

MANAGEMENT ACCOUNTING PRACTICES: A CASE OF JORDANIAN MANUFACTURING COMPANIES

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ABSTRACT

The study aims to report the importance and current use of management accounting practices in textbooks and the broader literature. Data was generated using a questionnaire, which was conducted on a sample of 30 manufacturing companies in Jordan. Descriptive statistics on the usage of individual practices provide the basis for discussion. The results showed that the respondents perceived Management Accounting Practices (MAPs) to obtain relevant information for proper decision making. Several factors, including nature of the business, type of information needed for making decisions, and utilization of existing resources, affect the choice of MAPs used by the manufacturing companies. The study has shown that MAPs supported the organizational structure and management accounting processes. Management accounting can provide relevant information for capital investment decisions, which allow accountants to produce discounted cash flow, payback period, and accounting rate of return.

Keywords: management accounting, decision making, profitability, financial measures, operating costs

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INTRODUCTION

Management Accounting Practices (MAPs) were strongly criticized during 1980s by Johnson and Kaplan (1987). Since then, a number of innovative management accounting techniques have been developed across a range of industries (Kaplan & Norton, 1996; Hoque & Mia, 1998; James & Hoque, 1999). Management accounting techniques are used by manufacturing companies to assess their operations. Such practices include budgeting, variance analysis, and breakeven analysis. These methods help organizations to plan, direct, and control operating costs and achieve profits. It has been argued that the “new” techniques have affected management accounting, and have shifted its focus; however, it still needs more practical research.

Most of the research papers have focused on the use of various management accounting practices and techniques, which have been conducted in different countries (Bhimani, 2002; Luther & Longden, 2001; Mendoza & Bescos, 2001; Abdel-Kader & Luther, 2006). In response to the study conducted by Anderson and Lanen (1999), this research takes into account a broad set of MAPs in manufacturing companies in small developing countries, such as Jordan. In Jordan, some manufacturing companies have been facing challenges with several companies experiencing bankruptcy. Therefore, there is a need to strive for profitability in the manufacturing industry in Jordan through the use of sound MAPs.

This study investigated MAPs in Jordanian Manufacturing Companies listed in the Amman Stock Exchange (ASE). It informs practitioners about MAPs within a small developing country and determines best practices suitable for companies in this region. It examines which MAPs in Jordanian manufacturing companies are more widely used, which ones are preferred, and why they are preferred over other practices. It also focussed on several factors that influence the decisions made by management to adopt appropriate techniques that provide the best results for reporting the system. The main aim is to shed light on the current use of management accounting procedures and their importance with reference to textbooks and the broader literature.

LITERATURE REVIEW

MAPs have been specifically considered as a method to support an organization's infrastructure for manufacturing businesses as described by Ittner and Larcker (2002). According to Abdel-Kader and Luther (2006), a broad set of MAPs can include costing systems, budgeting, performance evaluation, information for decision-making, and strategic analysis. These new methods have changed the basic principles of management accounting into a more superior one that adds value to various practices (Ittner & Larcker, 2001). Some practices, including costing systems as indicated by Dugdale and Jones (2002) have not been highly favored by a majority of manufacturing businesses since they do not provide an accurate method of recording costs. However, this recording helps to be exact in order to make sound management decisions. Target costing and the costing of quality have been introduced by Abdel-Kader and Luther (2006) as tools for confronting increased competition.

BUDGETING

Budgeting is an important tool for planning and controlling the activities of an organization and allocating a firm's resources to achieve its objectives and goals (Drury et al., 1993; Dugdale, 1994; Longden, 2001; and Abdel-Kader & Luther, 2006). Drury et al. (1993) highlighted that there are different forms of budgeting; such as, Activity-Based Budgeting (ABB) and Activity-Based Costing (ABC). Ayvaz and Pehlivani (2011) have defined ABB as the budgeting of sources according to target activities. Horngren et al. (2009) explained ABC as an efficient method for improving a cost system. ABC is used to identify the cost of a product or service within the activity. Williams et al. (2010) defined ABC as an overhead allocation method that uses multiple overhead rates to track indirect costs by the activities that consume those costs.

The study conducted by Drury et al. (1993) concluded that a majority of the companies preferred to use ABB over ABC costing systems. However, most of the companies were using ABC as a supplementary method to the budgets, which were prepared under ABB. According to Alleyne and Weekes-Marshall (2011), the ABB is easy to use, as it focuses on the activities

within the process rather than the cost objects. Its primary purpose is to collect all costs within the process, which includes materials, setup time, number of hours worked and manufacturing overhead. ABB possesses more advantages compared to ABC, as it is more comprehensive and precise, since it gives a full breakdown of the costs to be expected.

Performance Evaluation

The most critical factor faced by these companies include the choice of measures to evaluate the performance of business units, especially in manufacturing companies (Ittner & Larcker, 1998). Management accounting should report all relevant information, which includes both financial and non-financial components related to the evaluation of business units' performance. Systems, which focus solely on financial components such as maximizing profit and return on capital investment projects, have been widely criticized by many researchers (Ittner et al., 1997; Ittner & Larcker, 1998; Kaplan & Norton, 1996). It may be due to accounting manipulation as they do not consider the cost of capital or non-financial measures, such as customer satisfaction. These shortcomings in performance evaluation have resulted in the creation of the Economic Valued Added (EVA) mechanism. This mechanism is used to incorporate the cost of capital into financial measures.

The EVA method has not gained much recognition among organizations; however, it may be considered as a useful tool for measuring performance in the future. A major shortcoming may result from determining the weighted average cost of capital that can be problematic. Financial measures are conventionally compared with performance in previous periods to identify whether there is an improvement or deterioration. The underlying assumption that the previous period is an appropriate comparator can lead to the entrenchment of problems and inefficiencies. To overcome this issue, benchmarking was introduced and was made popular as an organizational improvement tool by Xerox Company (Abdel-Kader & Luther, 2006). Benchmarking is based on identifying a "best practice" either internally or externally and then studying how it can be used to improve current and future performances.

Kaplan and Norton (1992) proposed the balance scorecard as a tool for measuring performance and managing the financial and non-financial aspects of the company by recognizing four different perspectives to measure performance and overcome shortcomings in performance evaluation of previous methods. The main purpose of the scorecard is to collect information for providing feedback to management for the purposes of strategic planning. When this type of management system is implemented, it allows the organization to stay focused on the company's objectives and goals. This process has proved to be useful to address inefficiencies which may occur after the establishment of appropriate methods to be used to improve performance.

Information for Decision Making

There is a general perception that management accounting provides relevant information for making decisions on a long-term or a short-term basis. Management accounting can also produce useful information to make financial management decisions such as payback period, accounting rate of return, and discounted cash flow methods. A majority of the companies employ the popular way of measuring return on investment by using the accounting rate of return to calculate the cash flow on major capital projects (Alleyne & Weekes-Marshall, 2011).

There are many different tools for making short term decisions such as Cost Volume Profit (CVP) analysis and customer profitability analysis. The CVP analysis is used in manufacturing companies to determine how many units of a particular product must be sold to breakeven. This principle also allows managers to see the behavior of the cost prior to making a solid commitment or a final decision on a specific order. LeBruto et al. (1997) stressed that CVP analysis appears to be a practice that is strongly used by manufacturing companies in the food industry.

Strategic Analysis

Strategic management accounting is an externally oriented approach, which focuses attention on the external environment, effect of competitors' decisions, and cost structures on current and future processes of the business (Guilding et al., 2000). Strategic management accounting was defined by

Roslender and Hart (2003) as the external approach, which focuses on the effect of competitors' decisions and cost structures on the future process of the business. Tomkins and Carr (1996) realized that this aspect of strategic management accounting does not carry any sound theoretical structure and its focus is internal, rather than external. Organizations in the manufacturing industry seem to place more emphasis on long term planning. It also suggests that there is an increased usage of management accounting practices among companies in the production of food (Abdel-Kader & Luther, 2006).

Methodology

This research was conducted on all the manufacturing companies listed on Amman Stock Exchange. The Jordanian Security Commission (JSC) stated that there are 34 manufacturing companies, operating in Jordan during the year 2017. The data was generated by a questionnaire, which was reviewed by professionals and academics for research instrument validity to obtain information on MAPs. This procedure facilitated access to a large number of respondents and provided sufficient data for statistical analysis. A letter was also sent to each company secretary of the companies to secure access and obtain the most appropriate persons for completing the questionnaire. In this letter, respondents were informed about the research.

The study covered only the manufacturing companies' headquarters, where the targeted respondents were expected to exist. The targeted respondents represented the parties that had the ability and knowledge to address it; therefore, the questionnaire was sent to the financial controller, production manager, and production supervisor of each company. These professionals confirmed the participation of respondents because these departments had qualified parties, which recognized the importance of management accounting techniques involved in the workplace.

Three companies opted to be removed from our sample leaving 31 companies, which were satisfactory for the purpose of conducting this research. Three questionnaires were distributed to each company to maintain an equal number of questionnaires distributed to all manufacturing institutions. 93 questionnaires were distributed in total. Ninety were received in a usable format; while, three were received from 1 company and they were not usable leaving 30 companies participating in this research. Telephone

calls were made after three weeks as follow-up reminders. One way to assess the potential for non-response bias is to compare data from late respondents to data from on-time respondents as in Oppenheim (1992) and Wallace and Mellor (1988). In this study, three responses were received following a reminder. Those late responses were not significantly different from other responses in any of the analysis reported later in this study.

The questionnaire comprised of three parts. The first part of the questionnaire dealt with demographic information, such sex and age of respondents, respondents' position, experience, and qualification. The second part requested information on the use of MAPs within the companies. These questions specifically focussed on the respondents' understanding of the term "Management Accounting Practices", the type of management information system being utilized, the type of MAP used, factors influencing their choice of practice, the level of success of the practices in meeting management objectives, and challenges or benefits from using these practices. The third part of the questionnaire listed MAPs under five categories.

The adoption of costing system practices or techniques was measured using an instrument based on the current management accounting literature (Zimmerman, 2000; Garrison & Noreen, 2003; Bjornenak & Mitchell, 1999; Bjornenak, 1997; Drury et al., 1993; Lucas, 1997; Pavlatos & Paggios, 2008). Budgeting contains seven items. The adoption of budgeting practices or techniques was measured using an instrument based on the current management accounting literature (Hansen & Mowen, 2002; Hilton, 2002; Atkinson et al., 2001; Drury, 2000; and Horngren et al., 2002). The adoption of performance evaluation practices or techniques was measured using an instrument based on the current management accounting literature (Ittner et al., 1997; Kaplan & Norton, 1996; Shields, 1997; Elnathan et al., 1996; McNair & Leibfriend, 1992; Sulaiman et al., 2004). The adoption of management accounting practices or techniques for short-term decision-making was measured using an instrument based on the current management accounting literature (Drury, 2000; Hansen & Mowen, 2002; Hilton, 2002; Needles & Crosson, 2002). Strategic Analysis contained eight items, which were measured using an instrument based on the current management accounting literature (Guilding et al., 2000; Abdel-Kader & Luther, 2006).

The respondents were asked to indicate the frequency of use of these practices using a five-point Likert-type scale indicating “never” and “Very often”. The respondents were also asked to rate the importance of each practice using either “Not Important”, “Moderately Important”, or “Important”. Descriptive statistics were used to provide the basis for discussion. The instrument for measuring each set of MAPs was chosen for three reasons;

1. Well documented and representative of the current management accounting literature
2. They have been developed and independently tested in subsequent studies
3. They measure key concepts discussed previously in the literature review section

RESULTS AND DISCUSSION

The findings are based on the analysis of 90 questionnaires, completed by three top managers of 30 manufacturing companies, which were considered satisfactory to participate. Respondents perceived that MAPs enable management to obtain relevant information for proper decision making and these practices are widely used by the participating companies and acknowledged by high proportion of the respondents. It has been found that several factors, such as the nature of the business, the type of information needed for making decisions, and the utilization of existing resources were important factors influencing the choice of MAPs used by the manufacturing companies.

Demographic Details

The positions of the respondents within the companies were the financial controller, production manager, and production supervisor of each company. The demographic details of the participants (89% males, 11% females) is depicted in Table 1. 97% of the respondents are over 25 year of age (mature), 50% were highly educated 50% (college degree), and 55% of them had a good working experience (over 11 years).

Table 1: Demographic Details

Measure	Items	Percentage (%)
Gender	Male	89%
	Female	11%
Age	Under 25 years	3%
	25 - 35 years	40%
	36 - 45 years	35%
	Above 46 years	22%
Education	College Diploma	37%
	Bachelors	35%
	Masters	15%
	Others	13%
Experience	Less than 5 years	8%
	6 – 10 years	37%
	11- 15 years	35%
	More than 16 years	20%

Understanding Management Accounting Terminology

Respondents were asked to explain what they understood from the phrase “management accounting practices” and indicated the factors that influenced the choice of MAPs used. They all generally agreed that MAPs aimsto obtain relevant information for helping management to make decisions on a daily basis and to enhance control functions. The respondents agreed that the MAPs were important for the success of the company and have given management proper tools to make sound business decisions. Moreover, all respondents agreed that the choice of MAPs was influenced by the nature of the business, the type of information needed for making decisions, and the utilization of existing resources.

The results show that MAPs enable management to obtain relevant information for proper decision making, which is consistent with the findings of Ittner and Larcker (2002). It has also been found that several factors influence the choice of MAPs used by the companies participating in this research which is consistent with the study of Otley’s (1980).

Costing System

In the questionnaire, respondents were asked to rate the usage and the importance of the following seven items of MAPs, which are related to the costing system category. The summary statistics of the percentage of respondents to the types of MAPs related to the costing system as shown in Panel A is displayed in Table 2.

Table 2: Management Accounting Practices and Techniques

How important? / How often used?									
Importance / Usage Practices or Techniques related to	NI	MI	I	S1	S2	S3	S4	S5	
Panel A: Costing system									
Separation of variable, incremental & fixed costs	14	37	49	10	12	19	24	35	
Using a plant- wide overhead rate	57	27	16	54	10	9	12	15	
Departmental or multiple plant- wide OH rates	50	35	15	50	15	22	5	8	
Activity- based costing	55	35	10	56	20	15	5	4	
Target costs	44	36	20	43	13	20	16	8	
The cost of quality	42	45	13	45	23	17	11	4	
Learning curve techniques	86	10	4	84	10	3	2	1	
Panel B: Budgeting									
Budgeting for planning	7	15	78	2	4	10	26	58	
Budgeting for controlling cost	5	20	75	4	4	14	28	50	
Activity- based budgeting	36	46	18	35	25	20	9	11	
Budgeting with "what if analysis"	19	48	33	17	15	37	22	9	
Flexible budgeting	25	42	33	29	17	22	20	12	
Zero- based budgeting	60	30	10	51	20	12	10	7	
Budgeting for long- term (strategic) plans	10	34	56	14	14	16	26	30	
Panel C: Performance evaluation									
Financial measures	4	16	80	5	7	9	23	56	
Non- financial measure(s) related to customers	7	43	50	12	16	20	25	27	
Non- financial measure(s) related to operation	20	33	47	15	17	18	22	28	
Non- financial measure(s) related to employees	37	53	10	43	22	25	7	3	
Economic value added or residual income	65	29	6	63	20	9	4	4	
Benchmarks	62	30	8	46	24	23	7	0	

Panel D: Information for decision making									
Cost volume profit analysis for major products	10	34	56	10	14	14	28	34	
Product profitability analysis	3	23	74	4	8	15	34	39	
Customer profitability analysis	7	32	61	7	10	22	29	32	
Stock control models	18	45	37	12	17	18	25	28	
Evaluation of major capital investment based on discounted cash flow method(s)	34	42	24	38	20	20	10	12	
Evaluation of major capital investment based on payback period and/ or accounting rate of return	10	44	46	12	17	17	20	34	
For evaluation of major capital investments, non-financial aspects are documented and reported	16	46	38	17	18	32	23	10	
Evaluation of the risk of major capital investment projects by using probability analysis or computer simulation	68	28	4	70	19	5	3	3	
Performing sensitivity "what if" analysis upon evaluating major capital investments projects	36	44	20	30	29	18	15	8	
Calculation and use of cost of capital in discounting cash flow for major capital investment evaluation	41	42	17	44	20	17	15	4	
Panel E: Strategic analysis									
Long-range forecasting	10	43	47	13	13	16	28	30	
Shareholder value	75	20	5	67	20	7	5	1	
Industry analysis	68	27	5	66	17	6	5	6	
Analysis of competitive position	20	38	42	8	16	16	25	35	
Value chain analysis	53	27	20	17	19	30	24	10	
Product life cycle analysis	64	28	8	59	20	15	4	2	
Possibilities of integration with suppliers'	50	35	15	48	15	25	8	4	
Analysis of competitors' strengths & weaknesses	16	34	50	4	14	19	27	36	

NI: Not Important = 1; MI: Moderately Important = 2; I: Important = 3. Based on five-point scale (S1: Never = 1; S2: Rarely = 2; S3: Sometimes = 3; S4: Often = 4; S5: Very often = 5).

It has been observed that 59% of the companies either “often” or “very often” distinguish between variable, incremental, and fixed costs for decision making purposes. The importance of this separation was acknowledged by 86% of the respondents rating it as either “moderately important” or “important”. There was a low usage of the four costing techniques (plant-wide, multiple plant-wide, ABC, and target costs) for allocation of overhead to cost objects (27%, 13%, 9%, and 24%, respectively). It indicated that overhead allocation does not appear to be implemented or applied

frequently. The cost of quality item is seen as important (58%), but it is not used frequently (15%). The last item, the learning curve which connects cost and behavior is neither seen to be important (14%) nor often used (3%). To structure the discussion of the results, descriptive statistics of the responses to each practice or technique are presented in Table 3. Moreover, the ranking of the 38 MAPs according to their usage by the companies are also presented in Table 3.

Table 3: Descriptive Statistics & Ranking of MAPs

Usage	Rating 1 or 2	Rating 4 or 5	Mean	Std. dev	Rank
Practices or Techniques related to					
Panel A: Costing system					
Separation of variable, incremental & fixed costs	22	59	3.19	1.21	9
Using a plant- wide overhead rate	64	27	2.70	1.30	20
Departmental or multiple plant- wide OH rates	65	13	2.09	1.17	28
Activity- based costing	76	9	1.95	1.15	32
Target costs	56	24	2.66	1.15	21
The cost of quality	68	15	2.10	1.38	27
Learning curve techniques	94	3	1.65	0.91	38
Panel B: Budgeting					
Budgeting for planning	6	84	4.32	0.90	1
Budgeting for controlling cost	8	78	4.10	1.15	3
Activity- based budgeting	61	20	2.34	1.31	24
Budgeting with "what if analysis"	32	31	2.83	1.22	19
Flexible budgeting	46	32	2.85	1.23	18
Zero- based budgeting	71	17	2.20	1.39	26
Budgeting for long- term (strategic) plans	28	56	3.15	1.25	11
Panel C: Performance evaluation					
Financial measures	12	79	4.20	0.95	2
Non- financial measure(s) related to customers	28	52	3.07	1.14	14
Non- financial measure(s) related to operation	32	50	3.05	1.16	15
Non- financial measure(s) related to employees	65	10	1.97	1.17	31
Economic value added or residual income	83	8	1.90	1.28	33
Benchmarks	70	7	1.88	1.13	34

Panel D: Information for decision making					
Cost volume profit analysis for major products	24	62	3.76	1.10	6
Product profitability analysis	12	73	4.08	1.17	4
Customer profitability analysis	17	61	3.70	1.15	7
Stock control models	29	53	3.08	1.14	13
Evaluation of major capital investment based on discounted cash flow method(s)	58	22	2.50	1.30	23
Evaluation of major capital investment based on payback period and/ or accounting rate of return	29	54	3.10	1.23	12
For evaluation of major capital investments, non-financial aspects are documented and reported	35	33	2.88	1.19	17
Evaluation of the risk of major capital investment projects by using probability analysis or computer simulation	89	4	1.70	1.14	37
Performing sensitivity "what if" analysis upon evaluating major capital investments projects	59	23	2.60	1.07	22
Calculation and use of cost of capital in discounting cash flow for major capital investment evaluation	64	19	2.23	1.38	25
Panel E: Strategic analysis					
Long-range forecasting	26	58	3.18	1.21	10
Shareholder value	87	5	1.79	1.28	36
Industry analysis	83	11	1.99	1.16	30
Analysis of competitive position	14	60	3.50	1.23	8
Value chain analysis	36	34	2.90	1.26	16
Product life cycle analysis	79	6	1.80	1.36	35
Possibilities of integration with suppliers'	62	12	2.08	1.16	29
Analysis of competitors' strengths & weaknesses	18	63	3.80	1.06	5

Based on five-point scale (S1: Never = 1; S2: Rarely = 2; S3: Sometimes = 3; S4: Often = 4; S5: Very often = 5), n 90

The mean scores ranged from 1.65 to 3.19, indicating a low and high degree of use of costing system practices by the companies. The distinction between variable, incremental, and fixed costs for decision making purposes had the highest mean score (3.19), indicating that this practice is widely used by 59% of the companies and was ranked 9. The other costing system practices had low mean scores indicating that these practices are not very frequently used by these manufacturing companies.

Budgeting

In the questionnaire, respondents were asked to rate the usage and importance of seven items of MAPs, which are related to the budgeting category including; Budgeting for planning, Budgeting for controlling cost, Activity-based budgeting, Budgeting with “what if analysis”, Flexible budgeting, Zero- based budgeting, and Budgeting for long- term (strategic) plans. The summary statistics of the percentage of respondents to the types of MAPs related to budgeting is as shown in Panel B, Table 2.

It is concluded that 84% and 78% of the companies either used “often” or “very often” budgeting for planning and controlling costs, respectively. It was considered either “important” or “moderately important” by more than 93% and 95% of the respondents. Also, 90% of the respondents rated budgeting as an important tool for long-term strategic planning. Thus, it can be concluded that the majority of the companies used budgeting for planning, controlling, and long-term strategic planning. The other three practices, which are related to budgeting (activity-based budgeting, budgeting with “what if analysis”, and flexible budgeting), were considered either “important” or “moderately important” by 64%, 81%, and 75% of the respondents but not very frequently used (20%, 21%, and 32%, respectively). Finally, zero-based budgeting is neither seen to be important (10%) nor often used (17%). Therefore, it seems that budgeting is more useful and valuable as compared to costing.

The descriptive statistics (means and standard deviations) of responses to each practice on budgeting are presented in Panel B, Table 3. The mean scores ranged from 2.20 to 4.32 indicating intermediate and a high degree of usage of budgeting practices by the companies. The following three budgeting practices; budgeting for planning, budgeting for controlling cost, and budgeting for long- term strategic planning had the highest mean scores, i.e. 4.32, 4.10, and 3.15, respectively. This indicates that these practices are widely used by 84%, 78%, and 56%, respectively by the companies, and were ranked No. 1, No. 3, and No. 11, respectively, according to their usage by these companies. The other budgeting practices had low mean scores indicating that these practices were not very frequently used by these manufacturing companies.

Performance Evaluation

The respondents were asked to rate the usage and the importance of the following six items of MAPs, which are related to performance evaluation category; Financial measures, Non-financial measure(s) related to customers, Non-financial measure(s) related to operation and innovation, Non-financial measure(s) related to employees, Economic value added or residual income, and Benchmarks. The summary statistics of the percentage of respondents to the types of MAPs related to performance evaluation is as shown in Panel C, Table 2. It is concluded that the majority of respondents reported either “often” or “very often” use of financial measures (79%) and it was acknowledged by 96% of respondents rating it as either “important” or “moderately important”. Two non-financial measures related to customers and to operations were clearly influential with 93% and 80% of respondents rating them as either “important” or “moderately important” and were used frequently (52% and 50%) by companies. The non-financial measure related to employees was considered important (63%) but not very frequently used (3%). The economic value added and benchmarking were neither seen to be important (6% and 8%, respectively) nor often used (8% and 7%) by the companies. The descriptive statistics (means and standard deviations) of responses to each practice on performance evaluation is presented in Panel C, Table 3.

The mean scores ranged from 1.88 to 4.20, indicating low and high degree of use of performance evaluation practices by the companies. The following three performance evaluation practices financial measures, non-financial measures related to customers, and non-financial measures related to operation and innovation had the highest mean scores (4.20, 3.07, and 3.05, respectively). This indicates that these practices were widely used by 79%, 52%, and 50%, respectively by the companies, and were ranked No. 2, No. 14, and No. 15, respectively, according to their usage by these companies. The other performance evaluation practices had low mean scores indicating that these practices were not very frequently used by these manufacturing companies.

Information for Decision Making

In the questionnaire, respondents were asked to rate the usage and the importance of the following ten items of MAPs which are related to information for decision making category;

1. Cost-volume-profit analysis for major products
2. Product profitability analysis
3. Customer profitability analysis
4. Stock control models
5. Evaluation of major capital investment based on discounted cash flow method(s)
6. Evaluation of major capital investment based on payback period and/or accounting rate of return
7. For the evaluation of major capital investments, non-financial aspects are documented and reported
8. Evaluating the risk of major capital investment projects by using a profitability analysis or computer simulation
9. Performing sensitivity “what if” analysis when evaluating major capital investments projects
10. Calculation and use of cost of capital in discounting cash flow for major capital investment evaluation. The summary statistics of the percentage of respondents to the types of MAPs related to information for decision making are shown in Panel D, Table 2

The respondents generally agreed that MAPs aimed to obtain relevant information to help management make decisions. Management accounting can provide relevant information for short-term decisions, which allow accountants to produce information to use the CVP analysis, product profitability analysis, customer profitability analysis, and stock control models. Finally, management accounting can provide relevant information for risk analysis such as probability analysis and computer simulation.

For short-term decisions, it can be inferred that 62% of the respondents either “often” or “very often” used the CVP analysis. It was considered to be “important” or “moderately important” by 90% of respondents, which is consistent with the study conducted by LeBruto et al. (1997). Product profitability analysis, customer profitability analysis, and stock control

models were either “often” or “very often” used by the companies (73%, 61%, and 53%, respectively). Moreover, they were acknowledged by 97%, 93%, and 82%, respectively of respondents rating them as either “important” or “moderately important”.

For capital investment decisions, the traditional accounting measures such as payback period and accounting rate of return were either “often” or “very often” used by 54% of the companies to evaluate major capital projects. This was acknowledged by 90% of the respondents rating them as either “important” or “moderately important”. On the other hand, the discounted cash flow method such as internal rate of return was only used by 22% of these companies. Regarding the non-financial factors related to capital projects which were perceived to be either “important” or “moderately important” by 84% of the respondents and only 33% of companies reported these factors as either “often” or “very often”.

The following five practices related to relevant information for decision making (product profitability analysis, cost-volume-profit analysis, customer profitability analysis, evaluation of major capital investment based on payback period and/ or accounting rate of return, and stock control models) had the highest mean scores (4.08, 3.76, 3.70, 3.10, and 3.08, respectively). This indicates that these practices were widely used by 73%, 62%, 61%, 54%, and 53%, respectively of these companies, and were ranked (No. 4, No. 6, No. 7, No. 12 and No. 13, respectively) according to their usage by these companies.

Strategic Analysis

In the questionnaire, respondents were asked to rate the usage and the importance of the following eight items of MAPs, which are related to the strategic analysis category. The summary statistics of respondents to the types of MAPs related to strategic analysis are shown in Panel E, Table 2. 63%, 60%, and 58% of the companies either “often” or “very often” used these three practices, respectively: Analysis of competitors’ strengths and weaknesses, Analysis of competitive position, and Long-range forecasting). The other strategic practices (Shareholder value, Industry analysis, Value chain analysis, and Product life cycle analysis) were considered either “important” or “moderately important” by 25%, 32%, 47%, and 36% of

the respondents but not very frequently used 6%, 11%, 34%, and 6% by the companies.

Three practices which are related to budgeting (budgeting for planning, budgeting for controlling costs, and budgeting for long-term strategic planning) were among the top fifteen practices as shown in Table 4. These three budgeting practices are widely used by 84%, 78%, and 56% of the companies and acknowledged by 93%, 95%, and 90% of respondents, respectively. These results are consistent with previous management accounting research findings conducted by Drury et al. (1993), Longden (2001), and Abdel-Kader and Luther (2006). These three performance evaluation practices were widely used by 79%, 52%, and 50% of the companies and acknowledged by 96%, 93%, and 80% of respondents, respectively. These findings mean that management accountants should report all relevant information which includes both financial and non-financial components related to the evaluation of the performance of manufacturing companies. These results are consistent with previous management accounting research findings which considered both financial and non-financial information as important tools for evaluating the performance of an organization (Ittner et al., 1997; Ittner & Larcker, 1998; Kaplan & Norton, 1992; Abdel-Kader & Luther, 2006).

Five practices related to the relevant information for decision making (product profitability analysis, CVP analysis, customer profitability analysis, evaluation of major capital investment based on accounting rate of return, and stock control models) were among the top fifteen practices (Table 4). These five practices were related to the relevant information for decision making which were widely used by 73%, 62%, 61%, 54%, and 53% of the companies and acknowledged by 97%, 90%, 93%, 90%, and 82% of respondents, respectively. These findings are consistent with previous management accounting research, which have a general perception that management accounting provides relevant information for decision making in the long term such as accounting rate of return or short-term basis such as the CVP analysis (Lebruto et al., 1997; Abdel-Kader & Luther, 2006; Horngren et al., 2009; Alley & Weekes-Marshall, 2011).

In the last MAPs panel (strategic analysis), there are three practices which are related to strategic management accounting practices (analysis of

competitors' strengths and weaknesses, analysis of competitive position, and long-range forecasting). These are among the top fifteen practices as shown in Table 4 that were widely used and were ranked 5, 8, and 10, respectively. These three practices relate to strategic management accounting practices, which were widely used by 63%, 60%, and 58% of the companies and were acknowledged by 84%, 80%, and 90% of respondents, respectively. These findings are consistent with strategic management accounting research which seems to place more emphasis on the external environment and on long term planning in manufacturing companies (Abdel-Kader & Luther, 2006; and Alley & Weekes-Marshall, 2011).

The MAPs that are widely used in manufacturing companies include budgeting for planning, performance evaluation based on financial measures, budgeting for controlling costs, and product profitability analysis. These are traditional management accounting practices in the accounting literature. These practices were ranked very high No. 1 to No. 4, respectively in terms of their adoption and importance. These findings are consistent with previous management accounting research Dugdale (1994); Chenhall and Langfield-Smith (1998); Luther and Longden (2001); Alleyne and Weekes-Marshall (2011), which confirm that a majority of the companies base their decisions primarily on financial performance measures and budgeting practices that have been used for planning and controlling costs. These results were also in conformity with Abdel-Kader and Luther (2006) research as his findings concluded that traditional management accounting is very much alive and well. The study has identified 15 MAPs that were widely used by manufacturing companies that participated in the research and were acknowledged by high proportion of respondents as presented in Table 4. These top fifteen MAPs are listed in Table 5, as categorized on the research methodology section.

Table 4: Top 15 Management Accounting Practices Frequently Used

Usage	Rating 1 or 2	Rating 4 or 5	Mean	Std. dev	Rank
Practices or Techniques related to:					Panel
Budgeting for planning	6	84	4.32	0.90	1 B
Financial measures	12	79	4.20	0.95	2 C
Budgeting for controlling cost	8	78	4.10	1.15	3 B
Product profitability analysis	12	73	4.08	1.17	4 D
Analysis of competitors' strengths & weaknesses	18	63	3.80	1.06	5 E
Cost volume profit analysis for major products	24	62	3.76	1.10	6 D
Customer profitability analysis	17	61	3.70	1.15	7 D
Analysis of competitive position	14	60	3.50	1.23	8 E
Separation of variable, incremental, & fixed costs	22	59	3.19	1.21	9 A
Long-range forecasting	26	58	3.18	1.21	10 E
Budgeting for long- term (strategic) plans	28	56	3.15	1.25	11 B
Evaluation of major capital investment based on payback period and/or accounting rate of return	29	54	3.10	1.23	12 D
Stock control models	29	53	3.08	1.14	13 D
Non- financial measure(s) related to customers	28	52	3.07	1.14	14 C
Non- financial measure(s) related to operation	32	50	3.05	1.16	15 C

Note: Based on five-point scale (S1: Never = 1; S2: Rarely = 2; S3: Sometimes = 3; S4: Often = 4; S5: Very often = 5), n 90

Table 5: Categorized Top MAPs Used Under Each Panel

Usage	Rating 1 or 2	Rating 4 or 5	Mean	Std. dev	Rank
Practices or Techniques related to					
Panel A: Costing system					
Separation of variable, incremental & fixed costs	22	59	3.19	1.21	9
Panel B: Budgeting					
Budgeting for planning	6	84	4.32	0.90	1
Budgeting for controlling cost	8	78	4.10	1.15	3
Budgeting for long- term (strategic) plans	28	56	3.15	1.25	11
Panel C: Performance evaluation					
Financial measures	12	79	4.20	0.95	2
Non- financial measure(s) related to customers	28	52	3.07	1.14	14
Non- financial measure(s) related to operation	32	50	3.05	1.16	15
Panel D: Information for decision making					
Product profitability analysis	12	73	4.08	1.17	4
Cost volume profit analysis for major products	24	62	3.76	1.10	6
Customer profitability analysis	17	61	3.70	1.15	7
Evaluation of major capital investment based on payback period and/ or accounting rate of return	29	54	3.10	1.23	12
Stock control models	29	53	3.08	1.14	13
Panel E: Strategic analysis					
Analysis of competitors' strengths & weaknesses	18	63	3.80	1.06	5
Analysis of competitive position	14	60	3.50	1.23	8
Long-range forecasting	26	58	3.18	1.21	10

Based on five-point scale (S1: Never = 1; S2: Rarely = 2; S3: Sometimes = 3; S4: Often = 4; S5: Very often = 5), n 90

CONCLUSION

The results indicate that budgeting was widely used for planning, controlling costs, and for long-term strategic planning. The study found that both financial and non-financial information are important tools for evaluating the performance of manufacturing companies. It has also been found that management accounting provides relevant information for making decisions on a short-term basis such as product profitability analysis and CVP analysis, or on a long-term basis to be able to evaluate major capital investment. As for the strategic management accounting practices, the study concludes that manufacturing companies should place more emphasis on the external environment such as analysis of competitors' strengths and weaknesses, as well as long term planning. The study has recognized four MAPs, which are widely used and are considered important in manufacturing companies including budgeting for planning, performance evaluation based on financial measures, budgeting for controlling costs, and product profitability analysis.

Future Implications

The findings are important for managers as it highlights the most widely used MAPs in manufacturing companies operating in small developing countries, such as Jordan. Management accountants as well as interested parties can use the findings to fully understand how MAPs can help improve business performance in companies within developing countries.

Limitations

This study used a questionnaire to obtain information on MAPs and treated all manufacturing companies as one segment, which may limit the generalizability of the results to the industry. Future research may use a qualitative approach (a case study with face-to-face contact), since such a topic requires opinions and feelings and consider management accounting as a social practice that requires detailed case studies.

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APPENDIX

The Questionnaire

Section 1: Demographic information

The aim of this section is to gather background information

1. Sex
 - a. Male
 - b. Female

2. Age
 - a. under 25 years
 - b. 25-35 years
 - c. 36-45 years
 - d. over 46 years

3. Education
 - a. College diploma
 - b. Bachelor's degree
 - c. Master's Degree
 - d. Others

4. Experience
 - a. Less than 5 years
 - b. 6-10 years
 - c. 11-15 years
 - d. over 16 Years

Section 2: Information on the MAPs uses within your company

Please feel free to use the space below to make any comments related to the following statements:

- Level of understanding of the MAPs
- The type of management information being utilized
- The type of MAP uses
- Factors influencing companies' choice of practice

Section 3: Management Accounting Practices and Techniques

Please indicate the relative possible importance and usage of each item below by choosing the appropriate number on the scale

Notes: NI: Not Important = 1; MI: Moderately Important = 2; I: Important = 3. Based on five-point scale (S1: Never = 1; S2: Rarely = 2; S3: Sometimes = 3; S4: Often = 4; S5: Very often = 5).