUNTANTS

The ERP systems affect not only the management accounting practices but also the role of management accountants. The next question is:

Q2 How do you find the following impacts of ERP system on the role of management accountants?

The management accountants defined in this research include mainly the management accountants, financial analysts, and budget analysts as found in the first section of the questionnaire.

Figure 4-7 shows the result of the question. The mean values of Q2 show that ERP has an impact on the role of management accountants.

Figure 4-7 Result of Q2 of Section II

n=50	strongly agree		neutral	strongly disagree		Mean
	agree	disagree		disagree	agree	
ERP motivates to acquire IT and analytical skill	21 42%	28 56%	0 0%	1 2%	0 0%	1.62
More focused on business analysis	14 28%	30 60%	2 4%	3 6%	1 2%	1.94
More focused on value-added activities	18 36%	24 48%	2 4%	4 8%	2 4%	1.96
Elimination of transaction level routine jobs	13 26%	29 58%	1 2%	6 12%	1 2%	2.06
More concerned with the strategies of the company	16 32%	25 50%	1 2%	5 10%	3 6%	2.08

Sayed (2006), Sangster et al (2009), and Scapens and Jazayeri (2003) suggest that management accountants need to upgrade their IT skills, analytical and consulting capabilities, and strategic thinking after the ERP

implementation. In order to be competitive in the labor market, management accountants have to acquire new IT and analytical skill. 98% of total respondents recognize that ERP motivates them to improve their skills and competencies (mean = 1.62). The remaining 2%, representing one respondent possessing superior skills in IT and analytical is a financial controller.

88% of total respondents agree that ERP changes their roles to be more focused on business analysis (mean = 1.94). This result is consistent with the finding of Granlund and Malmi (2002) that management accountants will have more time to do business analysis after the ERP implementation. As the management accounting practices are shifted from transactional level to strategic view, more business analysis is expected.

Since the management accounting practices are more focused on value added activities as obtained in the last section, management accountants are required to do analysis at the activity level. 84% of the total respondents consider that their roles become more emphasized on analysis of value added activities (mean = 1.96). This finding is in line with Sangster et al (2009) that ERP makes the management accountants concentrate on value added activities such as information analysis and scenario building.

Regarding the elimination of transaction level routine jobs, 84% of total respondents agree that their job roles have been free from manual tasks (mean = 2.06) as found by Doran and Walsh (2004) and moved from record keeper to internal consultant as suggested by Scapens and Jazayeri (2003).

Following the change of the requirement of more analysis of business and the management accounting practices are more aligned with the company's strategies and objectives, the role of management accountant has to be more concerned with the strategies of the company. As the assumptions of budgeting and forecasting are relied upon the individual knowledge and experience of management accountants, strategic thinking and analytical skill must be incorporated into their roles. 82% of total respondents agree that ERP makes their roles be more concerned with the company's strategies (mean = 2.08).

The management accountants who disagree to the changing roles of management accountants mainly are those working as management accountants and having one year working experience in ERP systems or their companies have implemented ERP systems for one year only.

Overall, the results of Q1 show ERP systems have impacts on certain management accounting practices but not on some areas. Since the survey results do not provide an insight of the ways and extent to which the management accounting practices are affected. Semi-structured interviews with three employees in Company X are conducted for the purpose of obtaining the details. The findings of Q2 reveal that ERP system has an important impact of the roles of management accountants. The results are corresponding with those of Sangster et al (2009) that ERP systems have a significant correlation with the roles of management accountants. The result of this question clearly shows the impact however the interview results from

executives who have greater knowledge and experience in ERP systems can reinforce the survey result.

4.4 PROFILES OF INTERVIEWEES

The interviewees consist of three executives working as management accountant, financial planning analyst, and commercial manager in Company X. Figure 4-8 shows the profiles of individual interviewees.

Figure 4-8 Profiles of interviewees

<u>Interviewee</u>	<u>Gender</u>	<u>Profession</u>	<u>Year of experience in ERP</u>
1	Male	commercial manager	8 (SAP)
2	Female	financial planning analyst	10 (SAP, Oracle)
3	Female	management accountant	4 (SAP)

The ERP system that Company X has implemented is SAP which is the most famous ERP software. All interviewees have substantial working experience in management accounting and working experience in ERP systems. Commercial manager is the supervisor of the management accountant. His job roles are mainly in capital and operation budgeting, forecasting, and gap analysis for non-financial performance in manufacturing. The management accountant is responsible for cost variance analysis. The tasks of financial planning analyst are mainly cash flow budgeting, operation plan, rolling forecast, and KPIs analysis including financial performance and non-financial performance analysis.

4.5 RESULTS OF INTERVIEWS

There are three questions for each interview. The first question is:

1. To what extent the ERP system improves the quality of management accounting information?

All interviewees recognize that management accounting information or reporting are improved after the implementation of ERP system. They can access the data real time so the information sharing is enhanced. These save them much time in preparing the appropriate data particularly for the management meetings. As the ERP system integrates all functions within the organization, the activities of production, marketing, logistics, finance, accounting, and human resources etc. so the data can be more integrated and more readily for analysis without wasting lots of effort on searching for the sources and flow of the figures. Since the data is integrated and the business practices are standardized, the management accounting information can be provided timely and more efficiently however the ERP system cannot ensure the accuracy of the integrated data which largely relies on not only the experienced users for data entry but also every employee in the company. The reliability of management accounting reports is affected by all employees involved in the business process. From their experience, there are always errors found in the data because SAP is a complex ERP system that requires even the low level users to have an understanding of the operational process within the organization.

This result is not consistent with that of Colmenares (2009) that ERP systems improve the quality of financial reports and provide reliable accounting information however it is similar with the finding of Rom and Rhode (2006) that ERP systems do not have significant relationship with the improvement of management accounting information.

The second question is:

2. Does the ERP system change the ways of financial analysis, forecasting technique, or budget formulation?

Both the commercial manager and financial planning analyst do not agree that ERP system can change the forecasting technique or budget formulation. The major part of the forecasting and budgeting is the assumption on key variables such as sales turnover, costs and expenses particularly those with variable nature. These assumptions and estimations are not related to historical data only. They need comprehensive understanding of the economy, industry and business environment, and the company's objectives and strategies. ERP system cannot accomplish such kind of tasks although theoretically it is easy to input the formulas of the estimations into the system for a standardized reporting package. For instance, the ERP system even has difficulty in identifying the historical patterns of cost drivers if there have been some irregular fluctuations between periods. In addition, some ERP system has problem in the integration with the other existing systems such as payroll system in the company; or it needs an analytical tool for supplement, for instance, Oracle usually links with Hyperion Essbase for more effective financial analysis.

With respect to the specific budgeting techniques, ERP system cannot solve the problems. For instance, in incremental budgeting, the percentages used for each income and cost category should be decided individually according to the real situation otherwise higher inflated costs or prices may cause wrong decision making in the operation or may affect the competitive advantage of