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ACCOUNTING AND MARKETING VIEWS ON THE USE AND IMPORTANCE OF MANAGEMENT ACCOUNTING TECHNIQUES AND THEIR EFFECTS ON ORGANISATIONAL PERFORMANCE

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ABSTRACT

This paper analyses the frequency of use and perceived importance of selected management accounting techniques as reported by senior accounting and marketing executives of large Canadian companies. For both groups, traditional techniques are more commonly used and considered more important, whereas contemporary techniques are noticeably less widely used and considered less important. There is a general agreement between the two groups on the techniques most frequently used and having the highest perceived importance. However, there are a number of techniques for which the frequency of use and perceived importance differ significantly between them. No strong relationships between management accounting techniques and organisational performance were found; however, the evidence suggests that use of traditional techniques may have more effect on performance than use of contemporary techniques.

INTRODUCTION

There has been relatively little research on the use of management accounting information and techniques by marketers and the interaction of the accounting and marketing functions. Foster (as referred to in Jeffries, 1995, p. 18) urged accountants to 'get a grip on marketing' as he feels that accounting has had a 'myopic focus on manufacturing'. A number of articles in the accounting literature have highlighted the lack of research in this area (Foster and Gupta, 1994;

Schoch and Teoh, 1995). Earlier research on the accounting and marketing interface (Ratnatunga, Hooley and Pike, 1990) identified two particular problem areas. One was accountants' lack of knowledge and understanding of the information needed for marketing decision making, resulting at least in part from accounting's focus on production. The other was a general dissatisfaction with the quality of accounting information provided for marketing decision making and control. Examination of the use of traditional management accounting techniques in one Australian industry showed that only a few of these were in regular use and they appeared not to be used more by better performing companies (Ratnatunga, Pike and Hooley, 1988). A more recent study found that the use of traditional management accounting techniques dominates the use of new techniques, with the latter supplementing, rather than replacing, the former (Pierce and O'Dea, 1998b). It was also found that the accounting information preparers' perspective is that marketing managers are more satisfied with the quality of accounting information than production managers, and that the focus still appears to be on traditional techniques, with relatively low use of some of these (Pierce and O'Dea, 1998a). This is consistent with earlier studies that found relatively little use of contemporary management accounting techniques (Bromwich and Bhimani, 1994; Clarke, 1996; Drury, Braund and Tayles, 1993; O'Dea and Clarke, 1994). Shields (1998) suggests that in Europe more changes are occurring in management accounting techniques than in the purposes and styles of using them. Chenhall and Langfield-Smith (1998a) contend that the benefits obtained from traditional management accounting techniques are higher than those of new techniques based on a survey of Australian manufacturing firms.

The situation is not much different on the marketing front as reported by Hutt and Speh (1984, p. 53) who state, 'the marketing literature has given little attention to the web of interrelationships that exist between marketing and the other business functions. This is especially surprising, given the pivotal role that functional interdependence or integrated effort inevitably assumes in discussions of the marketing concept'. Similar claims have also been made elsewhere in the marketing literature (Wind and Robertson, 1983). These assertions suggest that a research study investigating the interaction of the marketing and accounting/finance (henceforth, accounting for simplicity) functions may provide useful results.

In the accounting literature, there has been discussion for the past 5 to 10 years of breaking down the functional 'silos' that have developed over the years and are seen as impeding organisational improvement in the 'new economy' (Elliott, 1992, pp. 64-66). There has also been much discussion of the need for managers from different functions to work in teams in order to improve organisational performance. Chenhall and Langfield-Smith (1998b) employed a systems approach, using cluster analysis, to examine the association between performance and management accounting techniques used. These developments have resulted in modification of the mission of various professional accounting bodies. For example, the Society of Management Accountants of Canada has recently offered professional development programmes on *Management Accounting* and *Strategic Thinking and Marketing and Corporate Strategy*. The Society has also modified its professional programme of studies to include both advanced management and management accounting content so that certified management accountants are prepared to participate in the strategic as well as tactical decisions. In the USA, a research project of the Institute of Management Accountants 'documents the transformation of management accountants from scorekeepers to business partners' (Siegel and Sorenson, 1999, p. 4). The American Institute of Certified Public Accountants has taken similar steps toward change by endorsing a new competency framework for accounting education, and has included marketing among the needed broad business perspective skills (Malone and Hyman, 2000).

The interaction between the accounting and marketing functions is influenced very much by the nature and usefulness of the information provided and decisions made, which in turn depend upon the techniques used for generating and using the information. As the basis for further research on how management accounting techniques and information can facilitate the tasks of marketing, it is necessary to obtain a better understanding of the views of the two interacting groups. The results reported here are part of a larger study on the interaction of accounting and marketing designed to obtain information on accounting techniques, identify the determinants of the degree of interaction between the accounting and marketing functions, and measure the influence of these factors on organisational performance.

In this paper, the primary interest is in the frequency of use and perceived importance of management accounting techniques from the perspectives of both accounting and marketing executives. Information on the similarities and differences in the views of these two groups should be useful, given the emphasis in the academic and professional accounting literature on contemporary management accounting techniques that are asserted to have the potential to improve organisational performance. A related objective is to determine whether there is any relationship between management accounting techniques and organisational performance.

OVERVIEW OF THE STUDY

Organisational performance is the result of many factors within an organisation. In the past, there has been much study of management accounting in manufacturing settings (Foster, 1995). Given the decline in relative importance of the manufacturing sector, research on the interaction of accounting with other functional areas is now warranted. The particular focus of this paper is the interaction of the accounting and marketing functions. This is an area of increasing importance in modern business organisations that has not been the subject of much research. The interaction with marketing seems particularly relevant given the increasing effort in, and budgetary allocations to, the marketing function. Clearly this interaction affects not only the operation of these two functions, but also overall organisational performance. In this paper, the views of senior executives in the accounting and marketing functions are explored with respect to a set of 42 traditional and contemporary management accounting techniques. In particular, their responses as to the frequency of use and perceived importance of these techniques are examined, together with the question of whether the use of particular techniques affects organisational performance.

The balance of this paper is organised as follows: First, the particular research questions to be addressed are identified. This is followed by a discussion of the methodology employed in the study and a description of the survey instrument used to gather data. The frequency of use and perceived importance of the 42 management accounting techniques are then presented and discussed. Next, cluster analysis is used to separate the companies in the sample into low and high performers. Information on these two clusters is used to reach conclusions about the relationship between management accounting techniques and organisational performance. Finally, some concluding remarks are presented.

RESEARCH QUESTIONS

As stated above, the views of senior executives in the accounting and marketing functions about a set of 42 traditional and contemporary management accounting techniques are explored, as is the relationship of these to organisational performance. The specific research questions to be examined are presented here together with a discussion of expectations.

Research Question 1

Do the accounting and marketing executives agree on the frequency of use and on the perceived importance of the management accounting techniques?

There is little, if any, theory or previous research that would form the basis for predictions in this area. However, anecdotal evidence suggests that accounting and marketing personnel would have different views on both the frequency of use and perceived importance of management accounting techniques, and that some of these differences would be significant. The expectation is that the accounting executives would be more likely to use the techniques that they feel are important because they have a more homogeneous background of education and professional training, and are usually in control of providing much of the information required for decision making through design and operation of the management information systems. A study by Ratnatunga et al. (1990) found that marketers think accountants do not understand their needs, while accountants feel marketers do not understand accounting methods and are unable to specify their information requirements. Therefore, although marketing executives are more familiar with the decisions relevant for marketing, they may be prevented from using their preferred decision methods because they do not receive the required inputs from the accounting function.

From the content of the normal academic and professional education programmes for accountants, it seems likely that accountants would have familiarity and comfort with traditional management accounting techniques and probably rely on them more. However, given the extensive discussion of contemporary techniques in the accounting literature and their more recent introduction into educational programmes, it seems reasonable to expect that accounting personnel have positive opinions of them.

Research Question 2

Is organisational performance related to the frequency of use and perceived importance of the 42 management accounting techniques?

The impact of global competition has fuelled the interest of both researchers and managers in investigating determinants of better performance in organisations. This drive for efficiency and effectiveness in the global economy has gone beyond an examination of traditional production costs to evaluation of the entire firm and its activities across specific functional areas. Given that the arguments for management accounting techniques are presented in terms of their benefits for management planning and control, it seems reasonable to expect at least some management accounting techniques to be positively related to organisational performance. Therefore, whether there are differences between the more effective firms and others in terms of their decision processes is explored. Specifically, do accounting and marketing managers' use of the 42 management accounting techniques correlate with the relative performance of their firms? Are there any preferences for contemporary techniques compared to the traditional techniques? Regardless of the traditional versus contemporary nature of the accounting techniques, do managers in high performance firms prefer certain techniques over others?

METHODOLOGY

This study is based on information obtained from senior accounting and marketing executives of large Canadian companies. The population from which the sample is drawn is Canadian companies listed in commercially available databases accessed through the Society of Management Accountants of Ontario. In order to make the final sample representative of the larger firms, while keeping costs of sampling reasonable, the sampling frame was restricted to the 1,000 largest publicly-owned companies and the 300 largest privately-owned companies, based on sales revenues. For the publicly-owned companies, the 500 largest companies plus every second company of the next 500 largest companies were contacted. All 300 largest privately-owned companies were contacted.

The first step in the sampling procedure was to send a letter to the most senior executive of the company, i.e. the individual identified as president, chief executive officer or chairman, depending upon the information available and titles held. The letter asked this individual to agree to have the company participate in the overall study of the interaction of accounting and marketing. Responses were received from approximately 75 per cent of the companies. The letter asked those respondents who declined to participate to indicate their reasons. As might be expected, a number of companies declined to participate because of company policy or organisational changes. More interestingly, approximately half of these companies were unable to participate because they did not have the organisational structure required for the study. In particular, most of these companies are in the resource industry (e.g. mining companies) and do not have a formal marketing function because of the nature of their product markets.

The senior executive of each organisation agreeing to participate in the study was asked to identify a senior executive in each of the accounting and marketing functions who would be the actual respondents. The request was for the executive to be at the vice-president level so that the views given would represent the organisation as a whole. A copy of the survey instrument, described in overview below, was sent to each of the two individuals in each company. Obtaining completed surveys from both executives in each company is important given that some of the planned analyses require responses from matched groups to ensure the validity of conclusions. Normal follow-up procedures were employed to encourage the individuals to complete and return the questionnaire. The results presented in this paper are based on a final sample of 85 companies for which completed surveys were received from both a senior accounting executive and a senior marketing executive in each company. These matched pairs of responses to the survey instrument constitute approximately 23 per cent, and appear to be representative, of the eligible companies.

As a test for non-response bias, the mean responses of the first 45 respondents were compared with those of the remaining 40 respondents for questions on the 42 management accounting techniques. There were no significant differences between these two groups regarding frequency of use or perceived importance. Therefore, it can be concluded that the sample does not have non-response bias.

SURVEY INSTRUMENT

The survey instrument had a total of 149 questions, covering various dimensions in addition to the responses relating to 42 management accounting techniques and eight measures of organisational performance reported here. The management accounting techniques were selected in the following way. First, a number of standard management accounting texts were surveyed to obtain a comprehensive list of techniques. Next, the *Management Accountants' Handbook* prepared by the Society of Management Accountants of Ontario was reviewed to supplement this listing as necessary with techniques stressed by a professional management accounting body but not included in texts. A review of current literature was also carried out in order to identify contemporary techniques not listed in other sources. The views of staff at the Society of Management Accountants of Ontario were also sought. Finally, this comprehensive list was reviewed and condensed to include 42 management accounting techniques using two criteria. The first was to include the most significant techniques, while the second was to make the total number reasonably concise so as to ensure participants would complete the survey instrument. The management accounting techniques included in the study are given in the left-hand column of **Table 1**.

Participants were asked to provide responses to two questions relating to each of the 42 management accounting techniques listed in **Table 1**. First, they were asked to provide their rating of the frequency of use of each technique in their organisation, using a 0 to 5 Likert scale where the choices allowed ranged from 0 = 'not used' to 5 = 'often used'. Second, they were asked to rate their perception of the importance of each technique, using a 1 to 10 Likert scale where the choices allowed ranged from 1 = 'lowest importance' to 10 = 'highest importance'.

An analysis of the relationship between management accounting techniques and organisational performance using two approaches is also provided. The first measure of performance is obtained using a set of questions on organisational performance. The respondents were asked to provide two sets of assessments of how their organisations have done over the previous 24 months in the areas of sales volume, market share, profitability and customer satisfaction. One assessment of these four variables was made relative to the performance of the organisation's major competitors, while the second assessment was made relative to the organisation's own objectives. These assessments were both made on a 1 to 5 Likert scale where the choices ranged from 1 = 'much worse' to 5 = 'much better'. It was felt that this would provide a better indicator of high and low performers because it goes beyond a single financial measure. Kaplan and Norton (1996) have suggested that organisations should measure performance using a balanced portfolio of financial and non-financial measures. It is posited that this approach should help to guide and monitor an organisation's performance relative to its strategic objectives better, and so improve its overall performance. The self-reported measures used here provided a broad set of internal and external measures that reflect at least two of Kaplan and Norton's (1996) recommended performance measurement areas. This approach to evaluating performance within a group of diverse respondents has been employed successfully in the sales management literature (Cravens, Ingram, LaForge and Young, 1993; Barker, 1999). Its most important advantage is avoiding the use of widely varying absolute figures that make comparisons across groups extremely difficult as a result of differences in industry standards within a sample. The second approach to measuring organisational performance is based on the financial results achieved. This was measured by using return on assets for the 1996 fiscal year, which was obtained from the commercially available *Financial Post* database.

DISCUSSION OF RESULTS

The mean responses to the two sets of questions for the 42 management accounting techniques are shown in **Table 1** for the accounting and marketing executives. The mean responses for frequency of use cover almost the full 0 to 5 scale (0.56 to 4.61 for accounting executives and 0.72 to 4.35 for marketing executives). The mean responses for perceived importance also cover almost the full 1 to 10 scale (2.09 to 8.80 for accounting executives and 2.13 to 8.28 for marketing executives). These results show that there is significant variation in the frequency of use and perceived importance of the 42 management accounting techniques considered in this study.

Table 1: Mean Responses for Management Accounting Techniques by Accounting and Marketing Executives

	Frequency[1]			Importance[2]		
	Actg	Signif[3]	Mktg	Actg	Signif[3]	Mktg
1. Return on investment	3.27	ns	3.08	7.08	ns	6.83
2. Sales volume reports	4.61	0.005	4.35	8.49	0.048	7.95
3. Market share reports	2.90	0.007	3.36	6.12	0.034	6.84
4. Gross margin reports	3.91	0.004	3.44	7.62	ns	7.14
5. Net profit reports	4.40	0.000	3.64	8.48	0.039	7.90
6. Contribution margin reports	3.52	ns	3.15	7.02	ns	7.33
7. Business unit cost reports	3.91	0.000	3.36	7.98	0.000	6.88
8. Product cost reports	2.78	ns	2.82	6.27	ns	6.54
9. Marketing cost reports	2.62	0.005	3.17	5.89	0.007	6.57
10. Distribution cost reports	2.16	ns	2.26	4.61	0.000	5.98
11. Sales force cost reports	2.32	ns	2.51	5.00	0.001	5.94
12. Residual income analysis	1.15	ns	1.11	3.00	ns	2.98
13. Business process re-engineering	2.22	0.048	1.88	5.35	0.000	3.89
14. Activity based management	1.21	0.020	1.63	4.20	ns	4.28
15. Just-in-time management	1.41	ns	1.46	4.02	ns	3.73
16. Total quality management	1.86	ns	1.91	5.42	0.050	7.61
17. Statistical quality control	1.67	ns	1.62	4.67	ns	4.16
18. Cost of quality	1.17	ns	1.05	4.00	0.095	4.47
19. EVA analysis	1.84	ns	1.82	5.17	0.067	5.47
20. Share holder value analysis	2.22	0.050	1.80	5.83	0.059	5.14
21. Strategic cost management	1.93	ns	1.71	4.92	ns	4.59

Table 1 (continued)

22. Sales forecasting	4.32	0.080	4.12	8.16	ns	8.28
23. Rolling budgeting	2.68	ns	2.40	6.72	0.010	5.92
24. Story-boarding	0.90	0.010	1.54	3.13	ns	3.19
25. Theory of constraints	0.56	ns	0.72	2.09	ns	2.13
26. Time-based management	0.93	0.090	1.17	3.00	ns	3.10
27. Strategic partner-ships	2.57	ns	2.74	6.62	ns	6.37
28. Full costing/pricing	2.70	ns	2.77	6.41	ns	6.57
29. Variable costing/pricing	3.32	0.020	2.85	7.22	ns	7.18
30. Activity based costing	1.59	ns	1.78	5.18	0.100	4.64
31. Allocation of service dept costs	3.20	0.000	2.52	5.97	0.100	5.48
32. Graphical cost be-haviour analysis	1.46	ns	1.34	4.43	0.002	3.63
33. Statistical cost be-haviour analysis	1.26	ns	1.15	4.26	0.000	3.32
34. Break-even analysis	2.90	0.060	3.32	6.24	0.007	6.96
35. Capital budgeting	4.10	0.005	3.67	7.91	0.056	7.37
36. Master budgeting	3.07	ns	2.78	7.35	0.010	6.08
37. Flexible budgeting	1.88	0.038	1.44	5.30	0.041	4.66
38 Zero-based budget-ing	1.76	ns	1.75	5.55	0.027	4.86
39. Activity based budgeting	1.38	0.000	2.32	4.87	0.016	5.68
40. Variance analysis	4.25	0.000	3.28	8.80	0.000	6.94
41. Target costing	1.35	0.008	1.92	4.14	0.023	4.81
42. Life cycle costing	1.09	0.049	1.47	3.90	ns	4.08

[1.] Frequency of use scale: 0 = not used; 1 = rarely used to 5 = often used
[2.] Perceived importance scale: 1 = lowest importance to 10 = highest importance
[3.] Signif = significance level using t test; ns = not significant

Research Question 1

Do the accounting and marketing executives agree on the frequency of use and the perceived importance of the management accounting techniques?

Firstly, the results for the set of management accounting techniques as a whole were examined. The mean responses for frequency of use by the two groups of executives differ by less than one half unit on the five point scale for the majority of techniques. The Pearson correlation coefficient of the mean responses of the accounting and marketing executives for frequency of use is 0.938, which is highly significant. The mean responses of the two groups of executives for perceived importance differ by less than one unit on the ten point scale for the majority of techniques and the Pearson correlation coefficient between them is 0.887, which is also highly significant. These results suggest that, for the set of management accounting techniques as a whole, the accounting and marketing executives are in general agreement on their frequency of use and do not have seriously conflicting views on their perceived importance. This global analysis suggests that there is more harmony between the two groups of executives than had been anticipated. An explanation for this may be that the study was designed to obtain the views of senior executives. They are likely to have more similar ratings of the techniques because they have a corporate rather than functional view of the organisation and its needs, and have resolved differences of opinion over their careers. It would be interesting to study accounting and marketing staff at lower management levels to see whether the level of consensus is lower.

Next, the results for individual management accounting techniques were examined. The results in the 'significance' columns of **Table 1** (columns three and six) show that the mean responses for the accounting and marketing executives differ at a significance level of 0.10 or less for 21 (50 per cent) of the management accounting techniques on frequency of use and 25 (60 per cent) on perceived importance. In each case, the group reporting the higher mean response for frequency of use has a higher mean response for perceived importance. Use of the more stringent significance level of 0.01 or less to select the management accounting techniques with differences between the accounting and marketing executives yields 12 techniques that differ for frequency of use and 11 that differ for perceived importance. For the techniques with a significant difference at either the 0.10 or the 0.01 level, about half have higher mean responses from the accounting executives (e.g. sales volume reports and gross margin reports), and about half have higher mean responses from the marketing executives (e.g. market share reports and marketing cost reports).

Even though there seems to be general agreement when the techniques as a whole are considered, there are statistically significant differences between the two groups for particular management accounting techniques. In general, the group with the higher mean response for a particular technique is consistent with the *a priori* expectations. For example, the mean responses by marketing executives for frequency of use and perceived importance are higher for marketing cost reports, whereas both responses for accounting executives are higher for variance analysis. But there are some exceptions to expectations. For example, it is not clear why there is a difference between the two groups for business unit cost reports as this should be an area of common concern. In addition, an explanation for the higher mean responses to activity based budgeting by the marketing executives is not obvious. Interestingly, this focus of the marketing executives on activity is reinforced, although weakly, by the mean responses for activity based management and activity based costing. This result is surprising given the emphasis in accounting on activity based costing and related techniques since the 1980s.

As an extension of the above analyses, the mean responses for frequency of use and perceived importance for each group of executives are compared. The mean responses for the accounting executives have a Pearson correlation coefficient of 0.962, which is highly significant, and the mean responses for the marketing executives have a Pearson correlation coefficient of 0.915, which is also highly significant. Thus, it can be concluded that both groups of executives are, in general, using the management accounting techniques that they consider important. The correlation of frequency of use and perceived importance is noticeably higher for the accounting executives than for the marketing executives, which is consistent with the expectations outlined above.

The techniques for which the mean responses differ at the 0.05 level or lower for both frequency of use and perceived importance are now examined. These are listed in **Table 2**. Accounting executives gave higher mean responses for sales volume reports, net profit reports, business unit cost reports, business process re-engineering, flexible budgeting and variance analysis. Marketing executives gave higher mean responses for market share reports, marketing cost reports, activity based budgeting and target costing. As noted above, the group with the higher mean response in each case is generally in accordance with *a priori* expectations. There are only three management accounting techniques where the differences in both the frequency of use and the perceived importance are statistically significant at less than the 0.01 level. The mean response for variance analysis is higher for accounting executives, while the mean response for marketing cost reports is higher for marketing executives, in accordance with expectations. The significantly higher mean response for business unit cost reports by accounting executives is unexpected, as mentioned above, and may have implications for business management by marketing executives.

Table 2: Management Accounting Techniques with Differences between Accounting and Marketing Executives at 0.05 Level or Lower

Techniques	Frequency[1]			Importance[2]		
	Actg	Signif[3]	Mktg	Actg	Signif[3]	Mktg
2. Sales volume reports	4.61	0.005	4.35	8.49	0.048	7.95
3. Market share reports	2.90	0.007	3.36	6.12	0.034	6.84
5. Net profit reports	4.40	0.000	3.64	8.48	0.039	7.90
7. Business unit cost reports[4]	3.91	0.000	3.36	7.98	0.000	6.88
9. Marketing cost reports	2.62	0.005	3.17	5.89	0.007	6.57
13. Business process re-engineering	2.22	0.048	1.88	5.35	0.000	3.89
37. Flexible budgeting	1.88	0.038	1.44	5.30	0.041	4.66
39. Activity based budgeting	1.38	0.000	2.32	4.87	0.016	5.68
40. Variance analysis	4.25	0.000	3.28	8.80	0.000	6.94
41. Target costing	1.35	0.008	1.92	4.14	0.023	4.81

1. Frequency of use scale: 0 = not used; 1 = rarely used to 5 = often used
2. Perceived importance scale: 1 = lowest importance to 10 = highest importance
3. Signif = significance level using t test
4. Bold: significance level below 0.01 for both frequency of use and perceived importance

Table 3 lists the 10 techniques with the highest mean responses for frequency of use ordered on the mean responses by the accounting executives. It also provides the top 10 techniques by the marketing executives, plus the relationship between these two listings. A most interesting observation is that all the techniques in the top 10 of both groups are traditional techniques. Seven of the techniques in the top 10 of the accounting executives are also in the top 10 of the marketing executives. Six of these seven techniques have statistically significant differences at less than the 0.01 level, and the accounting mean response is higher than the marketing mean response for all 10. Market share reports, break-even analysis and marketing cost reports are ranked 7, 8 and 10, respectively, by the marketing executives, but 13, 14 and 18, respectively, by the accounting executives. Similarly, contribution margin reports, variable costing/pricing and return on investment are ranked 8, 9 and 10, respectively, by the accounting executives, but 11, 13 and 12, respectively, by the marketing executives.

Table 3: Frequency of Use of Management Accounting Techniques -Listing by Mean Response

Accounting	Techniques	Actg	Signif[1]	Mktg	Marketing
1[2]	2. Sales volume reports	4.61	0.005	4.35	1[2]
2	5. Net profit reports	4.40	0.000	3.64	4
3	22. Sales forecasting	4.32	0.080	4.12	2
4	40. Variance analysis	4.25	0.000	3.28	9
5	35. Capital budgeting	4.10	0.005	3.67	3
6	4. Gross margin reports	3.91	0.004	3.44	5
6	7. Business unit cost reports	3.91	0.000	3.36	6
8	6. Contribution margin reports	3.52	ns	3.15	11
9	29. Variable costing/pricing	3.32	0.020	2.85	13
10	1. Return on investment	3.27	ns	3.08	12
13	3. Market share reports	2.90	0.007	3.36	7
14	34. Break-even analysis	2.90	0.060	3.32	8
18	9. Marketing cost reports	2.62	0.005	3.17	10

1. Signif = significance level using t test; ns = not significant

2. Ordering based on decreasing mean response for each group of respondents

The listings in **Table 3** indicate that there is reasonable agreement between the two groups of executives on the 10 most highly used management accounting techniques. However, there are statistically significant differences in the responses of the two groups on frequency of use. These observations indicate that there is reasonable consensus between the two groups as to the set of most relevant techniques, but differences in their actual use of individual techniques because of differences in their functional responsibilities.

The relatively low mean responses on contribution margin reports and variable costing/pricing by the marketing executives are surprising, given the emphasis placed on these traditional techniques in standard accounting courses in business programmes. Some of the differences may relate to areas of responsibility; for example, marketing executives make significantly more use of market share reports and marketing cost reports. But there are some techniques where reasons for the low use are not obvious (e.g. return on investment) and others where the difference in use seems detrimental to organisational performance (e.g. business unit cost reports).

Table 4: Perceived Importance of Management Accounting Techniques - Listing by Mean Response

Accounting	Techniques	Actg	Signif[1]	Mktg	Marketing
1[2]	40. Variance analysis	8.80	0.000	6.94	10[2]
2	2. Sales volume reports	8.49	0.048	7.95	2
3	5. Net profit reports	8.48	0.039	7.90	3
4	22. Sales forecasting	8.16	ns	8.28	1
5	7. Business unit cost reports	7.98	0.000	6.88	11
6	35. Capital budgeting	7.91	0.056	7.37	5
7	4. Gross margin reports	7.62	ns	7.14	8
8	36. Master budgeting	7.35	0.010	6.08	18
9	29. Variable costing/pricing	7.22	ns	7.18	7
10	1. Return on investment	7.08	ns	6.83	13
22	16. Total quality management	5.42	0.050	7.61	4
11	6. Contribution margin reports	7.02	ns	7.33	6
16	34. Break-even analysis	6.24	0.007	6.96	9

1. Signif = significance level using t test; ns = not significant

2. Ordering based on decreasing mean response for each group of respondents

Table 4 lists the 10 techniques with the highest mean responses for perceived importance when the 42 techniques are listed in decreasing order of the mean responses by the accounting executives. It also provides the top 10 techniques for the marketing executives and shows the relationship between these two sets of listings. Again, the majority of these techniques are traditional. There is only one contemporary technique in these two top 10 listings; total quality management is fourth in the marketing listing but twenty-second in the accounting listing. As with frequency of use, seven of the top 10 techniques are common to the accounting and marketing executives, and three of these seven techniques have differences that are significant at less than the 0.05 level. The three items not in each other's top 10 in terms of importance display greater differences in ranking than for frequency of use. Total quality management, contribution margin reports and break-even analysis are 4, 6 and 9, respectively, for the marketing executives, but 22, 11 and 16, respectively, for the accounting executives. Business unit cost reports, master budgeting and return on investment are 5, 8 and 10, respectively, for the accounting executives, but 11, 18 and 13, respectively, for the marketing executives. The consensus between the two groups of executives for perceived importance is less than for the frequency of use. Although there is general agreement on perceived importance, there are some disagreements that seem surprising. The relatively low mean responses for total quality management by accounting executives are notable, given the emphasis on this topic in current accounting education and the professional literature in recent years. Similarly, the accounting executives' relatively low mean response for contribution margin reports is unexpected. The low rating of master budgeting by the marketing executives seems undesirable given its use to assist overall planning and control.

Variance analysis, master budgeting and business unit cost reports are perceived to be more important by accounting executives than by marketing executives. The specialised and technical nature of the first two techniques may explain why marketing executives do not have very high mean responses for them. However, the same cannot be said of business unit cost reports, especially given their importance in sales management and the increasing emphasis on the financial accountability of marketing executives.

The frequency of use and perceived importance of the 42 management accounting techniques when categorized as traditional versus contemporary is now considered. Although not all might agree on the specifics, it seems reasonable to partition the 42 techniques into 26 traditional and 16 contemporary techniques. For example, return on investment, gross margin reports and variance analysis have long been used, whereas activity based costing, EVA analysis and target costing are more recent introductions. The management accounting techniques were listed in descending order of mean responses for frequency of use and for perceived importance as reported by the accounting executives and by the marketing executives. Examination of these four listings (which are not reported in this paper but can be inferred easily from mean responses **Table 1**) leads clearly to one conclusion. The 16 contemporary management accounting techniques are virtually all in the lower half of all four listings. These results provide strong evidence that the contemporary techniques emphasized in current management accounting texts (e.g. Kaplan and Atkinson, 1998) and advocated in the professional literature (Deloitte Consulting, 1999) are not as extensively used or valued by the accounting and marketing executives as are the traditional techniques. Possible explanation for this observation is that the respondents are senior executives who are not as familiar with the contemporary techniques or that the contemporary techniques are not as important for higher level managers.

Research Question 2

Is organisational performance related to the frequency of use and perceived importance of the 42 management accounting techniques?

In order to investigate the relationship of organisational performance with the frequency of use and perceived importance of the 42 management accounting techniques, cluster analysis was used to classify the companies into high and low performers based upon two different measures of organisational performance. The clusters were first formed using the self-reported evaluations in the areas of sales volume, market share, profitability and customer satisfaction relative to the organisation's major competitors and its own objectives for the 72 firms that gave complete information on these questions. These assessments were both made on a 1 to 5 Likert scale where the choices ranged from 1 = 'much worse' to 5 = 'much better'. This yielded a cluster of 32 low performers and a cluster of 40 high performers. The mean responses on the eight measures for the low and high performers are presented in **Table 5** and the differences between them are all significant at less than the 0.05 level, with six of them significant at less than the 0.01 level. The frequency of use and perceived importance for the low and high performance clusters differ at the 0.10 level or lower for only 24 of the 168 possibilities [42 (techniques) x 2 (frequency of use and perceived importance) x 2 (accounting and marketing)]. For the marketing executives, there are only three techniques with significant differences for each of frequency of use and perceived importance. There are 18 for the accounting executives, which are reported in **Table 6**. For 22 of the 24 techniques with significant differences, the mean responses for the high performers are higher. In total, there are relatively few management accounting techniques for which there are significant differences (24/168 = 15 per cent) and the majority of these are for traditional management accounting techniques. The only technique for which there are significant differences for all four possibilities is the traditional technique of net profit reports. The mean responses here are all at the upper end of the scales indicating that these are frequently used and considered important. These results indicate that there is no strong relationship between management accounting techniques and organisational performance and that any relationship that does exist is primarily related to traditional management accounting techniques.

Table 5: Results of Cluster Analysis Based on Self-reported Performance Measures[1]

Variable	Low Performers (n = 32)	Significance[2]	High Performers (n = 40)
Competitors			
Sales volume	2.97	0.000	4.13
Market share	2.78	0.000	4.03
Profits	3.01	0.000	4.30
Customers' satisfaction	3.31	0.000	3.93
Own objectives			
Sales volume	3.22	0.014	3.76
Market share	2.96	0.000	3.76
Profits	2.81	0.003	3.63
Customers' satisfaction	2.96	0.045	3.33

[1] Self-reported performance scale: 1 = much worse to 5 = much better
[2] Using t test

Table 6: Management Accounting Techniques Mean Responses by Cluster Based on Self-reported Performance Measures

Technique	Frequency[1]			Importance[2]		
	Actg			Actg		
	Low[3]	Signif[4]	High[5]	Low[3]	Signif[4]	High[5]
4. Gross margin reports				6.78	0.001	8.47
5. Net profit reports	4.15	0.09	4.50	7.88	0.01	8.92
6. Contribution margin reports	3.03	0.03	3.96			
13. Business process re-engineering	1.75	0.04	2.42			
17. Statistical quality control	1.44	0.08	2.10			
22. Sales forecasting	4.14	0.09	4.45	7.65	0.04	8.55
26. Time-based management	0.65	0.03	1.20			
27. Strategic partner ship	2.25	0.04	2.91			
28. Full costing/ pricing	2.14	0.01	3.06	5.53	0.04	6.84
29. Variable costing /pricing	3.17	0.10	3.62			
31. Allocation of service dept costs				5.34	0.03	6.37
33. Statistical cost behaviour analysis	1.02	0.04	1.65			
35. Capital budgeting	3.88	0.015	4.38	7.27	0.01	8.37
39. Activity based budgeting	1.06	0.09	1.55			

1. Frequency = frequency of use
2. Importance = perceived importance
3. Low = low performers' mean response
4. Signif = statistical significance using t test
5. High = high performers' mean response

In order to investigate the effect of using an objective financial measure of performance rather than the self-reported broader measures of performance, high and low performer clusters were formed based on accounting return on assets as reported in the *Financial Post* database. Because some companies were not on the database, the usable sample was limited to only 46 companies. Return on assets for the 1996 fiscal year yielded a cluster of 22 low performers, with a mean return on assets of 2.65 per cent, and a cluster of 24 high performers with a mean return on assets of 10.90 per cent. The frequency of use and perceived importance for the low and high performance clusters differ at the 0.10 level or lower for only 13 (8 per cent) of the 168 possibilities. Overall, there are 10 techniques with significant differences for the accounting executives and three for the marketing executives. Of the 13 techniques with significant differences, there are two techniques that differ for frequency of use by both accounting and marketing executives, and one that differs for perceived importance by the marketing executives. The most marked significant differences between high and low performers occurred with the eight techniques (with respect to perceived importance by accounting executives) that are reported in **Table 7**. Of the total 13 techniques which were significantly different at the 0.10 level or lower, two of the four techniques differing by frequency of use, and five of nine differing by perceived importance, are for contemporary management accounting techniques, and show a higher mean response for the high performance cluster. However, they are in the lower half of the measurement scales, so it is not clear that they have a practical impact on organisational performance. Interestingly, there are five instances where the mean response for the low performing group is higher than for the high performing group. These are return on investment (accounting perceived importance), sales volume reports (marketing perceived importance), activity based management (accounting perceived performance) and break-even analysis (marketing frequency of use and accounting perceived importance). All but activity based management are traditional management accounting techniques. These observations provide, at best, weak evidence for a positive relationship between performance and management accounting techniques, consistent with that from the previous cluster analysis.

Table 7: Management Accounting Techniques Mean Response by Clusters Based on 1996 Return on Assets

Techniques	Importance[1]		
	Actg		
	Low[2]	Signif[3]	High[4]
1. Return on investment	8.33[5]	0.07	7.30
14. Activity based management	5.26	0.09	3.87
15. Just-in-time management	3.22	0.03	4.65
17. Statistical quality control	3.76	0.08	4.94
18. Cost of quality	3.16	0.06	4.32
25. Theory of constraints	1.66	0.07	2.41
34. Break-even analysis	6.83	0.07	5.75
42. Life cycle costing	3.22	0.07	4.45

1. Importance = perceived importance
2. Low = low performers' mean response
3. Signif = statistical significance using t test
4. High = high performers' mean response

Bold: low performers' mean response greater than high performers' mean response

Overall, the two cluster analyses indicate that there is not a strong relationship between management accounting techniques and organisational performance. To the extent that there is a relationship, it is stronger for traditional rather than for contemporary management accounting techniques. This is consistent with the previous observation that traditional techniques seem to be of more fundamental importance, with contemporary techniques serving as complements, rather than replacements.

CONCLUSIONS

The mean responses for frequency of use and perceived importance from accounting and marketing executives for the 42 management accounting techniques included in this study cover almost the full scale available, leading to the conclusion that some techniques are relatively more used and important than others. The correlation of the mean responses for frequency of use and perceived importance of the management accounting techniques suggests that the two groups of executives are using the techniques that they feel are important. There is general agreement between the mean responses of the accounting and marketing executives for both the frequency of use and perceived importance of these techniques. However, there are statistically significant differences between the two groups of executives for some techniques. Therefore, it can be concluded that the two groups are quite like-minded in embracing certain techniques and making infrequent use of others deemed to be much less important.

Where there is a significant difference between the two groups for particular management accounting techniques, executives with the higher mean response for frequency of use also have a higher mean for perceived importance. In general, the group with the higher mean response is consistent with the *a priori* expectations. But the differences for some techniques suggest a need for further investigation as the differences may have managerial significance.

The contemporary techniques are almost all in the lower half of the four listings in descending order of frequency of use and perceived importance by each of the accounting and marketing executives, whereas the traditional techniques are generally in the upper half. Thus, there is little evidence of high use or perceived importance for contemporary management accounting techniques that are advocated in the management accounting literature. Although there may be some adoption of contemporary techniques, the evidence is consistent with previous observations that traditional management accounting techniques are still fundamental (Szendi and Elmore, 1993).

The observations on the relative use of traditional and contemporary management accounting techniques are consistent with the results of a number of other studies. A survey of financial management tools used to plan and control supply chain activities found that 'standard costing and performance variance analysis are the only two used to any significant extent', and 'powerful tools, such as the balanced scorecard and EVA measures, are not being used' (Deloitte Consulting, 1999, p.16). In a study of management accounting practice in Ireland, Pierce and O'Dea (1998a and 1998b) reported that traditional techniques are dominant in Irish management accounting systems with a heavy emphasis on financial measures. They found that the use of new techniques is generally low, but higher in companies making greater use of traditional techniques. They also found a positive correlation between the use of traditional and contemporary techniques. A qualitative comparison of their results with those in the present study shows that the Canadian and Irish mean responses appear to be generally consistent for about a dozen techniques common to the two studies. Two other studies in Ireland found relatively little use of contemporary management accounting techniques (Clarke, 1992; O'Dea and Clarke, 1994), and one found a heavy emphasis on traditional financial management accounting measures with low awareness of contemporary techniques (Clarke and Toal, 1999).

There is relatively weak evidence on the correlation of management accounting techniques and organisational performance. The results provide no basis to conclude that the choice of traditional versus contemporary management accounting techniques is a key factor in determining organisational performance. The reasons for this result are not clear and merit further investigation. A final conclusion is that there does not seem to be any particular emphasis on contemporary management accounting techniques. It may be that there is need for more education in their use if they are indeed as useful as suggested. Alternatively, it may be that contemporary techniques are proving more useful complements to, rather than substitutes for, traditional techniques.

The limitations of this study should be acknowledged. The accounting and marketing executives who responded to the survey are higher level managers by design of the study, and while their responses reflect the corporate level view they may not reflect the views of lower level managers. This may explain two observations that were not anticipated. One of these is the high degree of consensus on frequency of use and perceived importance of management accounting techniques between accounting and marketing executives. The second is the emphasis on traditional rather than contemporary management accounting techniques. Differences in both these areas might be found amongst younger managers because of their more recent education and greater involvement at the operational level. Furthermore, because the respondents are in different functional areas, they may not have the same understanding of terminology used for the management accounting techniques – either from lack of familiarity or difference in use of the terms in their functional areas. This may explain a few of the unexpected mean responses in areas such as activity based costing, target costing and story-boarding.

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