ISSN 2079-7141

UAEU Faculty of Business and Economics

UAEU-FBE-Working Paper Series

Title: **Effects of Exogenous and Indigenous contingencies on Management Accounting Choices in the GCC Countries**

Author(s): Esam E. Moustafa and John D. McLellan

Department: Accounting

No. 2010-02

Series Editor: Prof. Dr. Abdulnasser Hatemi-J

Effects of Exogenous and Indigenous contingencies on Management Accounting Choices in the GCC Countries

Esam E. Moustafa*

Department of Accounting,

College of Business and Economics,

UAE University

and

John D. McLellan

Department of Accounting

Abu Dhabi University, UAE

***Correspondence Details:**

Dr. Esam Moustafa

***Professor of Accounting, Faculty of Business & Economics, UAE University**

E-mail: essamm@uaeu.ac.ae

Tel: +9713-7133226

Fax: +9713-7632383

Effects of Exogenous and Indigenous contingencies on Management Accounting Choices in the GCC Countries

Abstract

This study aims at providing more understanding of how organizational contingency factors such as various company characteristics (including a new factor of firm's legal structure as a proxy for agency relations) may affect the choice of a particular set of Management Accounting techniques (MATs) - out of a broad range of 41 techniques- in a developing, fast growing but stable and diversified economy such as the Gulf Cooperation Council (GCC) one. The study used an online survey to collect the data from qualified management accountants working in the GCC countries. After exploring for the level of usage of the various MATs, a factor analysis combined with F-tests and/or t-tests was employed to test the effects of company characteristics on the choice of MATs. A stepwise regression analysis was then performed to explain patterns of use of MATs in relation to various firm characteristics in GCC countries. The results show that in general, MATs are not highly used in this environment, and that traditional techniques have a higher adoption rate than do the more contemporary techniques. Various company contingency factors do influence the degree of use of MATs. These results may be area specific, but the regression equations explaining the use of MATs according to different company characteristics could be tested with businesses in other places. This study would be useful to the researchers as well as the professionals in understanding more about the choice of MA practices in order to advance the profession and to promote the use of the more advanced MATs.

Keywords: Gulf Cooperative Council (GCC), management accounting practices, factor analysis, contingency factor.

1. INTRODUCTION

Contingency theory hypothesizes that the organization's structure is a function of its exogenous and indigenous context. This study uses contingency bases to argue that the set of Management Accounting techniques (MATs) chosen by an organization working in the Gulf Cooperation Council (GCC) economy during the period of years 2000-2007, is contingent on the organization's exogenous and indigenous context. The market and general economic conditions provide the exogenous environment that shapes the organization's strategy, thus contributing to its choice of a particular set of MATs. The GCC economies during that period of time was a fast growing and booming market with low level of competition and stable economic conditions.

This study tests multiple contingencies effects on those organizations' choices of MATs. Some of these contingencies such as firm size and sector have been used by previous studies -in different areas of the world. Others like firm's legal structure and ownership orientation have not or rarely been tested in previous research for similar purposes. These were chosen because of their notable presence in the GCC economic environment. Additionally, this study tries to find the link between the contingency factors included and specific MA techniques.

Hence, the aim of this study is twofold. Firstly, to empirically examine the extent to which MATs are being employed by businesses in the six Arab GCC countries? The second is to analyze the MA practices used in GCC organizations to test for the existence of statistically significant relationship between all, or some, of these various contingencies, and the level of use of MATs. The indigenous contingencies included in this study are: ownership orientation, the legal form of the organization, the sector in which it operates, and the size measured in terms of both sales and number of employees.

This research was conducted with the help of the Institute of Management Accountants (IMA) who contacted their members in each of the six GCC countries, inviting them to participate in the project.

Apart from being the first study to empirically examine the MA practices in the GCC on a wide scale bases, this study adds to the contingency management accounting literature from the international management accounting perspective that Anderson and Lanen (1999) recommended. It also introduces the firm's legal structure as a new contingency factor. This factor differentiates between family owned, incorporated, and partnership forms. This differentiation introduces an agency theory dimension within the contingency argument.

The factor of ownership orientation differentiates between locally owned firms and those that have international ownership. It has been rarely used as a factor affecting the choice of MATs. Clarke (1997) referred to it explicitly within the large manufacturing sector only and for costing systems only. And, Anderson and Lanen (1999) analyzed the effect of international competition on the internal information needs of Indian managers, which may be considered as implicitly reflecting this contingency factor. In this study we explicitly broaden the level of consideration of this factor.

The methodology used here is a response to Suliman's (2004) invitation to use rigorous statistical analysis and attempt to find statistically significant relationships between the use of certain MA techniques and particular contingency factors. Factor analysis and stepwise regression are used for this purpose.

This study should be useful to the management accounting researchers as well as the professional bodies in understanding more about the choice of MA practices in order to advance the profession and to promote the use of the more advanced MATs. It may also be of importance to MA educators in equipping their students with the relevant technical skills required in today's GCC economy.

The paper begins by outlining the economic and market characteristics of the six GCC countries, followed by a review of the relevant literature, the development of the research questions and a description of the research methodology. In the results and discussion section, the survey results are analyzed in three different dimensions: frequency of use of MATs, the effects of each of the contingencies on MATs use, and finally the significance of the relationships between the firm characteristics and the adoption of MATs. The final section summarizes the findings and suggests areas for further research.

2. The Economic Environment in the Gulf Cooperation Council Countries

The GCC is a trading bloc created in1981. It is situated between Europe, Africa, and Asia involving the six Arabian (Persian) Gulf States of Bahrain, Kuwait, Oman, Qatar, kingdom of Saudi Arabia (KSA) and the United Arab Emirates (UAE).

Prior to the global financial crises, the Gulf area had some of the fastest growing economies, mostly due to a boom in oil and natural gas revenues coupled with a building and investment boom backed by decades of saved petroleum revenues. In 2006, the nominal GDP for the GCC was $717.8 billion (IMF April 2007). In 2007, the nominal GDP was $1,023 billion (IMF April 2008).The IMF prediction was that the GDP will reach $1,112 billion at end of 2008 and $1,210 billion at end of 2009. In addition to oil revenues, inward Foreign Direct Investments (FDI) on the GCC countries increased from US$7 billion in 2000 to US$43 billion in 2007 (WIR, 2008). The GCC had a rapidly growing economy like China and other Asian countries and a close connection with many western countries in particular UK and USA.

As is well known, the GCC economies are oil dependent. Hence, their growth is highly related to oil price changes. Apart from oil, most of other goods, services and resources are imported to the area, including all types and skills of labor. Imports of goods and services were US$121 billion in 2002 and increased to US$ 376.1 billion in 2007 (IMF WE&FS May 2007). Because oil revenues accrue to the state, rather than private entities, the government usually plays the dominant part in the business environment.

> "A major characteristic of the GCC economies is their low national population and indigenous labor force. High investments have therefore been accompanied by large inflows of expatriate workers from all across the world … With the easy access to the low-cost labor force (from East Asia, Sub-Indian continent), we can expect that producers shift toward this cheaper factor of production which may explain the observed low productivity of labor."(Harb, 2009, P. 698).

According to Adams (2006) the GCC region is the third most important labor receiving region in the world (p. 2). The region statistics show that it paid expatriate labor forces an annual amount in the neighborhoods of US$20 billion between 2000 and 2004, excluding UAE which expatriates constitute over 80% of its population (P. 6). The bulk of worker remittance is repatriated, and savings are invested in housing and land rather than on productive assets in home countries rather than investment or financial market capitalization in source countries (investment in property for expatriates was restricted in GCC until recently).

The number of listed companies in the GCC countries stock markets rose from about 330 in 2002 (Onour 2007) to 642 in 2007 according to the Arab Monetary Fund statistics, However, Onour (2007) found that the "dominance of non-observable, speculative factors over the role of economic fundamentals in GCC capital markets raise doubts about the constructive and beneficial role these markets can play in the economies of the region" (p. 180). According to Al-Hassan et al, (2007)all forty seven IPOs issued in the GCC countries during the period 2001-2006 did not include any manufacturing firms. The types of companies that are publicly traded and dominate the stock markets are largely banks, real estate, construction and communications companies (Hammoudeh & Choi, 2007.)

The UN World Economic and Social Survey report 2006 states that growth - particularly employment growth- up to 2003 has been concentrated in low productivity services with agriculture and industry remaining nearly stagnant (P.74). IMF Survey (2000) states that GCC countries follow diversification into entrepôt trade, financial services, and light industry, traditional sectors are trade, construction, and services. The Trends in Sustainable Development Report (2006) stated that the GCC countries, except OMAN, are still amongst the more costly places to start small-medium entrepreneurial businesses. Businesses in GCC enjoy a very favorable tax system –according to the World Bank Group's Doing Business Report 2010, all of the six GCC countries are ranked amongst the top thirteen countries of the world where it is easy to pay taxes. Since 2003 the GCC countries apply a unified customs tax system with only a maximum of 5% customs tax on all imported goods with all industrial requirements fully exempted from customs. The economic progress in GCC countries has been achieved with an open exchange and trade system and liberal capital flows, as well as open borders for foreign labor. The GCC area has become an important center for regional economic growth.

Therefore, the GCC has a unique business community comprising of "national" family owned or public businesses, branches of large multinational businesses partnerships and many joint ventures between local and international companies. Ownership in this part of the world is still largely non-diffused as against what is in the western (Anglo-Saxon) economic environment, where ownership is wide-spread in the hands of many shareholders because GCC financial markets (with the exception of Kuwait) were established as formally regulated markets only after the year 2000 (Onour, 2007).

Family and Government holder-ship is still pervasive. Hence a fewer number of incorporated companies. In terms of size, large companies are not as common as they are in the west. However, a few companies in the Gulf are very large (and growing). Manufacturing is relatively nascent here and the services sector is growing much faster, which is not different from the global trend.

With all the cash inflows into these economies, freedom of market entry and reliance on imports without any significant customs or income tax, firms working in the GCC between the years 2000 and 2007 period have been enjoying a stable and growing market, low production factor cost, and no sever competition in most sectors. Because of access to cheap labor firms did not have to look for the more advanced technologies for reasons of cost reduction. All GCC countries have their currencies pegged to the US dollar with fixed exchange rates which contributes significantly to the stability of their markets.

Official comprehensive statistics are not available but it is believed most business organizations in the Gulf are set up to mimic the organizational structures that exist in western economies. However, it is likely to find clear differences in the actual operationalisation of these structures, particularly when compared to Anglo-Saxon economic environments such as the US and the UK. Key reasons for this will include history, culture, the way the society is/has evolved and governmental sector involvement

in business. Management accounting practitioners in the Gulf are mostly American CMA holders predominately from countries in Asia or other Arab countries.

3. LITERATURE REVIEW

To date, there have been many studies conducted by academics in countries around the world that examined the use of MATs. This review is limited to those considered as relevant to this research.

3.1 MA Studies From the West

The academic literature regarding the use of MATs by companies in the west have centered on the issue as to whether or not the various MA practices are of any value to business practitioners. Scapens (1983) first discussed the apparent gap between the theory of management accounting as contained in the conventional accounting textbooks and the actual practice of those MA concepts by businesses. The argument was developed into one of the relevancy of management accounting to business operations in general by Kaplan and Johnson (1987). Again in 1988, Scapens (1988) called for research to generate a better understanding of management accounting practices. Dugdale (1994) surveyed 140 active members of the Chartered Institute of Management Accountants (CIMA) in Britain on their use of management accounting techniques and concluded that there does seem to be a gap between the theory and practice of MATs and techniques.

Many studies to date have been conducted, describing MA practices of businesses. In the USA by Ernst and Young (2003), the UK, (Abdel-Kader and Luther 2006 and 2008; Bhimani 1996; Burns et. al 1996, 1999), Ireland (Clarke 1997), Australia (Chenhall and Langfield-Smith 1998), New Zealand (Lamminmaki and Drury 2001) and South Africa (Weweru et. al 2005). Clarke (1997) in his study of the costing systems of large manufacturing companies in Ireland concluded that there is a significant gap between theory and practice. He also classified the companies as indigenous Irish versus subsidiaries of multinationals, by industry, by annual sales and by the number of products produced, however he made no attempt to statistically analyze results related to these various corporate characteristics. Chenhall and Langfield-Smith (1998) surveyed 140 large Australian manufacturing companies and found that traditional management accounting techniques were more widely adopted than recently developed techniques. They called for a better understanding of the factors that influence adoption of MATs, particularly the newer ones and mentioned that "some 'western' innovations may not be developed readily in various European countries because of cultural and historical differences in the development of costing systems."

Management Accounting European Perspectives outlines the management accounting practices of business in many European countries (Virtanen et. al 1996; Torrecilla et. al 1996; Groot 1996; Israelsen et. al 1996; Bruggeman et. al 1996; Barato et. al 1996; Ballas and Venieris 1996; Ask et. al 1996; Lebas 1996). Torrecilla's et al (1996) study of Spanish companies found that internal accounting practices differ among companies depending on the industry sector and also concluded "there are size related issues" between companies that affect the adoption of MATs, but they did not attempt to explore the issue further. Merchant (1981) investigated nineteen companies in the electronics industry and concluded that use of the MA budgeting techniques was related to corporate size, diversity and degree of decentralization. Abdel-Kader and Luther

(2008) investigated the impact of multiple firm characteristics on management accounting practices in the British food and drinks industry. They used cluster analysis and other statistical techniques in their investigation to conclude that differences in MA sophistication are significantly explained by some environmental uncertainty, customer power, size and decentralization, while other contingencies such as process complexity and competitive strategy did not.

The reporting of results on the use of MATs in "western" countries has mostly been based on percentages and frequencies. There has been little attempt to delineate the use of MATs by various company characteristics simultaneously. Studies of MA practices in the developing countries of Asia on the other hand have a different focus and are presented next.

3.2 MA Studies From the East

Anderson & Lanen (1999) examined the effects of economic transition in India on the evolution of MA practices and found evidence of changes associated with shifts in the external environment. Many of their results bear significance to this study. They suggested that a firm following a defender's strategy adopt less dynamic structure than those who follow a prospector's strategy. They need environmental scanning less, focus more on efficiency, compete by producing low cost goods and use routine technology. They also suggested that for firms with international partnerships the top management of the "foreign" partner has as great or greater role in strategy development as the local management, and that local organizations place more emphasis on competitor benchmarking and on cost data.

Sulaiman et al (2004) examined the extent to which contemporary and traditional MATs are being adopted in Malaysia, Singapore, China and India. They found that not only was the use of contemporary techniques lacking in all four countries but also that survey respondents perceived that the benefits that accrue from using traditional MATs were "very high". They concluded that in the Asian countries there is a need for future studies in the use of MATs to be grounded in theory and not merely exploratory and descriptive. They call for a rigorous statistical analysis of results in an attempt to examine specific factors as to why firms in Asia adopt certain MATs. These countries have economies at different stages of development and there is a need to examine the rate of adoption of various MATs in relation to the nature and size of the companies. They also advocate the use of a consistent data collection instrument across the surveyed countries in examining for the use of MATs.

A subsequent study (Xiao et. al 2007) on the use of MATs in China attempted not only to establish if there had been an increase in the use of MATs by businesses in China but also to examine if there was a difference in use depending on the businesses' location in China, the industry type and the size of the business. They found that in general there had been an increase in the use of MATs but that the various degrees of regional economic development in China had little impact on that use; however, based on their observations, they concluded that larger firms and firms in the manufacturing sector are more likely to have implemented management accounting methods.

The issues raised by academics from both the West and the East as to the need for a more in-depth analysis into the reasons why certain companies find certain MA practices more useful give rise to our research questions.

4. DEVELOPMENT OF THE RESEARCH QUESTIONS

Management Accounting is a body of knowledge comprising of a number of concepts, techniques and tools that have evolved and continue to be developed by MA researchers. Research in MA expects that in the 21st century techniques like ABC, target costing, EVA, value chain costing, BSC, and Non-Financial performance measures will be the most useful tools for costing, pricing in competitive markets, product and customer profitability as well as strategic cost management. Researchers also expect the exogenous and indigenous contingencies to have an effect on the set of MATs adopted.

Following the agency theory and agency cost concepts, and defining the firm as a set of contractual agreements means that the set of MA practices chosen by the organization is an outcome of those complex relations (Jensen & Meckling1976). Hence the level of separation between ownership and management is bound to affect the choice of MATs. Thus, it is expected that family or privately owned firms will use cheaper MA practices; while incorporated firms will have more agency problems a need to use more sophisticated costly practices.

The environment in GCC was one of steady growth, stable currency, free price setting, high demand and free flow of cheap labor. According to the contingency literature (see Chapman 1997and Hoque 2005). This environment of very low uncertainty allows the possibilities of pre-planning and the firm objectives can reasonably be expected to be short-term profitability and cash flow or expanding their market share. Such circumstances would allow the majority of firms working in the GCC during the stated period to be mechanistic rather than organic organizations. Thus, according to Chapman's terminology, accounting systems in such a situation would be of the "answer/ammunitions machines" type, depending on the clarity and certainty of the organization's objectives (Chapman 1997, P 201). In such circumstances techniques like non-financial measures of performance may not be highly required. On the other hand, the Hofsteed's index of national cultures showed Arabs not having a high tolerance for uncertainty (68%), this means locally owned firms in the Gulf would be expected to invest more in budgeting and long-term uncertainty avoidance techniques.

Baines & Langfield-Smith (2003) results supported a hypothesis that a change towards a differentiation strategy- as a response to more competitive environment- will result in the increased use of advanced management accounting practices. The GCC economic environment can not be classified as highly competitive. Hence, advanced MA techniques are not expected to be highly used in the GCC business.

Govindarajan and Gupta (1985) concluded that short-term measures (such as short term profit, cash flow and cost control) are equally relevant to firms that have a "build" strategy as well as those that have "harvest" strategy, while long-term measures (such as market share and sales growth) are used more in firms following a build strategy. Many

of the firms in the GCC countries are more likely to be following build strategies because the GCC economy as a whole can be considered a young one. Branches of international firms have recently entered this market and incorporated firms started to appear in the GCC less than ten years ago. Hence, both short-term and long-term measures are expected to be widely used in GCC firms.

It has been generally accepted in the literature that increased firm size brings decentralization needs and leads eventually to a need for sophisticated information systems (Lal & Hassel, 1998).

Therefore, one may generally expect that in the GCC countries during the period 2000-2007 firms were less concerned with using sophisticated MATs and costing techniques. Also, because of cultural rather than environment stability long-term and uncertainty avoidance techniques are expected to have been in frequent use in the GCC businesses.

The following company characteristics were chosen as indigenous factors for this study:

1. The Ownership orientation (Branch of International Company vs. Locally Owned).
2. The various Corporate Legal Structures (Incorporated, Partnership/Joint Venture, and Family Owned).
3. The Industry Sector (Manufacturing vs. Service).
4. The number of Employees (Small, Medium, and Large).
5. Annual Sales. (Small, Medium, and Large)

Previous studies have used size, sector and ownership (international vs. local) as company characteristics (for example Clarke 1997; Xiao 2006). The various corporate legal structures (Incorporated, Partnership/Joint Venture, and the Family Owned) were added as a characteristic worth studying because of the GCC economic development and market characteristics.

The research questions of interest then become:

1) Which of the various management accounting practices and techniques are being used more extensively than others by businesses in the GCC area?
2) Are there any relationships between the management accounting techniques used and the various characteristics of the companies that are using them?

The methodology used to answer theses questions is presented next.

5. RESEARCH METHODOLOGY

A list of broad range forty-one MATs and techniques was compiled and survey questions were developed (Appendix 1) to assess the degree to which a particular management accounting technique was used by the respondent's company. The questions were adapted from other studies (Chenhall and Langfield Smith 1998, Clarke 1997, and Xiao et el 2006) and categorized into five groups based on the experience and knowledge of

the authors: Budgeting Techniques, Control Techniques, Performance Evaluation Techniques, Decision Information Techniques, and Strategic Analysis Techniques.

A Likert scale was employed from 1 (Never used) to 5 (Very Often). The survey questionnaire was uploaded to a software program called Surveymonkey. The IMA was contacted and agreed to invite the 453 CMA's in the Gulf region to participate in the *Survey of Management Accounting Practices in the GCC* area and provided them with the link to the survey questions. The number of CMA's and IMA members in the GCC is presented in Table 1 along with the number of respondents.

Table 1 about here

The software program recorded that two hundred and seventy one responses were received. After exclusion of not usable responses, this analysis is based on response from one hundred and fifty three GCC companies. Therefore the response rate for this survey is approximately 34% (153 out of 453). Similar surveys of CMAs in the United States conducted by Ernst & Young (2003) had response rates of 9% . The majority of companies (75%) are from the UAE and Saudi Arabia (Table 1). Yet, the distribution of respondents by country is similar to that of the CMA, (Chi-Squared = 7.01 with 5 degrees of freedom, corresponding to a p-value of 0.220).

Data analysis started by ranking the MATs used, based on the mean in order to answer the first research question. Then, factor analysis was conducted to reduce complexity in the data so as to answer the second research question. Results of the factor analysis were further examined in two ways. Firstly, the means of the MATs groups (factors) as dependent variables were tested against the five categories of company characteristics -the independent variables- in order to determine if significant differences existed. Then, a stepwise regression analysis was performed, in order to develop an equation explaining the degree of usage of each of the MA factors based only on the company characteristics that are significantly different from the population.

6. RESULTS AND DISCUSSION

6.1 Description of Responding Companies

Table 2 about here

As Table 2 indicates, a predominant number of businesses in the GCC are in the service or trade merchandize sector (80%); are incorporated (47%) and are locally owned by business people who are nationals (61%) rather than by foreigners. The majority of companies (62%) have up to 1000 employees and less than one billion AED (about $275 million) in annual sales (67%).

Table 3 presents a summary of cross tabulations between the different company characteristics.

Table 3 about here

The results of the cross tabulations indicate some interesting patterns such as:

- Of locally owned companies 78% are in the service industry, 43% are companies with more than 1000 employees and 33% have sales greater than one billion AED.(Table 3A)

- 49% of the international branches are incorporated companies, of these 83% are in the service industry and 67% reported sales in excess of one hundred million AED.(Table 3A)
- 68% of manufacturers are locally owned, with 58 % having less than 1000 employees and 75 % with sales less than one billion AED.(Table 3B)
- 81% of incorporated companies are in services, representing the largest in terms of employees (39%) and sales (38%).(Table 3C).
- There is a high degree of association between the number of employees and reported sales; Spearman correlation coefficient = 0.642. Thus, both measures of size are in good agreement. (Table 3D).

6.2 Ranking of Management Accounting Practices in the GCC

The MATs were ranked by mean "use" corresponding to the Likert scale used (Table 4). The average of all of the forty-one means of MATs was 3.4 with a standard deviation of 0.45. Therefore, one standard deviation above the mean would be 3.85 and one standard deviation below would be 2.95. The rankings of use of MATs were then categorized as those that have an extremely high adoption rate (means greater than 3.85); those that have a relatively high adoption rate (means between 3.4 and 3.85); those that have a medium adoption rate (means between 3.4 and 2.95) and finally those that have a relatively low adoption rate (means below 2.95).

Table 4 about here

The five top ranked techniques (Table 4A) are the budgeting ones. Budgeting techniques were identified as the most important for business operations by companies in other countries (Xiao 2006, Chenhall and Langfield Smith 1998, Dugdale 1994).

The next grouping of frequently used techniques (Table 4B) is also measures of financial performance. Budgeting for control, product costing, product profitability, and variance analysis are all techniques that have relatively high adoption rate by business in the GCC. This group, along with the first group reflects a high concern by management in GCC countries for short term planning and control of operations. It also suggests that companies pay a lot of attention to short term profitability in performance and product evaluation. Again the result of this study is similar to the results in Australia (Chenhall and Langfield 1998), in China (Xiao et el), in America (Earnst & Young 2003), in Demark (Israelsen et el, 1996), in Belgium (Bruggeman et el., 1996) and the Netherlands (Groot, 1996).

The less frequently used MATs are both financial such as performance evaluation based on ROI, Activity Based Budgeting, discounted cash flow analysis, variable costing analysis and non-financial such as customer satisfaction, supplier evaluation, competitor analysis and benchmarking.

The techniques that have a longer term focus such as product life cycle, activity based costing, economic value added and cost of quality techniques were rarely used by companies in the GCC.

In summary, the more traditional financial performance MATs such as budgeting, variance analysis and profit based performance were all highly adopted by the respondents in this survey. The more recently developed cost management and performance evaluation techniques such as ABC and the balanced scorecard have low adoption rates. This same result was found in the Chenhall and Langfield study (1998), the Earnst and Young study (2003) and Xiao et el (2006).

6.3 Factor Analysis and Tests of the Indigenous Factors Effect

To probe deeper into the data in order to answer the second research question, a factor analysis was conducted using the results of the responses on the 41 questions. This analysis identified eight factors or groupings as presented in Table 5; each factor is related to a Management Accounting function and each having a reliability coefficient (Cornbach's alpha) in the range 79-91% (Table 5).

Based on the contingency theory, the authors postulate that branches of international companies will make more use of the control and strategic analysis techniques than would locally owned companies because international companies need to have controls over their branches. Local companies may replace formal control techniques by the presence of their owners when they are family owned. International companies need to have a continuous assessment of their strategies to make long term decisions about continuing in or pulling out of this market. Local companies will be more focused on short-term profit maximizing decision techniques.

It is also expected that incorporated companies use more planning techniques than partnerships and family owned companies. Manufacturing companies will have higher level of use of product costing and advanced cost techniques than service companies. Larger companies in terms of employees will use control and performance evaluation techniques more so than smaller companies, while larger companies in terms of sales will use market and profit based techniques more so than smaller ones.

All firms are expected to have frequent use of budgeting for planning and short term decision making techniques, while long-term techniques are expected to be used more frequently in firms with international ownership and incorporated firms than others since they are expected to be adopting a build strategy.

Table 5 about here

The eignvalue (EV) in table 5 represent the variances of the respective factors, the following column gives the percent of total variation explained by each factor whereas the reliability represents Cornbach's alpha for the survey questions comprising each factor. The data can now be analyzed using both the results of the factor analysis as well as the means for the respondent's use of a particular MA technique. In addition, the results of the factor analysis can be examined in two ways: the effects of the eight factors measured against company characteristics; and the use of a stepwise regression analysis to assess the degree to which a group of MATs are used according to the various company characteristics.

The first part of the analysis (sections 6.3.1 – 6.3.5) presents and discusses the results of testing the effects of each of the eight factors against each one of the independent variables separately as follows:

1. The two ownership orientations (Figure 1)
2. The three forms of corporate legal structures (Figure 2)
3. The two industry sectors (Figure 3)
4. Company size based on the number of employees (Figure 4)
5. Company size based on annual sales in AED (Figure 5).

The second part (sections 6.4) develops the regression equations that can be used to assess the mean use of a group of MATs according to various company characteristics.

Typically, the factor scores are standardized to have zero means and unit standard deviations. For our purposes in the sequel, the factors were rescaled to have means proportional to the means of the survey items corresponding to each factor and standard proportional to the square roots of the eigenvalues corresponding to each factor.

6.3.1 Effects of ownership orientation on use of MATs

Figure 1

The first two rows in Figure 1 give the mean use for each factor by type of ownership, whereas the p-values correspond to t-tests of the means of locally owned companies versus branches of international companies.

The factors for which there is a difference at the 0.05 significance level are BP, BC, PE, STDM and SAT. The Accountants of internationally owned companies indicate a greater use of these groups of MATs more so than does the Accountants of locally owned companies.

There is a significant difference in the use of budgeting for planning and control and the use of performance evaluation techniques. The emphasis for internationally owned companies appears to be short-term profit planning. The significant difference in the Short Term Decision Making factor may be a result of their employment of professional managers who would be more concerned with short-term profits and rely more on numbers. The difference in the Strategic Analysis factor may point to the fact that in this GCC growing economy the strategic thrust of international companies is to penetrate the market as much as possible to capture market share.

There is no significant difference between international and locally owned companies in the use of PCM (average) and ACT (below average). These techniques may be of more significance to companies that are in a mature market economy rather than companies in a growth market economy. Also, this result may be due to the fact that the market is dominated by service companies. Both are low on the use of LTDM (capital budgeting) techniques. This could be a result of the stability of the market or because they are not making many new investment decisions. The fact that locally owned firms do not more frequently use budgeting, LTDM and SAT techniques is against the cultural expectations based on Hofsteed's index. This may be due to the employment of Non-Arab managers and accountants, who introduce different cultural effects into those firms.

6.3.2 Effects of legal structures on use of MATs

Figure 2

The first three rows in Figure 2 give the mean use for each factor by type of legal structure, whereas the p-values correspond to the F-test of the means of the 3 categories of legal structure. The last three rows in this figure show the p-values of the respective three t-tests of pair-wise comparisons.

Comparing types of legal structure, there is a significant difference (0.05 level) in the use of BP and BC and at the 0.10 level for PE, STDM, LTDM & SAT. The factor means for incorporated companies are very close to that of partnerships/joint ventures but both seem different from those of family owned companies. In fact, there is no significant difference between partnerships and incorporated companies; however there are significant differences between partnerships and family owned companies on BP, BC, STDM, and SAT; and between incorporated and family owned companies on BP, BC, PE, STDM, LTDM and SAT.

Recall that the cross-tabulation analysis (Table 3A) showed that a significant number of the partnerships in the Gulf are linked to international companies (like franchises and joint ventures). Considering the shape and position of the partnerships/joint ventures line, it may reasonably be assumed that those partnerships involve at least one but most likely two incorporated companies. The existence of a western management style element in these companies explains why the partnerships/joint venture line is so high and close to that of incorporated companies. However, it may look surprising to see that family owned companies use PCM techniques more than incorporated ones. This is explained by the fact that many of them are in manufacturing while incorporated companies are more in the service sector. The low use of MATs by family owned firms agrees with the agency theory explanation introduced earlier, but can also be seen as due to their smaller size (table 3C).

6.3.3 Effects of industry sectors on use of MATs

Figure 3

The first two rows in Figure 3 give the mean use for each factor by sector, whereas the p-values correspond to t-tests of the means of manufacturing companies versus service companies.

The comparison of factor means between manufacturing and service companies points only to one significant difference at the 0.05 significance level - that of the use of Product Costing Measurement (PCM). This is a reasonable expectation given that manufacturing companies would have a greater use of product costing than would a service company. However, it may be noted that even within the manufacturing sector the use of PCM is not as high as one would expect (the mean is less than 4).

Table 3B indicated that most manufacturing companies are medium in sales, large in terms of employees and either family owned or incorporated. Whereas, service companies are mostly small in sales, medium to large in number of employees and incorporated. The fact that service companies are higher than manufacturing in the use of PE can be explained by one or all of the following:

- the fact that service companies face higher competition in the Gulf;
- that there is the need to evaluate the performance of a large number of employees; and
- that incorporated companies tend to have more professional management who possibly employ more MATs.

6.3.4 Effects of company size in terms of number of employees on use of MATs

Figure 4

The first three rows in Figure 4 give the mean use for each factor by size based on number of employees, whereas the p-values correspond to the F-test of the means of the 3 categories of size. The last three rows in this figure show the p-values of the respective three t-tests of pair-wise comparisons.

There are significant differences at the 0.05 significance level in the use of MATs among companies categorized by the number of employees. These differences are in the BC, PE, PCM and LTDM factors. On a closer look, the most significant differences are between companies with 1-200 employees and companies with more than 1000 employees, particularly in the use of BC, PE and LTDM. This is an issue of control over operations and a greater use of long term planning techniques for the management of larger companies as compared to smaller companies. Interestingly, there is a significant difference in the use of PCM between small and medium size companies but no significant differences between medium and large companies. This could be because more of the small companies are in the service than there are in the manufacturing sector and more of the manufacturing ones are medium to large size (table 3B).

6.3.5 Effects of company size based on annual sales on use of MATs

Figure 5

The first three rows in Figure 5 give the mean use for each factor by size based on annual sales, whereas the p-values correspond to the F-test of the means of the 3 categories of sales. The last three rows in this figure show the p-values of the respective three t-tests of pair-wise comparisons.

There are significant differences in the PE (0.01) and LTDM (0.09) based on the annual sales of companies. The major difference is between companies with sales less than 100 million AED and companies with sales greater than one billion AED. Large firms use MATs in both PE and LTDM factors to a greater extent than small companies. This is similar to the results obtained when companies' size is measured by the number of employees, and supports the results in Figure 1 which suggests that managers are short-term orientd for performance evaluation reasons.

In the second stage of this factor analysis, a stepwise regression analysis is conducted.

6.4 Regression Equations to explain the use of MATs

For this part of the analysis, the dependent variables are the factors Y_1 = BP, Y_2 = BC, Y_3 = PE, Y_4 = PCM, Y_5 = ACT, Y_6 = STDM, Y_7 = LTDM and Y_8 = SAT. The independent variables are the five different categories of company characteristics:

Z_1- denotes ownership (international branch; locally owned).

Z_2 – denotes the legal structure (incorporated; partnership/joint venture; family owned).

Z_3 – denotes sector (service; manufacturing).

Z_4 – denotes size as measured by the number of employees (1-200; 201-1000; > 1000).

Z_5 – denotes size as measured by annual sales (under100M; 100M-1B; above 1 B).

In order to carry out the regression analysis, the five independent variables are represented by eight indicators (X_1-X_8) as follows: for ownership, X_1 represents a branch of an international company; for legal structure, X_2 represents an incorporated company and X_3 represents a partnership/joint venture; for sector, X_4 represents a service company; for employees, X_5 represents a small size (1-200) company and X_6 represents a medium size (200-1000) company; for sales, X_7 represents a small size (<100 M) company and X_8 represents a medium size (100 M-1 B) company.

The overall model for each of the dependent variables would be:

$$\mathbf{Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \varepsilon,}$$

where ε denotes the random error. A stepwise regression analysis was employed to develop a regression equation. In each equation only the significant indicators of company characteristics were included. For readers who wish to see the full values of the stepwise regression, first iteration values and R are reported in Table 6 in the appendix. The results are reported at the 0.05 significance level. The authors are not seeking a predictive model that would predict the set of MATs that a company with certain characteristics would use. Rather, this model seeks to explain the effect of those characteristics on the use of MATs. Hence, the multi-regression results will indicate that some characteristics (the significant ones) will enhance (or apprehend) the chances of some techniques to be used.

6.4.1 Budgeting for Planning Techniques (Y_1)

$BP = 3.73 + 0.40\ X_1 + 0.37\ X_2$

where

X_1 = 1, if the company is a branch of an international company

= 0, otherwise,

X_2 = 1, if the company is incorporated

= 0, otherwise.

The overall mean usage of BP is 3.73. However, if the company is a branch of an international then it would have a mean of 4.13 (3.73+0.40); if it is incorporated it would have a mean of 4.10 (3.73+0.37). Therefore, if a company in the GCC is an incorporated branch of an International company this model would suggest that the BP factor mean would approximate 4.50 (3.73+0.40+0.37), indicating that the management of such

companies use the Budget for Planning to a great extent. This result agrees with the general MA expectations that budgets are needed for planning in all cases (3.73) but it is expected that the more decentralized the companies' operations the more management will use budgets to communicate objectives and set targets for its segments. It also agrees with Figures 1 and 2.

6.4.2 Budget for Control Techniques (Y_2)

$BC = 3.50 + 0.50\ X_1 + 0.45\ X_2 - 0.61\ X_5$

where

$X_5 = 1$, if the company has up to 200 employees

$= 0$, otherwise.

All companies still use budgets to control operations (3.50). However, the model indicates that if a company in the GCC has less than 200 employees then it would have a factor mean of 3.50-0.61 or 2.89 reflecting limited use of the BC. On the other hand, if the company is an incorporated branch of an international company it would be using budgeting to control operations regularly and consistently (4.45). This also agrees with academic's expectations that decentralized companies use budgets for control (Merchant 1981 and 1984) as well as for planning. Companies with small numbers of employees do not need to control employees' actions to the same extent.

6.4.3 Performance Evaluation (Y_3)

$PE = 3.29 - 0.50\ X_7$

where

$X_7 = 1$, if the company's sales are less than one hundred million Dirham

$= 0$, otherwise,

Although all companies use performance evaluation techniques to some extent, those with sales less than one hundred million AED are singled out as significantly less users of the techniques than other companies. When it is noted from Table 5A that the performance evaluation techniques are mostly related to profit measurement then it may be concluded that companies in the Gulf are more short term profit oriented in evaluation of their corporate performance than they are in long term strategic performance measurement (Q22, Q23 & Q24) which are listed in Tables 5C& 5D as being the least used techniques. These results contradict the advice of academics that a variety of performance evaluation techniques should be employed when evaluating corporate performance – techniques that are both short term & long term as well as financial & non financial. The MA literature warns against using only shot term profitability techniques to evaluate and reward management.

6.4.4 Product Costing Measurements (Y_4)

$PCM = 3.58 - 0.50\ X_4 - 0.54\ X_5$

where

X_4 = 1, if the company is a Service company

= 0, otherwise.

Overall, the use of PCM in the Gulf is not high (3.58), which is understandable in a rich economy that has high consumer purchasing power because firms may be able to recover deficient costs and thereby reduce their need to control costs. It is logical that manufacturing companies need product cost measurement more than service organizations. However, service companies unless they are small, still use PCM sometimes (3.58-0.50 = 3.08) which is a good indication that product cost measurement is not completely absent in the GCC even though it is not widely used. Recalling that companies with a small number of employees are very likely to have low sales (Table 3D), then it can be expected that these companies may not be interested in using formal PCM techniques such as job or process costing systems.

6.4.5 Advanced Costing Techniques (Y_5)

$ACT = 2.95 - 0.41 X_5$

Companies in the GCC have little use for the Advanced Costing techniques. In a business environment where PCM techniques are not widely used, one would not expect to find the more advanced costing techniques being employed. The average mean response of CMAs for the use of such techniques is 2.95, however for small companies the estimated mean would be 2.54.

6.4.6 Short Term Decision Making Techniques (Y_6)

$STDM = 3.08 + 0.49 X_2 + 0.57 X_3$

All companies use the short term decision making techniques to some extent (less frequently used) but partnerships and incorporated companies do more so (3.57 and 3.65, respectively). This result can be linked to the relatively low use of the PCM, since the techniques here are all dependants on cost classification and cost behavior. Partnerships and incorporated companies differ significantly from family owned businesses in the use of these techniques since those companies are more likely to have professional management who make decisions more formally than managers in the family owned companies. The result agrees with Govindarajan & Gupta (1985) who showed that short term measures are equally relevant for firms that follow either “harvest” and “build” strategies.

6.4.7 Long Term Decision Making Techniques (Y_7)

$LTDM= 3.29 + 0.33 X_2 - 0.64 X_5 - 0.57 X_6$

This group of MATs comprises mainly capital budgeting techniques such as NPV, IRR, risk and profitability analysis. It is not surprising to see that larger companies use these techniques more often than smaller companies. Incorporated companies use it more

than unincorporated ones (3.62 vs. 3.29) and small & medium size companies (in terms of employees) use it less (2.65 & 2.72). Benchmarking on Govindarajan & Gupta (1985) the results indicate that incorporated companies in this region are following "build" strategy. This is reasonable considering the short period of time the incorporated firms existed in the GCC.

6.4.8 Strategic Analysis Techniques (Y_8)

$SAT = 3.06 + 0.39\ X_1$

The overall use of SAT is low for most companies in the GCC. However, the model indicates that branches of international companies use Strategic Analysis techniques more often than other companies. The model suggests a factor mean use of 3.45 for companies that are branches of an International company operating in the GCC. This fact supports the suggestion that internationally owned companies, more so than locally owned companies are focusing on obtaining market share in the growing GCC market.

Table (7) summarizes these relationships

Table (7) about here

Reflecting on the postulations presented earlier, using the results of factor analysis (Figure1 – Figure5) and the regression model ($Y_1 - Y_8$) one may observe that the results agree with the first expectation on the use of control and strategic analysis techniques but not on short term decision making techniques, with both types of companies rarely use advanced costing techniques, (Figure 1, Y_2 and Y_8). Also results showed that family owned and local companies use budgeting for control much less frequently than international incorporated ones, (Figures 1 and 2). The results also agree with the second expectation that incorporated companies use planning techniques more, (Figure 2 and Y_1). The results agreed with the third expectation that manufacturing companies use more of costing techniques, but not on the advanced costing techniques, (Figure 3, Y_4 and Y_5).

Results agree with the expectation on the use of control and performance evaluation techniques for both large and medium size companies – in terms of employees- (Figure 4, Y_2, and Y_3) noting that small companies affected the means negatively. Bearing in mind that many of the performance evaluation techniques mentioned in the survey are market and profit based, the results agreed with the expectation (Figure 5) in the form that smaller companies in terms of sales affect the use of performance evaluation techniques negatively (Y_3).

CONCLUSION

Other studies conducted on the use of MATs, targeted segments of business operations such as large manufacturers, companies in specific industries, public companies or companies in certain regions within a country, and a limited set of contingencies. In contrast, this study surveyed CMA's employed in a variety of companies of different sizes, industries, ownerships and legal structures (as a proxy for agency factors) from six different countries.

The ranking of MATs used by companies in the GCC, indicate that traditional MATs such as the use of budgets have a higher rate of usage than do the contemporary techniques such as activity based costing and the balanced scorecard.

Results showed that the overall use of MATs by the GCC firms, with the exception of budgeting techniques, is not high. This could be due to the low uncertainty and competition and the high stability of this market. However, we can also conclude that the level of use of MATs in the GCC firms is affected positively and significantly by the company's ownership orientation and legal form and negatively and significantly by the factors related to size and sector. Overall, international ownership and incorporation tend to increase the use of MATs, especially budgeting for planning and control and short-term decision making techniques. Smaller size (in terms of employees and sales) and service sector companies tend to reduce the use of MATs especially with regards to budgeting for control purposes and performance evaluation, and service companies reduce the use of product costing techniques significantly. Hence, it seems reasonable to conclude that company characteristics can be used to explain the level of use of MATs.

This study has resulted in the development of regression equations assessing the mean use of groups of MATs by companies in a developing economy, based on the various company characteristics that showed the existence of a pattern that may be used to explain the MATs choices by various companies. It is recommended for future research on the use of MATs to combine agency factors as part of the contingencies considered. The fact that Internationally owned firms had significant differencies from locally owned ones suggests that an element of cultural effects is present.

The GCC results should be generalized cautiously not only due to the small number of responding companies but also because the R squared is low as shown in table 6. This may mean that the choice of using each individual tool may not be explained by the chosen independent variables completely; there may be other factors such as the accountant's knowledge, management preference and/or the cost and benefit of the technique. Or, that each technique was not sufficient to provide a wide span of information to management and that additional techniques were necessary. This may be supported by the wide spread use of budgeting because it is one technique that serves many purposes. However, the survey instrument used in this study could be employed by researchers in other developing economies; countries that have a mix of locally and internationally owned companies as well as a combination of legal forms. The regression equations developed in future studies can be readily compared to the GCC results.

REFERENCES

Abdel-Kader, M., and Luther, R., 2006. Management accounting practices in the British food and drinks industry. *British Food Journal* 108 (5):336-357.

Abdel-Kader, M., and Luther, R., 2008. The impact of firm characteristics on management accounting practices: A UK-based empirical analysis. *British Accounting Review*, 40, 2-27

Adams, Richard H. Jr., 2006. MIGRATION, REMITTANCES AND DEVELOPMENT:

Anderson, Shannon W. and Lanen, William N., 1999. Economic transition, strategy and the evolution of management accounting practices: the case of India. *Accounting, Organizations and Society* 24, 379-412

Ask, U., Ax, C., and Jonsson, S., 1996. Management Accounting in Sweden: From Modern to Post-Modern. In *Management Accounting: European Perspectives*, edited by A. Bhimani. Oxford: Oxford University Press, 199-217.

Baines, A. & Langfield-Smith, K., 2003, Antecedents to management accounting change:a structural equation approach, Accounting, *Organizations and Society* 28, 675–698

Ballas, A., Venieris, G., 1996. A Survey of Management Accounting Practices in Greek Firms. In *Management Accounting: European Perspectives*, edited by A. Bhimani. Oxford: Oxford University Press, 123-140.

Barato, M., Collini, P., and Quagli, A., 1996. Management Accounting in Italy: Evolution within Tradition. In *Management Accounting: European Perspectives*, edited by A. Bhimani. Oxford: Oxford University Press, 140-164.

Bhimani, A., 1996. Management Accounting in the United Kingdom: Reflections on Research, Practice and the Profession. In *Management Accounting: European Perspectives*, edited by A. Bhimani. Oxford: Oxford university Press, 218-242.

Bruggeman, W., Slagmulder, R., and Waeytens, D., 1996. Management Accounting Changes: The Belgian Experience. In *Management Accounting: European Perspectives*, edited by A. Bhimani. Oxford: Oxford University Press, 1-30.

Burns, J., Scapens, R., and Turley, S., 1996. Some further thoughts on the changing practice of management accounting. *Management Accounting Research* 74 (9):58-61.

Burns, J., Ezzamel, M., and Scapens, R., 1999. Management accounting change in the UK. *Management Accounting Research* 77 (3):28-32.

CHAMI, R., FULLENKAMP, C., and JAHJAH, S., 2005. Are Immigrant Remittance Flows a Source of Capital for Development? *IMF Staff Papers Vol. 52, No. 1*

Chenhall, R., and Langfield-Smith, K., 1998. Adoption and benefits of management accounting practices: An Australian study. *Management Accounting Research* 9 (1):1-19.

Clarke, P., 1997. Management accounting practices in large Irish manufacturing firms. *Irish Business and Administrative Research* 18:136-152.

Dugdale, D., 1994. Theory and Practice: the views of CIMA members and students. *Management Accounting Research* September:56-59.

Ernst and Young, 2003. The State of Management Accounting. *Cost and Management Updates*.

Groot, T., 1996. Managing Costs in the Netherlands: Past Theory and Current Practice. In *Management Accounting: European Perspectives*, edited by A. Bhimani. Oxford: Oxford University Press, 164-179.

Hammoudeha,S. & Choi, K., 2007, Characteristics of permanent and transitory returns in oil-sensitive emerging stock markets: The case of GCC countries, *International Financial Markets, Institutions and Money* 17, 231–245

Harb, N., 2009, Oil Exports, Non-Oil GDP, and Investment in the GCC Countries, *Review of Development Economics,* **13(4), 695–708**

Hofesteed, http://www.geert-hofstede.com/hofstede_arab_world.shtml

Hoque, Z., 2005, Linking environmental uncertainty to non-financial performance measures and performance:a research note, *The British Accounting Review* 37, 471–481

Israelsen, P., Andersen, M., Rohde C., and Sorensen, P., 1996. Management Accounting in Denmark: Theory and Practice. In *Management Accounting: European Perspectives*, edited by A. Bhimani. Oxford: Oxford University Press, 31-54.

Jensen, M. C. and Meckling, W. H., 1976, Theory of the Firm: Managerial Behavior, Agency Costs and Ownership Structure, *Journal of Financial Economics,* October, 3(4), pp. 305-360.

Kaplan, R., and Johnson, H.T., 1987. Relevance Lost: The Rise and Fall of Management Accounting. *Harvard Business School Press*.

LAL, MOHAN and HASSEL, LARS, 1998. THE JOINT IMPACT OF ENVIRONMENTAL UNCERTAINTY AND TOLERANCE OF AMBIGUITY ON TOP MANAGERS' PERCEPTIONS OF THE USEFULNESS OF NON-CONVENTIONAL MANAGEMENT ACCOUNTING'INFORMATION. *Scandinavian Journal of anagement*, Vol. 14, No. 3, pp. 259-271,

Lamminmaki, D., and Drury, C., 2001. A comparison of New Zealand and British product costing practices. *The International Journal of Accounting* 36 (3):329-343.

Lebas, M., 1996. Management Accounting in France. In *Management Accounting: European Perspectives*, edited by A. Bhimani. Oxford: Oxford University Press, 74-99.

Merchant, K. A., 1981 The Design of the Corporate Budgeting System: Influences on Managerial Behavior and Performance. The Accounting Review, Volume 56, No.4, Oct..

Merchant, K. A., 1984. InBuences on departmental budgeting: an empirical examination of a contingency model. ***Accounting, Organizations and Society, 9, 291-307.***

Onour, Ibrahim A., 2007, Impact of oil price volatility on Gulf Cooperation Council stock markets' return, OPEC Review, *Organization of the Petroleum Exporting Countries*

Scapens, R., 1983. Closing the gap between theory and practice. *Management Accounting* (January 1983):34-36.

Scapens, R.,1988. Research into Management Accounting Practice. *Management Accounting* 66 (11):26-28.

Sulaiman, M., Ahmad, N., and Alwi, N., 2004. Management accounting practices in selected Asian countries. *Managerial Auditing Journal* 19 (4):493-508.

Torrecilla, A., Fernadez, A., Quiros, J., and Mosquero, M., 1996. Management accounting In Spain: trends in Thought and Practice. In *Management Accounting: European Perspectives*, edited by A. Bhimani. Oxford: Oxford University Press, 180-198.

UN, 2008, World Investment Report 2008: Transnational Corporations and the Infrastructure Challenge

Virtanen, K., Malmi, T., Vaivio, J.,and Kasanen, E., 1996. Drivers of Management Accounting in Finland. In *Management Accounting: European Perspectives*, edited by A. Bhimani. Oxford: Oxford University Press, 54-73.

Weweru, N., Hoque, Z., and Uliana, E., 2005. A Survey of management accounting practices in South Africa. *Journal of Accounting, Auditing and Performance Evaluation* 2 (3):22-29

World Bank Group's Doing Business project, 2010, http://www.doingbusiness.org/features/taxes2010.aspx

Xiao, J., Chow, C., Duh Rong-Ruey, and Zhao, L., 2007. Management Accounting in China. *Financial Management, Dec 2006/Jan. 2007*:32-37.

APPENDIX 1

SURVEY OF MANAGEMENT ACCOUNTING PRACTICES IN THE GULF

Demographics: Questions 1-8

Survey Questions: on a scale of 1 (Never) to 5 (Very often)

Does your company:

9. develop pro-forma financial statements?
10. use budget to plan day to day operations?
11. use budget to plan cash flows?
12. use budget to control costs?
13. use budget to coordinate activities across business units?

14. perform flexible budget variance analysis on production inputs?
15. perform budget variance analysis on production inputs- direct material and direct labor?
16. perform budget variance analysis on variable manufacturing overhead?
17. perform budget variance analysis on fixed manufacturing overhead?
18. use Activity-Based-Budgeting?
19. evaluate performance based on controllable divisional profits?
20. evaluate performance based on return on investment – relating profit to investment?
21. evaluate performance based on economic value added or residual income?
22. perform benchmarking within the organization?
23. perform benchmarking with outside organizations?
24. use the balanced scorecard in performance evaluations?
25. use budget performance for compensating managers?
26. use a job costing system for product cost accumulation?
27. use a process costing system for product cost accumulation?
28. use a combination of job costing and process costing systems?
29. use a plant wide overhead rate to allocate overhead to production?
30. use an activity based product costing system?
31. use activity based costing in non production departments?
32. perform variable costing analysis?
33. perform cost of quality analysis?
34. use target costing techniques?
35. perform cost volume profit analysis?
36. develop contribution margin statements?
37. distinguish between incremental and non incremental costs?
38. evaluate major capital investments based on discounted cash flows?
39. calculate and use the cost of capital in discounting cash flows for major capital investments?
40. evaluate major capital investments based on payback period and/or accounting rate of return?
41. perform sensitivity “what if” analysis when evaluating major capital investment projects?
42. evaluate the risk of major capital investment by using probability analysis?

43. perform customer satisfaction analysis?
44. perform product life cycle analysis?
45. perform analysis of competitors strengths and weaknesses?
46. conduct formal strategic analysis?
47. perform on-going supplier evaluations?
48. perform product profitability analysis?
49. perform customer profitability analysis?

Table 1. Members counts by country, category and response, 2/1/2008 - 2/29/2008

Country	Population		Sample	
	IMA	CMA	Respondents	%
United Arab Emirates	1611	206	61	40%
Saudi Arabia	955	140	54	35%
Kuwait	359	39	20	13%
Bahrain	268	34	7	5%
Qatar	168	17	8	5%
Oman	108	17	3	2%
Total	**3469**	**453**	**153**	**100%**

Source: IMA and Survey results

Table 2. Distribution of responding companies by certain characteristics

Ownership	Int'l Branch	Locally Owned		Total
%	39%	61%		100%
Legal Structure	**Incorporated**	**Partnership**	**Family Owned**	
%	47%	28%	25%	100%
Sector	**Manufacture**	**Service**		
%	20%	80%		100%
Employees	**1-200**	**201-1000**	**> 1000**	
%	32%	30%	38%	100%
Sales in million AED	**< 100**	**100-1000**	**> 1000**	
%	33%	34%	33%	100%

TABLE 3 Cross Tabulations

Table 3A. Ownership by legal structure, sector and size

	Partnership	**Incorp.**	**Family**	**Total**	**Manuf.**	**Service**		**Total**
Locally Owned	19%	46%	35%	100%	22%	78%		100%
Int'l Branch	44%	49%	7%	100%	17%	83%		100%
	1-200	**201-1000**	**> 1000**		**< 100 M**	**100 M-1 B**	**> 1 B**	
Locally Owned	31%	26%	43%	100%	35%	32%	33%	100%
Int'l Branch	34%	37%	29%	100%	29%	38%	33%	100%

Table 3B. Sector by legal structure, ownership and size

	Partnership	**Incorp.**	**Family**	**Total**	**Locally Owned**	**Branch of International**		**Total**
Manufacture	23%	42%	35%	100%	68%	32%		100%

Service	30%	48%	22%	100%	60%	40%		100%
	1-200	**201-1000**	**> 1000**		**< 100 M**	**100 M-1 B**	**> 1 B**	
Manufacture	26%	32%	42%	100%	25%	50%	25%	100%
Service	34%	30%	36%	100%	35%	29%	36%	100%

Table 3C. Legal structure by sector and size

	Manuf.	**Service**	**Total**	**1-200**	**201-1000**	**>1000**	**Total**	**<100M**	**100M-1B**	**> 1B**	**Total**
Partnership	17%	83%	100%	36%	36%	28%	100%	40%	30%	30%	100%
Incorporated	19%	81%	100%	31%	30%	39%	100%	27%	35%	38%	100%
Family	30%	70%	100%	31%	25%	44%	100%	36%	36%	28%	100%

Table 3D. Number of employees by sales

	< 100 M	**100 M - 1 B**	**> 1 Billion**	**Total**
1-200	72%	23%	5%	100%
201-1000	24%	54%	22%	100%
> 1000	7%	26%	67%	100%

Table 4. Management accounting techniques with a relatively high adoption rate

Survey Question: Does your company	**Mean**	**Factor**
4 A: Most Frequently Used Techniques		
1. use budget to plan cash flows? (Q11)	4.40	BP
2. use budget to control costs? (Q12)	4.32	BP
3. develop pro-forma financial statements?(Q9)	4.15	BP
4. use budget to plan day to day operations? (Q10)	4.10	BP
5. use budget to coordinate activities across business units? (Q13)	4.03	BP
4 B: Frequently Used Techniques		
6. evaluate performance based on controllable divisional profits? (Q19)	3.80	PE
7. perform budget variance analysis on production inputs? (Q15)	3.79	BC
8. perform cost volume profit analysis? (Q35)	3.75	STDM

9. perform product profitability analysis? (Q48)	3.74	SAT
10. perform budget variance analysis on variable manufacturing overhead? (Q16)	3.66	BC
11. develop contribution margin statements? (Q36)	3.64	STDM
12. perform budget variance analysis on fixed manufacturing overhead? (Q17)	3.62	BC
13. use a plant wide overhead rate to allocate overhead to production? (Q29)	3.59	PCM
14. perform flexible budget variance analysis on production inputs? (Q14)	3.59	BC
15. use a job costing system for product cost accumulation? (Q26)	3.59	PCM
4 C: Less Frequently Used Techniques		
16. evaluate performance based on return on investment ? (Q20)	3.45	PE
17. use the cost of capital in discounting cash flows for major capital investments? (Q39)	3.44	LTDM
18. use budget performance for compensating managers? (Q25)	3.43	PE
19. evaluate major capital investments based on discounted cash flows? (Q38)	3.42	LTDM
20.use Activity –Based-Budgeting ? (Q18)	3.40	BP
21. use a process costing system for product cost accumulation? (Q27)	3.40	PCM
22. Perform sensitivity "what if" analysis when evaluating major capital investment projects? (Q41)	3.39	LTDM
23. Perform customer satisfaction analysis? (Q43)	3.39	SAT
24. Conduct formal strategic analysis? (Q46)	3.37	SAT
25. Evaluate investments based on payback period and/or accounting rate of return? (Q40)	3.35	LTDM
26. Perform variable costing analysis? (Q32)	3.35	PCM
27. Perform on-going supplier evaluations? (Q47)	3.29	SAT
28. Perform customer profitability analysis? (Q49)	3.29	SAT
29. Perform analysis of competitors' strengths and weaknesses? (Q45)	3.27	SAT
30. distinguish between incremental and non incremental costs? (Q37)	3.20	STDM

31. use a combination of job costing and process costing systems?(Q28)	3.17	PCM
32. perform benchmarking within the organization? (Q22)	3.09	PE
33. perform benchmarking with outside organizations? (Q23)	3.03	PE
4 D: Rarely Used Techniques		
34. evaluate the risk of major capital investment by using probability analysis?(Q42)	2.92	LTDM
35. use the balanced scorecard in performance evaluations? (Q24)	2.86	PE
36. use an activity based product costing system?(Q30)	2.84	ACT
37. perform product life cycle analysis? (Q44)	2.76	SAT
38. perform cost of quality analysis?(Q33)	2.70	ACT
39. use target costing techniques? (Q34)	2.67	PCM
40. use activity based costing in non production departments?(Q31)	2.66	ACT
41.Evaluate performance based on economic value added or residual income?(Q21)	2.55	PE

Table 5. Factors interpretation and reliability

	Factor	Abbreviations	Eignvalue	% explained variation	Reliability	Survey Questions
1.	Budgeting for Planning	**BP**	3.11	52	79%	9, 10,11,12,13&18
2.	Budgeting for Control	**BC**	3.27	82	91%	14,15,16&17
3.	Performance Evaluation	**PE**	3.93	56	87%	19,20,21,22,23,24&25
4.	Product Cost Measurement	**PCM**	3.28	66	87%	26,27,28,29&34
5.	Advanced Costing Techniques	**ACT**	2.88	72	87%	30,31,32&33
6.	Short Term Decision Making Techniques	**STDM**	2.11	70	79%	35,36&37
7.	Long Term Decision Making Techniques	**LTDM**	3.43	69	88%	38,39,40,41&42

8.	Strategic Analysis Techniques	**SAT**	4.62	66	91%	43,44,45,46,47,48&49

Table 6

Summary of the full model representing the first iteration in a backward elimination Step-wise regression and R results

* Significant at the 5% level.

** R is the multiple regression coefficient between Y on one hand and the regression space on the other hand.

Factors	Y1 BP	Y2 BC	Y3 PE	Y4 PCM	Y5 ACT	Y6 STDM	Y7 LTDM	Y8 SAT
Constant	3.910*	3.532*	2.987*	3.383*	2.940*	3.438*	3.097*	3.112*
Own-International	.337	.440*	.295	-.096	-.281	.289	-.193	.358
Type-Partnership	.384	.415	.310	.327	.386	.562*	.243	.359
Type-Incorporated	.569*	.709*	.248	-.020	-.315	.501*	.436	.274
Sector-Service	-.207	-.231	.242	-.493*	-.062	-.368	.165	-.114
Employees-small	-.250	-.829*	-.395	-.835*	-.163	-.320	-.658*	-.375
Employees-medium	-.112	-.059	-.291	-.043	-.378	-.326	-.594*	-.371
Sales-small	-.110	.261	-.340	.508	-.308	-.001	.022	.178
Sales-medium	-.123	-.210	-.066	.247	.109	.045	.081	-.022
R**	.380	.422	.351	.380	.273	.322	.355	.295

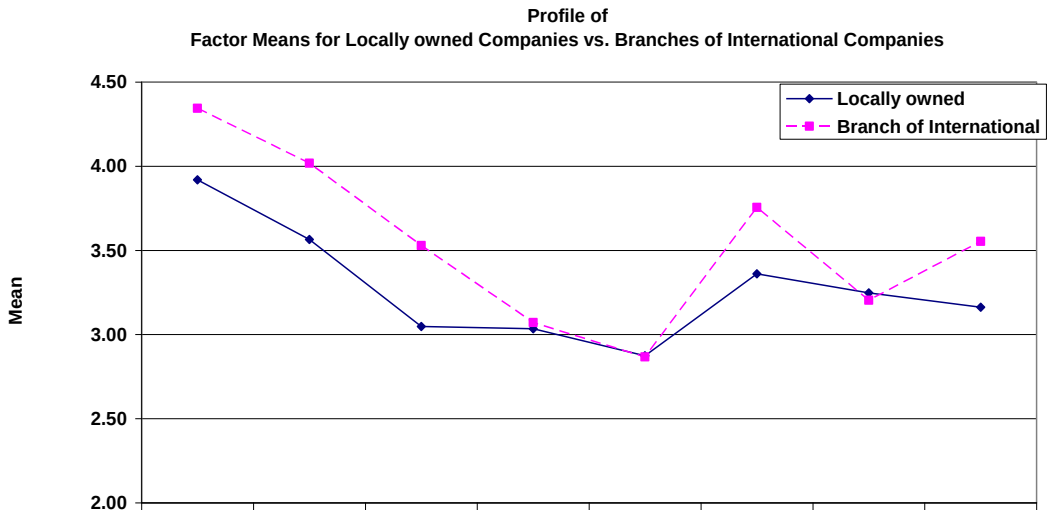
		Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8
		BP	BC	PE	PCM	ACT	STDM	LTDM	SAT
		3.73	3.5	3.29	3.58	2.95	3.08	3.29	3.06
Ownership	X1= Branch	IF	IF	LF	F	R	LF	LF	IF

	of intnl								
Legal structure	X2= Incorporated	IF	IF	LF	F	R	IF	IF	LF
Legal structure	X3= Partnership	F	LF	LF	F	R	IF	LF	LF
Sector	X4= Service	F	LF	LF	DF	R	LF	LF	LF
Size by Employees	X5= Small	F	DF	LF	DF	DF	LF	DF	LF
Size by Employees	X6= Medium	F	LF	LF	F	R	LF	DF	LF
Size by Sales	X7= Small	F	LF	DF	F	R	LF	LF	LF
Size by Sales	X8= Medium	F	LF	LF	F	R	LF	LF	LF

Table (7): Summary of relationships between MA choices and various firm characteristics

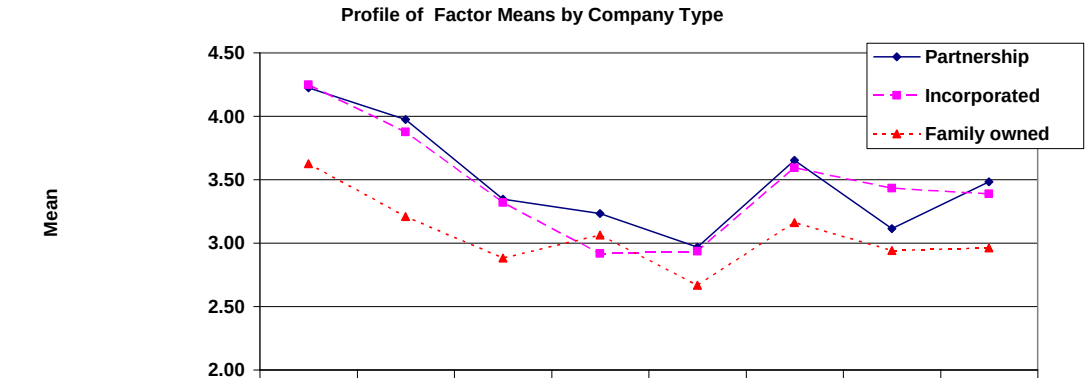
MF= Most frequently used
F = frequently used
LF= less frequently used
R= rarely used
IF= increased frequency
DF= decreased frequency

Figure 1



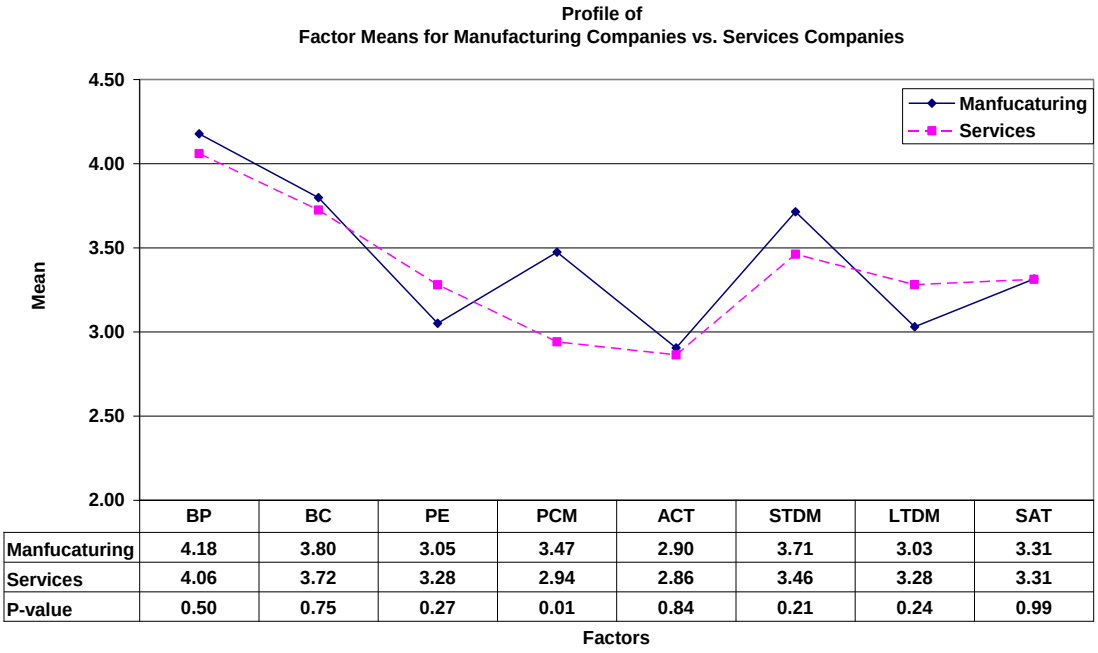
	BP	BC	PE	PCM	ACT	STDM	LTDM	SAT
Locally owned	3.92	3.56	3.05	3.03	2.87	3.36	3.25	3.16
Branch of International	4.34	4.02	3.53	3.07	2.87	3.76	3.20	3.55
P-value	0.00	0.02	0.00	0.83	0.97	0.01	0.80	0.01

Figure 2



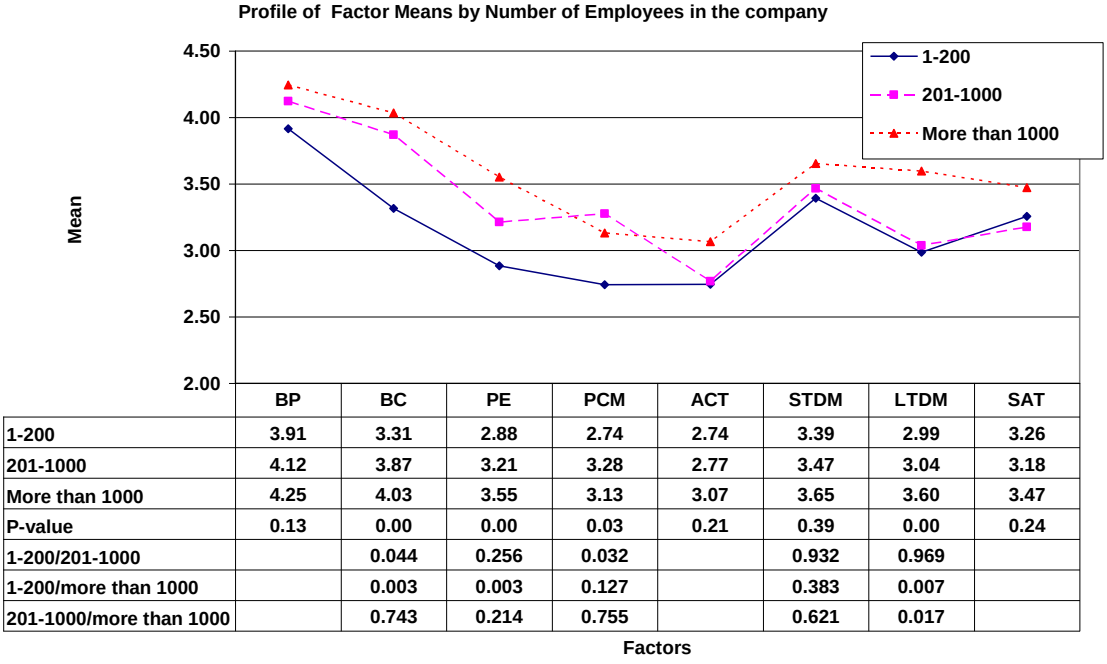
	BP	BC	PE	PCM	ACT	STDM	LTDM	SAT
Partnership	4.22	3.97	3.34	3.23	2.97	3.65	3.11	3.48
Incorporated	4.25	3.87	3.32	2.92	2.93	3.59	3.43	3.39
Family owned	3.62	3.21	2.88	3.06	2.67	3.16	2.94	2.96
P-value	0.00	0.00	0.07	0.30	0.37	0.06	0.05	0.03
Partnership/Incorporated	0.989	0.896	0.991			0.951	0.261	0.858
Partnership/Family Owned	0.005	0.008	0.110			0.080	0.736	0.036
Incorporated/Family Owned	0.001	0.011	0.089			0.090	0.054	0.064

Figure 3



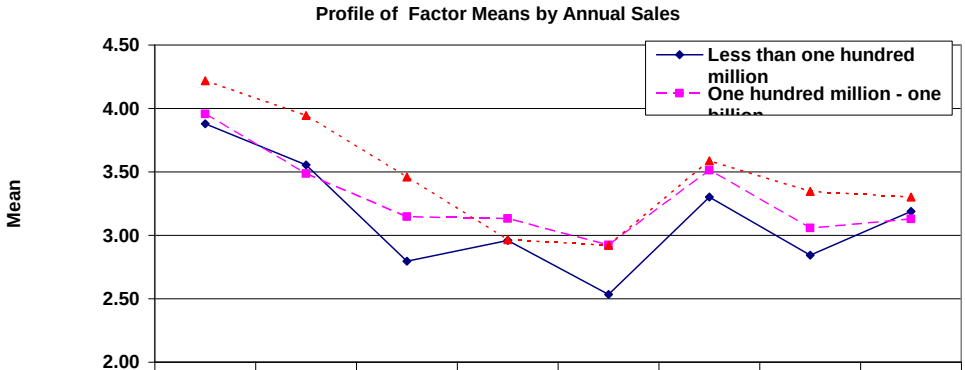
	BP	BC	PE	PCM	ACT	STDM	LTDM	SAT
Manfucaturing	4.18	3.80	3.05	3.47	2.90	3.71	3.03	3.31
Services	4.06	3.72	3.28	2.94	2.86	3.46	3.28	3.31
P-value	0.50	0.75	0.27	0.01	0.84	0.21	0.24	0.99

Figure 4



	BP	BC	PE	PCM	ACT	STDM	LTDM	SAT
1-200	3.91	3.31	2.88	2.74	2.74	3.39	2.99	3.26
201-1000	4.12	3.87	3.21	3.28	2.77	3.47	3.04	3.18
More than 1000	4.25	4.03	3.55	3.13	3.07	3.65	3.60	3.47
P-value	0.13	0.00	0.00	0.03	0.21	0.39	0.00	0.24
1-200/201-1000		0.044	0.256	0.032		0.932	0.969	
1-200/more than 1000		0.003	0.003	0.127		0.383	0.007	
201-1000/more than 1000		0.743	0.214	0.755		0.621	0.017	

Figure 5



	BP	BC	PE	PCM	ACT	STDM	LTDM	SAT
Less than one hundred million	3.88	3.55	2.79	2.96	2.53	3.30	2.84	3.19
One hundred million - one billion	3.96	3.48	3.15	3.13	2.92	3.51	3.06	3.13
More than one billion	4.22	3.94	3.46	2.96	2.92	3.59	3.35	3.30
P-value	0.21	0.16	0.01	0.71	0.17	0.45	0.09	0.68
Less than 100M/100M-1B			0.261				0.615	
Less than 100M/more than 1B			0.010				0.074	
100M-1B/more than 1B			0.340				0.406	

Factors