

CONTINGENCIES INFLUENCING MANAGEMENT ACCOUNTING PRACTICE: A YEMEN-BASED EMPIRICAL STUDY

Ahmed Abdullah Saad Al-Dhubaibi

Ibrahim Kamal Abdul Rahman

Mohd Nizal Haniff

Zuraidah Mohd Sanusi

Accounting Research Institute & Faculty of Accountancy
Universiti Teknologi MARA, Malaysia

ABSTRACT

A significant number of management accounting studies have observed various levels of management accounting practice (MAP) adoption. Although academicians and practitioners have argued that advanced MAPs create value and improve the performance of their adopters, researchers have determined that traditional MAPs remain dominant in the market. This study aims to contribute to the extant body of knowledge on this topic by exploring the level of MAP adoption in Yemen and by examining the effect of certain external (environmental) and internal (organisational) factors on the level of MAP advancement. The sample firms include large firms that operate in various economic sectors in Yemen, such as manufacturing, financial, natural resources extraction and service, as well as medium and small firms to achieve sufficient sample size. The International Federation of Accountants (IFAC) framework on management accounting stages is used to classify the levels of MAP advancement. Competition level and structure type (level of delegation) significantly explain the variations in MAP advancement levels among firms in Yemen. A higher degree of competition and amount of delegations can drive firms to adopt more sophisticated MAPs. These results improve our understanding of why some firms invest in upgrading their management accounting systems and target best practices, whereas other firms tend to continue using traditional MA tools.

Keywords: management accounting practice, traditional and advanced MAP, contingent factors

INTRODUCTION

The International Federation of Accountants (IFAC) proposed a framework for management accounting evolution in the revised 1998 Management Accounting Practice Statement Number 1. According to this framework, MAP was in stage one before 1950, and these practices were focused primarily on cost determination and financial control. Budgeting and cost accounting were the main tools of management accounting during this stage. MAP advanced to stage two from 1965 to 1985, during which the information for management planning and control was provided by management accountants. In stages three and four, the role of MA shifted from information provision to resource management, in which the MA function became an essential part of the management process, and management accountants supported the management in their decision making process, which depended primarily on the information provided by management accountants.

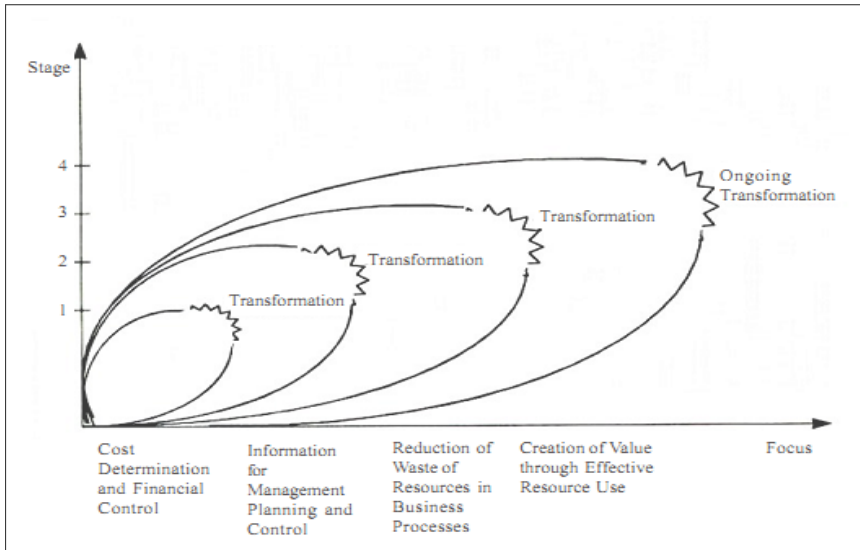


Figure 1: IFAC Framework for Management Accounting Evolution

(Source: IFAC 1998)

Surveys on management accounting techniques reported the wide use of traditional techniques even in the most developed countries (Abdel-Kader & Luther, 2006a; Abdul Rahman, Omar, Sulaiman & Zainal Abidin, 2005; Chenhall & Langfield-Smith, 1998; Joshi, Bremser, Deshmukh & Kumar, 2011; McLellan & Moustafa, 2011; Omar, Abd Rahman & Sulaiman, 2004; Sulaiman, Ahmad & Alwi, 2004; Szendi & Elmore, 1993; Tuanmat, Smith & Djajadikerta, 2010; Tuanmat & Smith, 2011). Developing countries are more inclined to implement traditional management accounting techniques (MATs) and have a late and lower adoption rate of advanced MATs. Sulaiman et al. (2004) conducted a literature review on the use of traditional and contemporary MATs in Singapore, India, Malaysia and China. These countries have a low adoption of contemporary MATs, but have stronger use of traditional techniques. Companies in Malaysia largely employ traditional MATs and minimally adopt sophisticated MATs (Omar et al., 2004). These companies also use MA innovations to complement rather than replace the traditional system (Abdul Rahman, Morshidi & Omar, 2002). Smith, Abdullah and Razak (2008) confirmed the dominance of financial accounting and reported a low adoption rate of advanced MATs even for large companies.

Contingency theory suggests that MAPs are products of various external and internal contingent variables. MA researchers found that MAP was affected by factors either related to the environment such as competition (Abdel-Kader & Luther, 2008; Shields, 1997; Tuanmat et al., 2010; Waweru, Hoque & Uliana, 2004), environmental uncertainty (Abdel-Kader & Luther, 2008; Vaivio, 1999; Waldron, 2005) and changes in technology (Waweru et al., 2004), or to organisation characteristics such as size (Askarany & Smith, 2003; Smith et al., 2008), strategy (Moore & Yuen, 2001; Tuanmat et al., 2010), structure (Abernethy & Bouwens, 2005; Cavalluzzo & Ittner, 2004) or innovation attributes (Smith et al., 2008). Therefore, the factors that drive MAP differ across countries according to their environmental elements and organisational characteristics.

This study explores the advancement level of MAPs in Yemen using the IFAC framework. Several organisational and environmental factors are also investigated to understand the variation of MAPs among companies and to explain why some companies tend to adopt advanced MAP while others do not.

LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

MAP studies in Middle Eastern countries are in line with those in other developing countries. For instance, the large and medium-sized companies in Saudi Arabia utilise traditional MAP more frequently than contemporary MAP (El-Ebaishi, Karbhari & Naser, 2003). McLellan and Moustafa (2011) investigated MAP in the Gulf Cooperative Council Countries (GCC), which is composed of Saudi Arabia, United Arab Emirates, Qatar, Oman, Kuwait and Bahrain, and found that most MAPs adopted in these countries were traditional. Joshi et al. (2011) also explored MAP in GCC and found that MAPs related to performance evaluation had a moderate adoption rate, whereas strategic MATs had a low adoption rate. Abdel Al and McLellan (2011) as well as Nassar, Al-Khadash, Al-Okdah and Sangster (2011) investigated the situation of MAPs in Egypt and Jordan, respectively. Their results were similar to the studies conducted in other Middle Eastern countries. Egyptian and Jordanian manufacturing companies use traditional MAPs more frequently than newly developed MAPs. Given the level of MAP adoption in the Middle East, where Yemen is located, we hypothesise the following:

***H1:** The majority of the firms in Yemen are in stages one and two of MAP adoption according to the IFAC classification of MA sophistication.*

Previous studies reveal that MAPs in an uncertain environment undergo intensive changes as firms attempt to face a high degree of uncertainty by using highly sophisticated MATs that can produce more information as well as predict and address the changes in the business environment. Tuanmat et al. (2010) investigated the effect of organisational and environmental factors on MAP changes in Malaysia and found that such changes were associated with a competitive environment, which was considered an element of environmental uncertainty. A rapid change in the environment increases the demand for MATs that contain non-financial measures, such as a balanced scorecard (Vaivio, 1999). A higher level of competition increases the demand of managers for more relevant information for use in the decision making process. Therefore, competition facilitates change in MA systems (Hemmer, 1996). Given that the MA system is the primary

source of information necessary for decision making, managers will attempt to improve this system by adopting and implementing advanced MATs. Accordingly, we hypothesise the following:

***H2:** Those firms that face a high degree of competition adopt advanced MAPs more frequently than those firms that face a low degree of competition.*

A decentralised organisational structure provides managers with better access to information as well as a greater responsibility over planning and controlling activities. Consequently, decentralised organisations are expected to design an MA system that can provide managers with adequate, high-quality information for planning and controlling activities (Abdel-Kader & Luther, 2008). The delegation of decision-making activities to junior managers grants them a higher discretion to choose the activities and operations which, in turn, broaden their activities and accord them more authority to change the MA system. The delegated managers will also need a well-established MA system where they can obtain the relevant information for decision making (Hoque, 2011). Based on these arguments, we propose the following hypothesis:

***H3:** Those firms with a higher degree of delegation for decision making adopt more advanced MAPs than those with a lower degree of delegation.*

RESEARCH DESIGN

Questionnaires are used to collect empirical data for this study. These questionnaires request the respondents to present facts rather than to express personal opinions as in the case of interviews. Surveys are preferred as they do not require prompt responses from the respondents and grant them a higher degree of anonymity, which drive the respondents to be more realistic in their responses (Gosselin, 1997). The questionnaires were initially distributed to several respondents in Yemen, and a face-to-face discussion was held to determine their understanding of each item. Another set of questionnaires was distributed to several respondents to encourage feedback. These procedures aim to ensure the comprehensibility of the questionnaire

and the appropriateness of the translation from English to Arabic. After the face-to-face discussions with the respondents and soliciting their comments on the clarity of questions, the questionnaire items were then retranslated to Arabic language as required. The measurements for these items were adopted from previous studies to enhance the reliability and validity of the questionnaire. Minor modifications some measurements were made to suit the Yemen environment.

Aside from a random number of medium and small companies, the sample included large companies operating in various economic sectors and could be contacted via email or personally by the researcher to achieve a sufficient sample size. Surveying companies from different industries facilitated access to a large number of respondents and provided adequate data for the statistical analysis.

Out of 430 distributed questionnaires, 174 responses were obtained and a 40% response rate was achieved. Sixteen received questionnaires were excluded because of the high rate of missing data and the very small size of respondent firms. Accordingly, 158 valid responses were obtained and a valid response rate of 37% was achieved. The Cronbach's alpha measure for internal consistency was used to measure the reliability of constructs that comprised more than one item. Firm structure was the only variable that was composed of five items. A Cronbach's Alpha of 0.89 was obtained for firm structure, which proved the soundness of this measurement for the analysis.

RESULTS

Table 1 presents the profile of the participating companies. The highest response rate was obtained from the manufacturing and trade sectors (36% and 39%), followed by the service and financial industries (27% and 19%). Company size varied from small (10 to 50 employees) to large (over 500 employees). Around 30% of the responses were obtained from small companies, of which 2% had less than 10 employees. Medium companies (27) accounted for 17% of the total responses, whereas large companies (80) accounted for 51% of the total responses. Among the participating companies, 136 (86%) were local, whereas 22 (14%) were foreign companies operating in Yemen.

Table 1: Profile of Responding Companies

	Frequency	Percent	Cumulative Percent
Industry Type			
Manufacturing	36	22.8	22.8
Natural resources extraction	9	5.7	28.5
Financial/Banking	19	12.0	40.5
Tourism	2	1.3	41.8
Healthcare	6	3.8	45.6
Trade	39	24.7	70.3
Service	27	17.1	87.3
Construction	13	8.2	95.6
Other	7	4.4	100.0
Total	158	100.0	
Size of Company (Number of Employees)			
Very Small(<i>Less than 10</i>)	4	2.5	2.5
Small(<i>10 to 50</i>)	47	29.7	32.3
Medium(<i>51 to 150</i>)	27	17.1	49.4
Large(<i>151 to 500</i>)	46	29.1	78.5
Very Large(<i>Over 500</i>)	34	21.5	100.0
Total	158	100.0	
Nationality of Company			
Local	136	86.1	86.1
Foreign	22	13.9	100.0
Total	158	100.0	

MAP in Yemen (H1)

Table 2 presents the MAP stage of the sample firms in Yemen. As explained earlier, the stages of MAP reflect the level of MAP advancement according to the classification of the IFAC framework for management accounting evolution. According to this framework, stages one and two indicate the traditional MAP that was developed from the early 20th century to mid-80s, whereas stages three and four represent advanced MAP that was developed from the late 1980s onwards. Stage one is the oldest and most traditional practice, whereas stage four is the most recently developed and advanced practice.

Among the 158 responding companies, 54 (34%) companies reported their MAP was at stage one, 48 (30%) companies indicated that their MAP was at stage two, 36 (23%) companies stated that their MAP was at stage three and 20 (13%) companies reported that their MAP was at stage four. A total of 102 (64%) companies were still using traditional MAP (stages 1 and 2), whereas 56 (36%) companies were using advanced MAP (stages 3 and 4). Accordingly, *H1* is supported.

When our findings are compared with those of other studies that were conducted in developed countries, a gap between developed and developing countries in terms of MAP could be observed. For example, (Abdel-Kader and Luther, 2006b) explored MAP in the UK food industry and found that 19% of the surveyed firms were still at stage one, 41% were at stage two, 27% were at stage 3 and 13% were at stage four. However, their sample of UK companies was only taken from the manufacturing industry, whereas the sample of this study was taken from various economic sectors in Yemen.

Table 2: MAP Stage

	Frequency	Percent	Cumulative Percent
MAP Stage			
Stage One	54	34.2	34.2
Stage Two	48	30.4	64.6
Stage Three	36	22.8	87.3
Stage Four	20	12.7	100.0
Total	158	100.0	
Traditional MAP versus Advanced MAP			
Traditional MAP	102	64.6	64.6
Advanced MAP	56	35.4	100.0
Total	158	100.0	

Competition, Structure and MAP (H2 and H3)

Table 3 summarises the t-test results for the equality of means analysis of *H2* and *H3*, which propose the effects of competition (environmental factor) and decentralisation (structure) levels on MAP. Levene's test for equality of variance shows a probability greater than 0.05 for both competition and structure, indicating that the population variances are relatively equal. Therefore, the equal variance estimates are interpreted. *H2* states that firms facing a high degree of competition adopt advanced MAP more frequently than firms facing a low degree of competition. Table 3 shows a significant difference in the level of competition between firms implementing traditional MAP and those implementing advanced MAP ($t = 2.82, P < 0.05$). The mean value of competition level as perceived by the responding firms in Yemen indicates that firms that implement advanced MAP face a higher level of competition (5.70), while those firms that implement traditional MAP operate in markets with a lower level of competition (5.02). Therefore, *H2* is supported.

Table3 shows that the t-test results for independent groups exhibit a significant difference in the level of delegation for decision making between firms that implement traditional MAP and firms that implement advanced MAP ($t = 3.96, p < 0.05$). Equality of variance is assumed as discussed earlier. The mean delegation level of firms that implement advanced MAP (4.63) is higher and significantly different than that of firms that implement traditional MAP (3.71). *H3* states that firms with a higher degree of decision making delegation adopt more advanced MAPs than the one with a lower degree of decision making delegation. Therefore, *H3* is supported.

Table 3: Competition, Structure and MAP

Variables	Mean	SD	Levene's Test for Equality of Variances		t-test for Equality of Means	
			F -value	p -value	t-value	p -value
<i>Competition</i>			3.35	0.06	-2.82	0.005
Traditional MAP	5.02	1.54				
Advanced MAP	5.70	1.23				
<i>Structure (Delegation)</i>			0.211	0.64	-3.96	0.000
Traditional MAP	3.71	1.40				
Advanced MAP	4.63	1.38				

DISCUSSION

The MAP level in Yemen is similar to that in other developing countries in terms of the prevalence of traditional MAP and the slow diffusion of advanced MAP. Similar results have been reported in Malaysia by Abdul Rahman et al. (2002), in Turkey by Uyar (2010) and in Vietnam by Anh, Nguyen and Mia (2011).

Firms that face a high level of competition in their respective markets acquire more advanced MAP. A higher level of competition forces firms to become alert, innovative and responsive to advanced methodologies in business management. Competition increases the demand of firms for information to support their decision making processes.

Therefore, firms improve their MAP to obtain the necessary information in a timely and effective manner. The differentiators or lower-cost strategic firms in highly competitive markets require information on their own performance, the changes in the market and the performance of their competitors to benchmark, reinforce their position and increase their market share. The adoption of advanced MAP facilitates the planning and strategic formulation of firms. Previous studies suggest that the challenges faced by firms that operate in competitive markets drive them to discover more effective business solutions to improve their performance (Baines & Langfield-Smith, 2003). These findings on the effect of competition on MAP level of advancement are consistent with those of previous studies (Hill, 2000; Hoque, 2011; Krishnan, 2005), which find a positive association between the levels of competition and MAP.

Delegation has been identified as an influential contingent factor that affects the level of MAP adoption and sophistication. Delegated medium-level managers tend to improve MA systems to obtain sufficient information necessary for completing their tasks. Decentralised firms that delegate a broad scope of their decision making processes to lower-level managers also grant them opportunity to improve the information systems that they need to perform their responsibilities. These findings contribute to the debate on the role of firm structure on MAP. Other researchers have also argued on the positive role of increased delegation on improving the MA systems and MAP of firms (Waweru, 2008; Williams & Seaman, 2001).

CONCLUSION

Although MAP in Yemen is still in its early stages of development, the MAPs of several firms in the country are already in their advanced stages. Generally, MAP in Yemen requires further improvements. Practitioners should be made aware of the advantages and effects of new MA innovations

on their business management and performance. Although several firms in Yemen are already in the advanced stages of MAP (i.e., stages three and four), the majority of firms are still in stages one and two. This study attempts to uncover why some firms have moved into the advanced stages of MAP, while the others have not. The findings not only explain the variations in MAP in Yemen, but also provide knowledge on the factors that could explain such variations, especially in the context of developing countries.

The effects of two contingent factors on the level of MAP advancement were examined in this study. These two factors can influence the sophistication level of MAP and contribute to our understanding of how firms decide to adopt or reject new MA tools. These two factors are environmental factors outside the control of firms (i.e., competition) or organisational factors related specifically to each firm (i.e., structure).

Future studies can further investigate the effects of factors related to the characteristics of the top management and personnel of firms. These types of factors can be managed and improved favourably according to empirical results, which in turn can improve the level of MAP advancement in developing countries.

REFERENCES

- Abdel-Kader, M., & Luther, R., (2006a). IFAC's Conception of the Evolution of Management Accounting: A Research Note. *Advances in Management Accounting* 15: pp. 229-247.
- Abdel-Kader, M., & Luther, R., (2006b). Management accounting practices in the British food and drinks industry. *British Food Journal*, 108(5): pp. 336-357.
- Abdel-Kader, M., & Luther, R., (2008). The impact of firm characteristics on management accounting practices: A UK-based empirical analysis. *The British Accounting Review*, 40(1): pp. 2-27.
- Abdel Al, S. F., & McLellan, J. D., (2011). *An Exploratory analysis of Management Accounting Practices in Egypt*.

- Abdul Rahman, I. K., Morshidi, I., & Omar, N., (2002). A study on product cost measurement and the role of product cost information in pricing decision among small and medium industries in Malaysia. *Proceedings of the 3rd Annual Conference of the Asian Academic Accounting Association, Nagoya University, Japan*: pp. 71-107.
- Abdul Rahman, I. K., Omar, N., Sulaiman, M., & Zainal Abidin, Z., (2005). Management accounting practice in Malaysia. In A. Nishimura & R. Willet (Eds.), *Management Accounting in Asia*: pp. 87-117: Thomson.
- Abernethy, M. A., & Bouwens, J., (2005). Determinants of accounting innovation implementation. *Abacus*, 41(3): pp. 217-240.
- Anh, D. N. P., Nguyen, D. T., & Mia, L., (2011). Western management accounting practices in Vietnamese enterprises: Adoption and perceived benefits. *Pacific Accounting Review*, 23(2): pp. 142-164.
- Askarany, D., & Smith, M., (2003). *The relationship between technological innovation, activity based costing and business size*.
- Baines, A., & Langfield-Smith, K., (2003). Antecedents to management accounting change: a structural equation approach. *Accounting, Organizations and Society*, 28(7-8): pp. 675-698.
- Cavalluzzo, K. S., & Ittner, C. D., (2004). Implementing performance measurement innovations: evidence from government. *Accounting, Organizations and Society*, 29(3-4): pp. 243-267.
- Chenhall, R. H., & Langfield-Smith, K., (1998). The relationship between strategic priorities, management techniques and management accounting: an empirical investigation using a systems approach. *Accounting, Organizations and Society*, 23(3): pp. 243-264.
- El-Ebaishi, M., Karbhari, Y., & Naser, K., (2003). Empirical evidence on the use of management accounting techniques in a sample of Saudi manufacturing companies. *International Journal of Commerce and Management*, 13(2): pp. 74-101.

- Gosselin, M., (1997). The effect of strategy and organizational structure on the adoption and implementation of activity-based costing. *Accounting, Organizations and Society*, 22(2): pp. 105-122.
- Hemmer, T., (1996). On the design and choice of "modern" management accounting measures. *Journal of Management Accounting Research*, 8: pp. 87-116.
- Hill, N. T., (2000). Adoption of costing systems in US hospitals: An event history analysis 1980–1990. *Journal of accounting and public policy*, 19(1): pp. 41-71.
- Hoque, Z., (2011). The relations among competition, delegation, management accounting systems change and performance: A path model. *Advances in Accounting*, 27(2): pp. 266-277.
- Joshi, P. L., Bremser, W. G., Deshmukh, A., & Kumar, R., (2011). Diffusion of Management Accounting Practices in Gulf Cooperation Council Countries. [Article]. *Accounting Perspectives*, 10(1): pp. 23-53.
- Krishnan, R., (2005). The effect of changes in regulation and competition on firms' demand for accounting information. *The Accounting Review*, 80(1): pp. 269-287.
- McLellan, J., & Moustafa, E., (2011). Management Accounting Practices in the Gulf Cooperative Countries. *International Journal of Business, Accounting, and Finance*, 5(1): pp. 129-142.
- Moore, K., & Yuen, S., (2001). Management accounting systems and organizational configuration: a life-cycle perspective. *Accounting, Organizations and Society*, 26(4-5): pp. 351-389.
- Nassar, M., Al-Khadash, H., Al-Okdah, S., & Sangster, A., (2011). The Implementation of Management Accounting Innovations within the Jordanian Industrial Sector: The Role of Supply-Side Factors. *European Journal of Economics, Finance and Administrative Sciences* (35).

- Omar, N., Abd Rahman, I. K., & Sulaiman, S., (2004). Management accounting in Malaysia—has relevance been lost? *Accountants Today, November*: pp. 26-28.
- Shields, M. D., (1997). Research in Management Accounting by North Americans in the 1990s. [Article]. *Journal of Management Accounting Research, 9*: pp. 3-61.
- Smith, M., Abdullah, Z., & Razak, R. A., (2008). The diffusion of technological and management accounting innovation: Malaysian evidence. *Asian Review of Accounting, 16*(3): pp. 197-218.
- Sulaiman, M., Ahmad, N. N., & Alwi, N., (2004). Management accounting practices in selected Asian countries a review of the literature. *Managerial Auditing Journal, 19*(4): pp. 493-508.
- Szendi, J. Z., & Elmore, R. C., (1993). Management accounting: are new techniques making in-roads with practitioners? *Journal of Accounting Education, 11*(1): pp. 61-76.
- Tuanmat, T. Z., Smith, G., & Djajadikerta, G., (2010). *Management Accounting and Organizational Change: An Exploratory Study in Malaysian Manufacturing Firms*.
- Tuanmat, T. Z., & Smith, M., (2011). Changes in management accounting practices in Malaysia. *Asian Review of Accounting, 19*(3): pp. 221-242.
- Uyar, A., (2010). Cost and Management Accounting Practices: A survey of manufacturing companies. *Eurasian Journal of Business and Economics, 3*(6): pp. 113-125.
- Vaivio, J. (1999). Exploring anon-financialmanagement accounting change. *Management Accounting Research, 10*(4): pp. 409-437.
- Waldron, M., (2005). Overcoming barriers to change in management accounting systems. *The Journal of American Academy of Business, 6*(2): pp. 244-249.

- Waweru, N. M., (2008). Predicting Change in Management Accounting Systems: The Effects of Competitive Strategy. *Global Journal of Business Research (GJBR)*, 2(1).
- Waweru, N. M., Hoque, Z., & Uliana, E., (2004). Management accounting change in South Africa: case studies from retail services. *Accounting, Auditing & Accountability Journal*, 17(5): pp. 675-704.
- Williams, J. J., & Seaman, A. E., (2001). Predicting change in management accounting systems: national culture and industry effects. *Accounting, Organizations and Society*, 26(4): pp. 443-460.