

An Exploratory Study of the Level of Sophistication of Management Accounting Practices in Libyan Manufacturing Companies

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Abstract:

Preface: Traditional MAPs such as standard costing and variance analysis, traditional budgeting and cost volume profit analysis have been under attack for some time now as being out of date and not suitable for today's new manufacturing and business environment. Thus, to keep pace with such new manufacturing and business environment, it becomes imperative for organisations, including Libyan organisation to adopt advanced MAPs such as ABC, JIT, TQM, life cycle assessment and target cost.

Purpose: This study seeks to examine the extent to which traditional and advanced MAPs are being used in Libyan manufacturing companies, and investigating the stages of management accounting evolution in the country.

Design/Methodology/approach: Data have been collected by utilising eighty-one postal questionnaires with the senior financial staff, such as financial directors, financial managers, the senior management accountant of large and medium size Libyan manufacturing companies from different industrial sectors. Then, an IFAC-based model was applied to analysis the stage of evolution of the management accounting practices in Libya. Finally, the reasons behind this low adoption rate of advanced MAPs were explained.

Findings: The results of this study indicate that Libyan manufacturing companies rely heavily on traditional management accounting techniques, while the adoption rates of recently developed or advanced tools were rather low, slow and similar than those presented in other developing countries. Moreover, the analysis revealed that MAPs in Libya were still between stage one and two in IFAC-based model. Thus, almost all of Libyan manufacturing companies are implementing MAPs which provided information for cost determination and financial control and information for management planning and control. Finally, the reasons underlying an apparent low adoption rate of advanced MAPs were explained. These reasons are related to institutional factors, the attributes of adopter and the attributes of advanced MAPs.

Limitation: The study is restricted to manufacturing companies; service sector companies raise their own particular issues and require separate in-depth studies.

Value: It is envisaged that this initial study will add to the limited literature on MAPs in developing countries and provide a useful framework for further studies, especially those in the Arabic region. Moreover, it provides some insight into the barriers of applying the advanced MAPs, which if they are solved, will pave the way for Libyan organisations to compete globally in the future.

Key words: Traditional MAPs, Advanced MAPs, Libyan Manufacturing companies, Libya, Developing countries, Arabic region, IFAC-based Model and Barriers, Institutional factors, The attributes of adopter, The attributes of advanced MAPs.

1. Background and Introduction

In recent years, the advance of competition, production environment technology and business environment has brought into being significant challenges for managers and pressures on management accounting to change. Some argue that if management accounting is to maintain its relevance, it needs to meet the changes in management information needs corresponding to these significant changes.

One of the most popular criticisms of management accounting in the last two decades has been that its traditional tools such as standard costing, variance analysis, budgeting, and cost volume profit analysis are no longer adequate to today's manufacturing companies (Kaplan, 1984, 1986; Johnson and Kaplan, 1987; Cooper and Kaplan, 1991; Ashton et al., 1995). Other writers recognise the existence of a 'gap' between theoretical models, which suggest how management accounting should be done, and management accounting practices (MAPs) (Scapens, 1985; Edwards and Emmanuel, 1990; Drury et al., 1993; Ashton et al., 1995; Drury, 1996).

Anthony (1989) criticised the claims by researchers that a specific management accounting technique is widely (or not) used where there is no statistical evidence to prove that. He further argued that there was a need for survey information concerning the use of MAPs, as information about MAPs is very poor and that almost all related information is anecdotal. Also Drury (1998) claimed further empirical studies are required to provide a detailed description and evaluation of these new systems and factors that influence change.

Management accounting researchers have responded to these concerns with survey-based studies of MAPs. Examples include studies from the UK (Drury et al., 1993 and Abdel-Kader and Luther, 2006), USA (Green and Amenkhienan, 1992), Australia (Chenhall and Langfield-Smith, 1998a), New Zealand (Waldron, 2005), and Finland (Hyvonen, 2005). Moreover, some researchers have been interested in comparing MAPs between countries. Examples include a study by Wijewardena and Zoysa (1999) comparing MAPs in Australia and Japan and a study by Luther and Longden (2001) who compared MAPs between South Africa and the UK.

The common findings from these surveys are that traditional MAPs are still popular even outweighing advanced techniques in claimed benefits. This has raised the questions whether it is premature to assume that traditional management accounting techniques lack relevance - as was claimed by Kaplan (1986) and Johnson and Kaplan (1987) - and the conditions necessary to effectively adopt recently developed techniques (Chenhall and Langfield-Smith, 1998a). Furthermore, the 'gap' between theory and practice in management accounting seems to arise from comparing between MAPs and optimal models - usually based on neoclassical economic theory - in simple production settings that do not relate to problems faced by practitioners; hence the view that research should focus more closely on studying observed practice by drawing off organisation, social and economic theory (Scapens, 1991; Scapens, 1994; Drury and Tayles, 1995; Burns and Scapens, 2000).

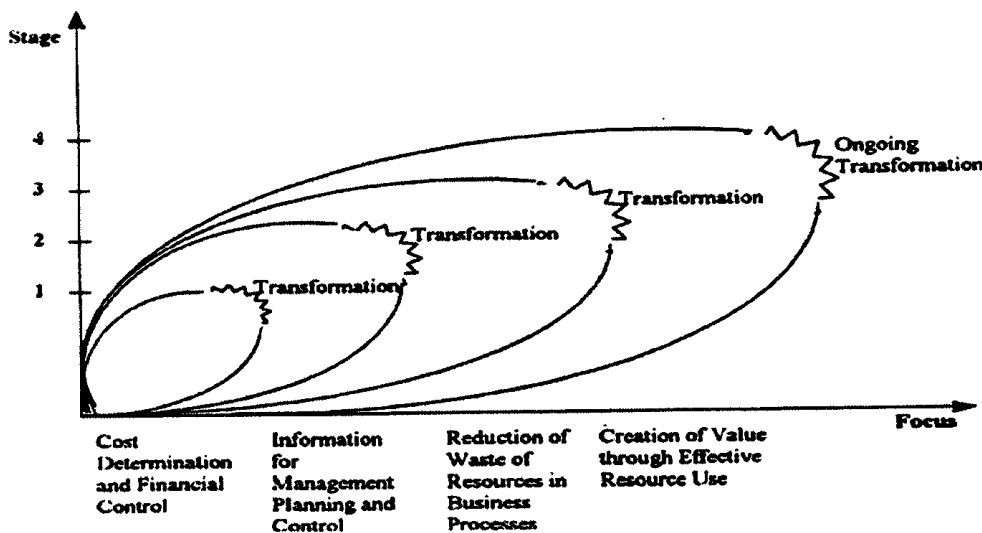
However, Although much attention has been paid to the relevance of MAPs (Drury et al., 1993), there still exists a lack of knowledge concerning the current state of MAPs, especially in less developed countries (Joshi, 2001; Lin and Yu, 2002; Waweru et al., 2004; Van Triest and Elshahat, 2007). In a market economy under construction as is now the case in Libya, the importance of studying management accounting cannot be emphasised enough. Firms in these countries offer a unique opportunity for researchers to study the evolution of MAPs in a relatively short period of time (Anderson and Lanen, 1999). Thus, this is a good opportunity to undertake research on MAPs in Libyan companies. It aims to provide a view of the present role of management accounting to identify the extent of usage of MAPs and to determine the sophistication level of MAPs by employing the International Federation of Accountants (IFAC) model in the Libyan manufacturing companies.

This study is organised as follows. Section two discusses the IFAC-Based Model of management accounting evolution. Section three deals with the research methodology. Section four provides details about MAPs in Libya. Section five investigates the sophistication level of MAPs by employing the IFAC-Based Model of management accounting evolution in the Libyan manufacturing companies. The final section concludes the papers.

2. IFAC-Based Model of Management Accounting Evolution

In 1989, the understanding of the scope and purposes of management accounting and the concepts which underpinned it was summarised by the IFAC in a statement. Later on in 1998, the statement was revised and released as Management Accounting Concepts: Number (1) in the series of International Management Accounting Practice Statements. The four stages of evolution of MAPs identified by IFAC (1998) are shown in figure (1) and described below.

Figure 1: Evolution of Management Accounting (IFAC, 1998)



Source: IFAC (1998).

Stage One: Cost Determination and Financial Control (Pre 1950)

IFAC describes management accounting before 1950 as "a technical activity necessary for the pursuit of organisational objectives" (Para 19). The focus was on Cost Determination and Financial Control. Hence, the main source of data was from financial statements. The use of methods such as Ratio Analysis, Financial Statement Analysis, Budgeting and other cost accounting technologies were very popular.

Stage Two: Information For Management Planning and Control (By 1965)

IFAC describes management accounting in this stage as "a management activity, but in a staff role" (Para 19). The focus has shifted to the provision of information for management planning and control. Thus, the use of management accounting techniques which could support decision analysis and responsibility accounting was introduced. The use of traditional methods such as Standard Costing, Cost-Volume-Profit (CVP), Break-Even Analysis, Transfer Pricing and Performance Measurement were accordingly increased during these period.

Stage Three: Reduction Of Resource Waste in Business Processes (By 1985)

The challenge of meeting global competition was addressed in this stage by new management and production techniques, and at the same time controlling costs, often through "reduction of waste resources and used in business processes" (IFAC, Para 7). Thus, the mathematical

formulas such as Total Quality Management (TQM), Economic Order Quantity (EOQ Model), Inventory evaluation models such as LIFO and FIFO, Management Resource Planning (MRP) and Multiple Regression were used in this stage.

Stage Four: Creation Of Value Through Effective Resources Use (By 1995)

The focus of management accounting in this stage shifted to the generation or creation of value through the effective use of resources. This was to be achieved through the "use of technologies which examine the drivers of customer value, shareholders value, and organisational innovation" (IFAC, 1998, Para 7). The introduction of "relatively modern" management accounting methods such as Activity-Based Costing (ABC), Just-In-Time (JIT), Target Costing, Balanced Scorecard, Value Chain Analysis and Strategic Management Accounting are quite predominated during this stage.

3. Research Methodology

This study is an exploratory study based on the fact that little is known about the evolution stage and the practice of management accounting and very few studies in this area have been conducted in Libyan context (e.g. Abulghasim, 2006; Alkizza, 2006). The companies that were selected as the sample of this study are all medium and large manufacturing companies in Libya, as manufacturing companies may design their management accounting systems differently from non-manufacturing companies (Fisher, 1995; Drury, 2004). Thus, it is difficult to either design a questionnaire that is suitable for both manufacturing and non-manufacturing companies or to design two questionnaires, one for manufacturing and the other for non-manufacturing companies. It is also believed that even designing a signal questionnaire for all types of non-manufacturing companies is difficult because of their distinctive features.

The main survey consisted of 154 identical questionnaires. A total of 42 questionnaires were not returned, with the main reasons given for non-completion being lack of time, work pressure and company policy. A total of 87 questionnaires were returned, 6 of which were not usable, thus leaving a usable response rate of 62.79%. According to Saunders et al. (2007) the likely response rate for business surveys is between 30-50 per cent for self-administered questionnaires. Thus, this response rate obtained from this study is considered to be very satisfactory.

The list of 24 MAPs used in this question was developed based on many prior similar studies such as Drury and Dugdale (1992), Drury et al. (1993), Chenhall and Langfield-Smith, (1998), Joshi (2001), and Luther and Longden (2001). These MAPs have been arranged following the stages of management accounting evolution produced by the IFAC-Based Model to investigate the level of sophistication of management accounting in Libya. Besides that, the respondents were asked to indicate the extent to which a list of items impede the adoption of advanced MAPs on a scale from 1 (Do not impede at all) to 5 (Considerably impede).

4. Management Accounting Practices in Libyan Manufacturing Companies

To find out the current adoption rate of MAPs in Libyan manufacturing companies, the respondents were asked to indicate whether each of 24 MAPs listed in the questionnaire was currently used. As Table (1) shows, all the MAPs listed are adopted by these manufacturing companies, except advanced MAPs namely: activity-based costing, activity-based management, Just-In-Time and balanced scorecard. Six practices are adopted by at least 70% of the sample, ten practices are adopted by 15-60% of the companies and four practices are used only by less than 15% of the responding companies, most of them advanced MAPs. These findings are consistent with those of previous studies in Libyan context (Abulghasim, 2006; Alkizza, 2006).

Table (1) MAPs Currently Used in Libyan Manufacturing Companies

MAPs	Rank	Adoption rate %	Stage
Full (absorption) costing	1	96.3	1
Budgeting systems for planning financial position and cash flows	2	91.4	1
Product profitability analysis	3	88.9	1
Budgeting systems for day-to-day operations	4	74.1	1
Variable costing	5	71.6	1
Budgeting systems for co-ordinating activities across the business units	6	59.3	1
Mean of MAPs in the First Stage		80.3%	
Cost-volume-profit/break-even analysis	1	72.8	2
Cash flow return on investment	2	39.5	2
Return on investment (ROI)	3	37.5	2
Controllable profit	3	37.5	2
Capital budgeting techniques (e.g. Net present value (NPV) Internal rate of return (IRR), Payback)	4	37.0	2
Divisional profit	5	35.8	2
Standard costs and variance analysis	6	32.1	2
Residual income	7	14.8	2
Mean of MAPs in the Second Stage		38.4%	
Long range forecasting	1	30.0	3
Customer satisfaction surveys (quality)	2	23.5	3
Total quality management	3	18.5	3
Quality cost reporting	4	12.3	3
Mean of MAPs in the Third Stage		21.1%	
Target costing	1	13.6	4
Life-cycle costing	2	3.7	4
Activity-based costing (ABC)	3	0	4
Activity-based management (ABM)	3	0	4
Just-In-Time (JIT)	3	0	4
Balanced scorecard (BSC)	3	0	4
Mean of MAPs in the Fourth Stage		2.9%	

However, these findings indicate that Libyan manufacturing companies have a relatively lower adoption rate of MAPs compared with previous studies which have looked at the same area. For instance, in India companies with an adoption rate of 70% or less were classified in low adoption group and 14 MAPs were adopted by at least 80% of the companies surveyed (Joshi, 2001). In Australia, 80% or less adoption was classified as a low adoption rate, 15 MAPs were adopted by at least 90% and a further 16 practices were adopted by at least 80% of the companies (Chenhall and Langfield-Smith, 1998a). In Finland, 20 MAPs were adopted by at least 90% of the companies and 82% or less was classified as low category of adoption rate (Hyvonen, 2005). In Egypt, 33% or less adoption was classified as a low adoption rate (Abdelal and McLellan, 2011).

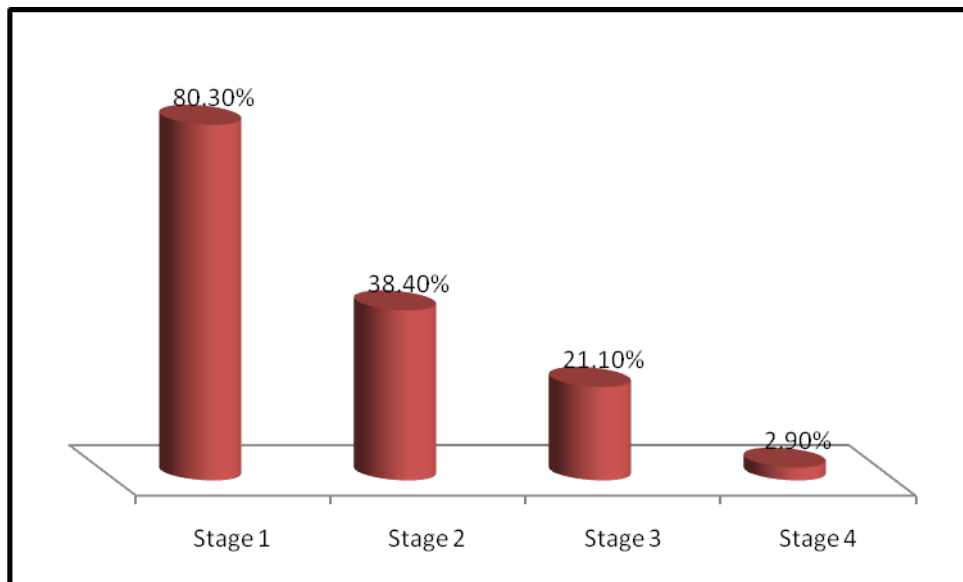
Finally, table (1) indicates in overall that Libyan manufacturing companies rely heavily on traditional management accounting techniques, while the adoption rates of

recently developed or advanced tools were rather low, slow and similar than those presented in other developing countries.

5. Sophistication Level of MAPs in the Libyan Manufacturing Companies

Once the application of MAPs was determined in section above, the level of sophistication of management accounting in Libya could be further explored. It is clear from table (1) and figure (2) that almost all of surveyed companies are located in the first stage with 80.3%, the second stage is revealed to be 38.4% from the surveyed companies, and finally the last two stages which are considered as the more sophisticated stages found very low number of companies located in these stages with 21.2% and 2.9% respectively. Thus, almost all of Libyan manufacturing companies are implementing MAPs which provided information for cost determination and financial control and information for management planning and control. These findings are consistent with those of previous studies in developing countries. For example, Sleihat et al. (2012) found that the distribution of Jordanian financial firms between these stages are 64.1%, 29.7%, 3.1%, and 3.1% respectively.

Figure (2) The level of sophistication of management accounting in Libya



Finally, to find out the barriers to diffusion of advanced MAPs, the respondents were asked to indicate the extent to which a list of items impede the adoption of advanced MAPs on a scale from 1 (Do not impede at all) to 5 (Considerably impede). As Table (2) shows, it is clear that that the first six items that impede the adoption of MAPs are related to institutional factors, which are: lack of an active professional management accounting society (ranked 1), lack of local training programmes about advanced techniques (ranked 2), lack of relevant courses on such advanced techniques in academic institutions (ranked 3), lack of software packages relevant to advanced techniques (ranked 4), lack of up-to-date publications about advanced techniques (ranked 5) and absence of Libyan companies that have adopted advanced techniques (ranked 6).

The second in the ranking is a group of items related to the attributes of adopter namely; the lack of relevant employee skills because of insufficient training provided by the company (ranked 7), lack of financial resources (ranked 8), lack of decision making autonomy at lower levels (ranked 9), company ownership type (ranked 10), and insufficient support from top management (ranked 11).

Table (2) The Barriers to the Adoption of Advanced MAPs

Rank	Barriers	Mean
1	Lack of an active professional management accounting society	4.12
2	Lack of local training programmes about advanced techniques	4.08
3	Lack of relevant courses on such advanced techniques in academic institutions	3.91
4	Lack of software packages relevant to advanced techniques	3.72
5	Lack of up-to-date publications about advanced techniques	3.71
6	Absence of Libyan companies that have adopted advanced techniques	3.60
7	Lack of relevant employee skills because of insufficient training provided by the company	3.38
8	Lack of financial resources	3.32
9	Lack of decision making autonomy at lower levels	2.93
10	Company ownership type	2.92
11	Insufficient support from top management	2.91
12	No significant problems with current system	2.82
13	Lack of confidence in the value of advanced techniques	2.82
14	Lack of compatibility of the advanced techniques with existing system	2.76
15	High cost to implement these advanced techniques	2.72
16	These advanced techniques are too complex	2.53
17	Benefits from advanced techniques are difficult to observe	2.51
18	No significant benefits perceived from adopting advanced techniques	2.41

Finally, most of the items that are regarded as the least barriers are related to the attributes of advanced MAPs, starting with no significant problems with the current system (ranked 12), lack of confidence in the value of advanced techniques (ranked 13), lack of compatibility of the advanced techniques with the existing system (ranked 14), high cost to implement these advanced techniques (ranked 15), these advanced techniques are too complex (ranked 16), benefits from advanced techniques are difficult to observe (ranked 17), and no significant benefits perceived from adopting advanced techniques (ranked 18).

Similarly, Abulghasim (2006) pointed out that the most important factors that hindered the diffusion of management accounting systems in Libyan state-owned manufacturing companies are: management accounting education, lack of up-to-date publications in management accounting, lack of active management accounting training programmes, the inadequacy of operations managers' understanding of the role and benefits of management accounting, social, political and cultural obstacles, lack of an active professional management accounting society, the absence of foreign companies, and the lack of financial resources. It is noticeable that all of these factors are related to institutional factors according to this research framework. Other factors such as the lack of top management support, lack of management accounting research, other high priorities, and unfamiliarity with English language are found to be less important in hindering the adoption of management accounting innovation.

6. Conclusion

This study aimed to examine the extent to which MAPs are being used in Libyan manufacturing companies, and investigating the stages of management accounting evolution in the country. Eighty-one postal questionnaires with the senior financial staff, such as financial directors, financial managers, the senior management accountant of large and medium size Libyan manufacturing companies from different industrial sectors have been analysed. Then, an IFAC-based model was applied to analysis the stage of evolution of the management accounting practices in Libya.

In conclusion, the Libyan manufacturing companies rely heavily on traditional management accounting techniques, while the adoption rates of recently developed or advanced tools were rather low, slow and similar than those presented in other developing countries. Moreover, in order to identify the sophistication level of management accounting according to IFAC-Based Model , the research found that almost all of surveyed companies are located in the first stage and the second stage. However, the last two stages which are considered as the more sophisticated stages found very low between Libyan manufacturing companies. Thus, these companies are implementing MAPs which provided information for cost determination and financial control and information for management planning and control.

Finally, the reasons underlying an apparent low adoption rate of advanced management accounting techniques were explained. These reasons are related to institutional factors, the attributes of adopter and the attributes of advanced MAPs.

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