The use and benefit of management accounting practices in Libyan oil companies

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Abstract

Purpose – The purpose of this study is to describe the use and benefit of TMAPs and CMAPs in Libyan oil companies.

Design/methodology/approach – The data were collected by distributing 210 mailed questionnaires to senior financial staff, such as financial managers, heads of cost department, financial accountants, department of management accounting employees, managerial accountants and Auditors. IFAC-based model was used in analyzing evolution stages in Libyan management accounting practices.

Findings – This study finds that Libyan oil companies use CMAPs more than TMAPs, the latter being commonly used in Libyan manufacturing companies. This study also finds that CMAPs are more beneficial than TMAPs.

Practical implications – This study provides more understanding of the use and the benefit of TMAPs and CMAPs and fills research gap regarding the matter, as well as provides new findings that can be used for further research regarding the use and benefit of TMAPs and CMAPs for Libyan oil companies.

Originality/value – The results contribute to a better understanding concerning the use and benefit of TMAPs and CMAPs in Libyan oil companies.

Keywords Traditional MAPs, Contemporary MAPs, Libyan oil companies

Paper type Research paper

1. Introduction

Current management accounting practices (MAPs) have incorporated financial and nonfinancial techniques to provide information at both operational and organizational level, including factors such as competition, perceived environmental uncertainty, production environment technology and business society. Significant challenges and pressures faced by managers require them to change management accounting (Ahmad and Leftesi, 2014).

Companies use management accounting (MA) with different methods and tools (traditional and contemporary) to assess their operations. Those methods help them to plan, direct and control operating costs and to achieve their targets. It is recognized that MAPs are important for the success of companies (Ahmad, 2014; Ahmad and Leftesi, 2014; Alleyne and Marshall, 2011).

The benefit of TAMPs and CMAPs in foreign oil companies operating or licensed in Libya, i.e. Chevron, China National Petroleum Corporation (CNPC), Eni, Marathon, Occidental, Repsol, Shell, Statoil, Total and Wintershall is examined in this study with the hope that the identified theoretical framework and empirical evidence regarding the matter being studied...
contributes to the knowledge because the subject only receives little attention in management accounting literature.

2. Literature review
MA is defined in general as accounting information, such as profit and cost, that is used for management planning and control (Nishimura, 2005). Management accounting research (MAR) provides financial and nonfinancial information to decision makers. Moreover, MA provides reports including cost analyses and financial predictions for organization managers. This information is usually very detailed (Chapman et al., 2007). Furthermore, MA features the construction of accounting information systems and management information systems. It is considered as not only giving information to decision makers but also giving models and techniques to produce complex decisions. The role of MA expands into first providing relevant information for planning, control and decision-making and second, it plays majorly in the process of decision- and strategy- making, working closely with executive managers (Mohamed et al., 2015).

According to Rufino (2014), MAPs are MA tools or techniques used in coining business decisions in each business activities of any organization, profit or non-profit. Every business organization must adopt MAPs regardless of the size, market and operation. Among these types of business operations, service, merchandising and manufacturing, and manufacturing business maximize the most advantages of management accounting because of their complex business activities and operations. Furthermore, MAPs are different across the countries, affected by each country’s environment and organization.

Furthermore, MAPs are defined as various methods, procedures, processes or rules used in a particular field or profession, especially considered in manufacturing businesses, to support the organization’s infrastructure and management accounting processes. Budgeting, performance evaluation, information for decision-making and strategic analyses are some of the methods used, among many others, in MAPs. In addition, MAPs help organizations stay in the competition and keep up with the changing world because they give an important competitive advantage for organizations to guide managerial action, motivate behaviors and support and create necessary cultural values to achieve their strategic objectives. MAPs are divided into traditional management accounting practices (TMAPs) and contemporary management accounting practices (CMAPs). TMAPs cover budgets, standard costing and variance analysis, cost volume profit analysis and performance measurement while CMAPs cover total quality management (TQM), value-based management (VBM), activity-based costing (ABC), nonfinancial performance measurement systems, activity-based management (ABM), balanced scorecard (BSC) and strategic management accounting (SMA) (Ahmad, 2012; Ittner and Larcker, 2002; Preda and Watts, 2004; Scapens, 2006; Sulaiman et al., 2004).

Business environment and technological advancement complexity intensify the urge for management accounting information that meets global competition. Therefore, contemporary management accounting practices emerged to level modern business developments. Previous studies found that conclusions about the use of MAPs in different countries are difficult to draw, given the range of industries and variations in companies’ complexity across the studies. The main findings are that companies continue to rely more on TMAPs rather than on CMAPs (Armitage et al., 2015; Hutaibat and Alhatabat, 2019; Mclellan, 2014; Shahzadi et al., 2018).

Hussein (2018) found that TMAPs are higher than CMAPs in Egyptian companies, regardless of the significant progress of CMAPs and the realization of Egyptian companies regarding its importance CMAPs. In addition, he also found that key barriers for CMAPs’ implementation were the length of time it took to change the societal values and practices, the high degree of uncertainty avoidance and the high implementation cost.
3. The evolution of management accounting practices

In 1989, IFAC reported in its statement the scope and purposes of management accounting and the concepts which underpinned it (Table I). The statement was later revised into International Management Accounting Practice Statements, identifying MAPs’ evolution.

First, IFAC considered MA before 1950 as “a technical activity necessary for pursuing organizational objectives”. In this stage, the focus was on cost determination and financial control.

Second, IFAC identified MA by 1965 as “a management activity, but in a staff role”. In this stage the focus was to provide the information for management planning and control.

Third, IFAC identified MA in 1985 as management and production techniques, as well as cost control, frequently done through “reduction of waste resources and usage in business processes”. In this stage, mathematical formulas, e.g. TQM, EOQ, LIFO and FIFO, MRP and multiple regression were used.

Fourth, IFAC identified MA in 1995 as focusing on the effective use of resources through technological practices which examine the drivers of customer value, shareholders value and organizational innovation for value creation. Here ABC, JIT, target costing, balanced scorecard, value chain analysis and strategic management accounting were used.

This study uses those stages to discover the use and benefit of MAPs in Libyan oil companies. The following table shows the items of MAPs used in this study.

| No | Variables of MAPs use |
|----|-----------------------|
| **The first stage of MAPs 1950** | |
| MAPs.1 | Full (absorption) costing |
| MAPs.2 | Budgeting systems for planning financial position and cash flows |
| MAPs.3 | Product profitability analysis |
| MAPs.4 | Budgeting systems for day-to-day operations |
| MAPs.5 | Variable costing |
| MAPs.6 | Budgeting systems for co-ordinating activities across the business units |
| **The second stage of MAPs 1965** | |
| MAPs.7 | Cost–volume–profit/breakeven analysis |
| MAPs.8 | Cash flow return on investment |
| MAPs.9 | Return on investment (ROI) |
| MAPs.10 | Controllable profit |
| MAPs.11 | Capital budgeting techniques |
| MAPs.12 | Divisional profit |
| MAPs.13 | Standard costs and variance analysis |
| MAPs.14 | Residual income |
| **The third stage of MAPs 1985** | |
| MAPs.15 | Long-range forecasting |
| MAPs.16 | Customer satisfaction surveys |
| MAPs.17 | Total quality management |
| MAPs.18 | Quality cost reporting |
| **The fourth stage of MAPs 1995** | |
| MAPs.19 | Target costing |
| MAPs.20 | Life-cycle costing |
| MAPs.21 | Activity-based costing (ABC) |
| MAPs.22 | Activity-based management (ABM) |
| MAPs.23 | Just-in-time (JIT) |
| MAPs.24 | Balanced scorecard (BSC) |

*Source(s): Ahmad and Leftesi (2014)*
4. Libyan context
The National Oil Corporation (NOC) is the national oil company of Libya. It dominates Libya’s oil industry. Along with a number of subsidiaries, it produces around 70 percent of the country’s oil. Libya is a member of the Organization of Petroleum Exporting Countries (OPEC), having the largest proven oil reserves in Africa. Libyan government dominates the economy by controlling oil resources, which contribute around 95 percent of export earnings, 75 percent of government income and over 50 percent of gross domestic product (GDP), i.e. USD 50.98 billion in 2017 (National Oil Corporation, 2017).

Oil and gas production is carried out by oil companies listed under NOC and licensed by IOCs through special participation and PSAs in both onshore and offshore areas. Thus, Libyan oil companies (fully owned and joint ventures) under NOC (Table II) are targeted as the sample of this research.

5. Empirical studies
Many studies found that the use of MA is similar, and at the same time it is different between the countries. Take Japanese and US companies as examples. They use direct (variable) costing and full (absorption) costing, but Japanese firms use process costing more to accumulate product costs. The use of capital budgeting decision models was one of the biggest reported differences between them. US firms commonly use net present value and internal rate of return – the discounted cash flow models. In contrast, Japanese firms use pay back more as the primary model (Chow et al., 1992; Chow et al., 1988).

Joshi (2001) found that Indian manufacturing and service sector use more budgeting and performance evaluation as traditional MAPs compared to contemporary techniques. In addition, El-Ebaishi et al. (2003) found that Saudi manufacturing firms perceive that traditional management accounting techniques are important, and they heavily use them. However, ABC and JIT were only used by several firms, as found in modern states.

Nimtrakoon (2009) found similarity between the results of studies conducted in Thailand, Singapore and India that budgeting, planning and performance evaluation practices in

| Fully owned                        |                                           |
|-----------------------------------|------------------------------------------|
| 1 Sirte oil company               |                                          |
| 2 Arabian gulf oil company        |                                          |
| 3 Ras Lanuf oil and gas processing company |                      |
| 4 Zawia oil refining company      |                                          |
| 5 Brega petroleum marketing company |                                        |
| 6 National oil wells drilling and work over company |   |
| 7 Jowfe oil technology company    |                                          |
| 8 National oil fields and terminals catering company | |
| 9 North Africa geophysical exploration company |          |
| 10 Taknia Libya engineering company |                              |
| 11 Petro air company               |                                          |

| Joint ventures                     |                                           |
|-----------------------------------|------------------------------------------|
| 1 Zueitina oil company            |                                          |
| 2 Mellita oil and gas company     |                                          |
| 3 WAHA oil company                |                                          |
| 4 Mabruk oil operation company    |                                          |
| 5 Harouge oil operation company   |                                          |
| 6 Akakus oil operation company    |                                          |
| 7 Nafusah oil operation company   |                                          |

Table II. National oil corporation

Source(s): National Oil Corporation of Libya (2019)
manufacturing and service companies were high and that target costing, product life cycle analysis and zero-based budgeting (ZBB) were rarely used. Furthermore, Ahmad (2012); Ahmad and Zabri (2012); Leftesi (2008) agreed that traditional management accounting techniques in China, Singapore, India and Malaysia are more popular than the contemporary ones, probably due to unfamiliarity with the new techniques, low human resource or more importantly, poor top management support.

Waweru et al. (2004) found that considerable changes in management accounting systems occur in four African retail companies, where the use of contemporary MAPs, particularly activity-based cost and balanced scorecard (BSC), to measure performance is increasing.

Hyvonen (2007) found, in Finnish manufacturing company context, the future development intention regarding MAPs. Islam and Kantor (2005) found that the application of national culture and values by Chinese companies affects the outcome information dissemination and MAPs’ development efforts and that Western MAPs’ misunderstanding decelerates Chinese MAPs development. Hutaibat (2005) investigated MAPs in Jordan industrial companies and found that firms still focus more on traditional MAPs rather than on modern and new MAPs.

Abdel-kader and Luther (2006), through a survey on MAPs in the UK food and drinks industry, found that traditional management accounting, including cost of quality-related information, employee-related nonfinancial strategy and competitors’ strengths and weaknesses analyses is still used in UK food and drinks industry. Nevertheless, gaps between textbook practices and actual practices were found.

Wu, Boateng, and Drury (2007) stated that ownership types, i.e. joint ventures and state-owned, influences MAPs’ adoption, that target budgeting and costing works better for state-owned enterprise than joint ventures and that responsibility accounting and decision-making accounting are better for joint ventures than for state-owned enterprises.

Frezatti (2007), who conducted a survey on MAPs in Brazilian medium and large manufacturing and nonmanufacturing companies, found that the adoption is lower for recent MAPs (e.g. ABC, BSC in full and EVA). Leftesi (2008) found that traditional MAPs are used more in Libyan firms due to the low support for Libyan firm development and the absence of new technology system adoption. However, misunderstanding and limited knowledge make Libyan firms focus on traditional MAPs. However, the results are consistent with the findings of previous studies.

Nimtrakoon and Tayles (2010) confirmed the popularity and the benefit of traditional MAPs in Thailand, revealing the low adoption and benefit of the counterpart.

Ahmad and Mohamed Zabri (2015) identified four variables associated with the use of MAPs. The contingency factors were measured using firm size, market competition intensity, firm owners/directors’ commitment and manufacturing technology advancement. Furthermore, strategic management accounting (SMA), decision support system, budgeting system, performance evaluation system and costing system as the five types of MAPs were used as the dependent variables.

6. Research methodology

This exploratory study is based on the fact that the evolution stage and the practice of management accounting are not much studied, particularly in Libyan context (e.g. Ahmad and Leftesi, 2014; Alkizza and Akbar, 2007). A number of 224 identical questionnaires were distributed to Libyan oil companies under the National Oil Corporation (NOC), from which 93.75 percent is useable. Based on Saunders et al. (2007), the response rate of this study is very satisfactory.

The 24 MAPs items in the questionnaire were developed based on Ahmad and Leftesi (2014); Chenhall and Langfield-Smith (1998); Joshi (2001) and Luther and Longden (2001).
The MAPs are arranged according to IFAC-Based Model. The respondents were asked to indicate two areas. The first area is the use of MAPs; 1 for not considered and 5 for currently used. The second is MAPs benefit, 1 for not beneficial and 5 for very beneficial.

7. Survey results and discussion

7.1 The interpretation of validity and reliability test

The accuracy of the hypothesis testing on the relationship between research variables depends on the quality of the data used in the test. Therefore, before testing the hypothesis, the validity and the reliability of the research instrument must be tested. Research instruments are said to be valid if the coefficient correlation has the significance value (p) of smaller than alpha 0.05 (Sugiyono, 2003), and they are said to be reliable if their reliability coefficient is 0.6 or higher (Arikunto, 2002).

The number of items for MAPs usage and the number of items for MAPs benefit, developed by the researcher, are the same. For MAPs usage, items 1, 2, 4, 6 and 12 are invalid because their significance values are greater than alpha 0.05, while other items are valid. Regarding MAPs benefit, the significance value of all items is smaller than alpha 0.05, so the items are valid. Thus, the said valid items can be used in further testing.

Coefficient of reliability is calculated using formula and then interpreted by referring to the reliability criteria proposed by Arikunto (2002), in which the reliability criteria for group performance is considered adequate if the coefficient of Alpha is between 0.60 and 0.70.

7.2 Profile of respondents

Respondents’ profiles were collected to gain an overall information about the respondents. Most of the respondents are men, and the considerably smaller number consists of women. This ratio is consistent with Libyan – Arabic in general – culture regarding managerial and decision-making positions, where males dominate managerial positions and professional jobs such as accounting. This finding is consistent with the studies of Abugalia, 2011; Alkisher, 2013 and Leftesi, 2008. In addition, Libyan oil companies are greater in number than non-Libyan oil companies. This information is helpful for understanding the background of the respondents and for providing data for further statistical analysis.

The data show that most employees of Libyan oil companies are youths of 30–40 years of age. The companies targeted youths in order to train them based on their need. The respondents hold different functions, so they provide many and different findings about the company, which are needed for the research. Furthermore, the data show that most respondents have more than six years of experience in their positions, suggesting that they are quite familiar with the content of the questionnaire. Most of them are employees in companies that have been operating for more than 15 years. As mentioned before, this information is very important for the fulfillment of the research objectives.

7.3 Use of MAPs

To identify the current use of MAPs in Libyan oil companies, the respondents were asked to indicate whether each of the 19 MAPs listed in the questionnaire was currently used. As shown in Table III, all of the listed MAPs are used by the oil companies.

Table III indicates that Libyan oil companies have a relatively similar rate of MAPs usage. This finding is different from the result of previous studies that discussed MAPs in Libyan manufacturing companies. For instance, Ahmad and Leftesi (2014) found that Libyan manufacturing companies rely heavily on traditional management accounting techniques, while the adoption rates of recently developed or advanced tools were rather low and slow, similar to those in other developing countries.
| Items      | Not considered | Considered then rejected | Never hear of it | Under consideration | Currently used | TR  |
|------------|----------------|--------------------------|------------------|---------------------|---------------|-----|
| MAPs.3     | 54 25.7        | 0 0                      | 35 16.7          | 30 14.3             | 89 42.4       | 208 99 |
| MAPs.5     | 39 18.6        | 6 2.9                    | 23 11            | 18 8.6              | 124 59        | 210 100 |
| MAPs.7     | 41 19.5        | 6 2.9                    | 40 19            | 30 14.3             | 91 43.3       | 208 99 |
| MAPs.8     | 58 27.6        | 0 0                      | 42 20            | 24 11.4             | 86 41         | 210 100 |
| MAPs.9     | 70 33.3        | 0 0                      | 48 22.9          | 30 14.3             | 61 29         | 209 99.5 |
| MAPs.10    | 49 23.3        | 0 0                      | 47 22.4          | 54 25.7             | 58 27.6       | 208 99 |
| MAPs.11    | 55 26.2        | 0 0                      | 35 16.7          | 31 14.8             | 86 41         | 207 98.6 |
| MAPs.13    | 40 19          | 7 3.3                    | 43 20.4          | 39 18.6             | 74 35.2       | 203 96.7 |
| MAPs.15    | 63 30          | 0 0                      | 29 13.8          | 18 8.6              | 99 47.1       | 209 99.5 |
| Stage 2    | 376 47.2       | 7 19.4                   | 284 36           | 226 27.5            | 555 36.7      | 210 99.5 |
| MAPs.17    | 23 11          | 0 0                      | 60 28.6          | 34 16.2             | 93 44.3       | 210 100 |
| MAPs.18    | 101 48         | 23 11                    | 47 22.4          | 6 2.9               | 33 15.7       | 210 100 |
| MAPs.19    | 12 5.7         | 0 0                      | 25 12            | 46 22               | 127 60.5      | 210 100 |
| Stage 3    | 148 18.6       | 23 63.9                  | 161 20.3         | 133 16.2            | 373 24.7      | 208 99 |
| MAPs.21    | 17 8           | 0 0                      | 43 20.4          | 41 19.5             | 108 51.4      | 209 99.5 |
| MAPs.22    | 17 8           | 0 0                      | 44 21            | 72 34.3             | 74 35.2       | 207 98.6 |
| MAPs.23    | 42 20          | 0 0                      | 35 16.7          | 76 36.2             | 56 26.7       | 209 99.5 |
| MAPs.24    | 35 16.7        | 0 0                      | 41 19.5          | 89 42.4             | 45 21.4       | 210 100 |
| Stage 4    | 43 20.4        | 0 0                      | 57 27.1          | 65 31               | 44 21         | 209 99.5 |
| MAPs.25    | 25 12          | 0 0                      | 68 32.3          | 71 33.8             | 44 21         | 208 99 |
| Total      | 796 20         | 36 1                      | 791 20           | 821 20.8            | 1,512 38.2    | 3,956 |

Table III. Total respondents: 2,100.
Table III shows that higher use of MAPs is located in the third stage; it includes advanced practices such as TQM (60.5 percent). Third stage means the reduction of resource waste in business processes. Customer satisfaction surveys have the lowest rate in the third stage, by 15.7 percent. Furthermore, the following use of MAPs is located in the first stage; it is variable costing (59 percent). First stage means cost determination and financial control. The second stage, information for management planning and control, has the highest rate (36.7 percent) compared to all other total stages.

The adoption rate of traditional management accounting practices in Indian large- and medium-size manufacturing companies was higher than that of recently developed techniques, and the adoption rate for the newly developed techniques was rather slow. Most of the adopted practices are related to traditional budgeting and performance evaluation systems (Joshi, 2001). Abdel Al and McLellan (2011) found that Egyptian manufacturing organizations still retain and believe in the benefits of using traditional management accounting practices as they fit well with managing in an unstable economy. Their results also show that Egyptian managers have started recognizing the benefits of some of the more advanced management accounting practices.

Concerning the use of MAPs, the finding of this study finds is different from that of (Ahmad and Leftesi, 2014) because this study focuses on Libyan oil companies, while the study of Ahmad and Leftesi focuses on local companies (i.e. Libyan manufacturing companies). This

| Items   | No benefit | Little benefit | Medium benefit | Great benefit | Very great benefit | TR  |
|---------|------------|----------------|----------------|---------------|--------------------|-----|
| MAPs.1  | 24         | 11.4           | 12             | 5.7           | 59                 | 28  |
| MAPs.2  | 12         | 5.7            | 48             | 22.9          | 71                 | 33.9|
| MAPs.3  | 36         | 17.1           | 46             | 22            | 59                 | 28  |
| MAPs.4  | 18         | 8.6            | 44             | 21            | 40                 | 19  |
| MAPs.5  | 44         | 21             | 53             | 25.2          | 59                 | 28  |
| MAPs.6  | 17         | 8              | 59             | 28            | 76                 | 36.2|
| Stage 1 | 151        | 15             | 262            | 30            | 364                | 31  |
| MAPs.7  | 34         | 16.2           | 35             | 16.7          | 48                 | 22.9|
| MAPs.8  | 58         | 27.6           | 30             | 14.3          | 49                 | 23.3|
| MAPs.9  | 58         | 27.6           | 24             | 11.4          | 87                 | 41.4|
| MAPs.10 | 70         | 33.3           | 44             | 21            | 29                 | 13.8|
| MAPs.11 | 59         | 28             | 17             | 8             | 42                 | 20  |
| MAPs.12 | 59         | 28             | 52             | 24.8          | 69                 | 32.9|
| MAPs.13 | 47         | 22.4           | 53             | 25.2          | 58                 | 27.6|
| MAPs.14 | 64         | 30.5           | 61             | 29            | 42                 | 20  |
| Stage 2 | 449        | 44.9           | 316            | 36.2          | 439                | 37.5|
| MAPs.15 | 29         | 13.8           | 34             | 16.2          | 40                 | 19  |
| MAPs.16 | 53         | 25.2           | 65             | 31            | 51                 | 24.3|
| MAPs.17 | 6          | 2.9            | 35             | 16.7          | 40                 | 19  |
| MAPs.18 | 36         | 17.2           | 21             | 10            | 17                 | 8   |
| Stage 3 | 124        | 12.4           | 155            | 17.8          | 148                | 12.6|
| MAPs.19 | 30         | 14.3           | 32             | 15.2          | 43                 | 20.5|
| MAPs.20 | 40         | 19             | 25             | 12            | 41                 | 19.5|
| MAPs.21 | 35         | 16.7           | 38             | 18            | 46                 | 22  |
| MAPs.22 | 53         | 25.2           | 17             | 8             | 35                 | 16.7|
| MAPs.23 | 65         | 31             | 16             | 7.6           | 24                 | 11.4|
| MAPs.24 | 54         | 25.7           | 12             | 5.7           | 32                 | 15.2|
| Stage 4 | 277        | 27.7           | 140            | 16            | 221                | 18.9|
| Total   | 1,001      | 873            | 1,172          | 1,146         | 779                | 40.1|
study also found that even though most of their employees are Libyan, Libyan oil companies as foreign companies use their own MAPs (developed or advanced tools).

7.4 Benefit of MAPs
To identify the current benefit of MAPs in Libyan oil companies, the respondents were asked to indicate whether each of the 24 MAPs listed in the questionnaire was currently beneficial, as shown in Table IV that oil companies are benefited by all MAPs.

Table IV indicates that the respondents have different knowledge about the benefit of MAPs. This study found that the benefit of traditional MAPs is lower than the benefit of CMAPs. According to the researcher’s knowledge, there is no previous study focusing on the benefit of MAPs in either Libyan manufacturing companies or Libyan oil companies.

Table IV shows that the very great benefit of MAPs is located in the third stage; it is quality cost reporting (38 percent). Third stage means reduction of resource waste in business processes. Budgeting systems for planning financial position and cash flows have the lowest rate in the first stage, by 5.2 percent. The first stage means cost determination and financial control.

The highest total rate of very great benefit of MAPs is found in the fourth stage, by 40.1 percent. Fourth stage means creation of value through effective resources usage. The lowest total rate of very great benefit of MAPs is in the first stage, by 10.8 percent.

Most of the respondents are Libyans, and they do not have enough knowledge about CMAPs. According to Kalifa et al. (2016), Libyan accounting education still focuses on traditional accounting and does not have modern resources such as textbooks and courses. Table IV shows the highest rate of unknown respondents about CMAPs, with the total rate of 36.4 percent in the fourth stage and of 36 percent in the second stage. The highest total rates of great and very great benefit of MAPs are 25.4 percent and 40.1 percent, sequentially CMAPs in the fourth stage.

8. Conclusion
The primary focus of this research is examining MAPs in Libyan oil companies, both fully owned and joint ventures, that were listed under the National Oil Corporation of Libya. Questionnaires were distributed to financial managers, heads of cost department, financial accountants, department of management accounting employees, managerial accountants and auditors in those companies. A total 224 of questionnaires were returned, and 210 of them were used in this research.

The research found that Libyan oil companies use more TMAPs than CMAPs. This study concluded that different MAPs are used by Libyan companies. While previous study shows that Libyan manufacturing companies use TMAPs, Libyan oil companies use CMAPs even though their employees are mostly Libyans. Furthermore, the results indicate a significant progress to consider the implementation and the use of CMAPs. In addition, this study found that CMAPs are more beneficial than traditional MAPs although the respondents do not have enough knowledge about CMAPs.

Finally, no research is perfect. Applying survey method poses some limitations. Scapens (2006) pointed out that the personalities and backgrounds of key individuals can affect the choice of management accounting practices. Future research can apply interviews and cross-country comparisons to provide rich information. Furthermore, a study on the impact of the usage and benefit of MAPs on companies can enrich future research.

References
Abdel-Kader, M. and Luther, R. (2006), “IFAC’s conception of the evolution of management accounting”, Advances in Management Accounting, Vol. 15, pp. 229-247.
Abdel Al, S.F. and McLellan, J.D. (2011), “Management accounting practices in Egypt – A transitional economy country”, Other, Vol. 18 No. 2, pp. 105-120, available at: http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=66709981&site=ehost-live.

Abugalia, M. (2011), “The influence of business environment on the effectiveness of management accounting practices: evidence from Libyan companies”, available at: http://eprints.hud.ac.uk/17509/.

Ahmad, K. (2012), The Use of Management Accounting Practices in Malaysian SMEs, University of Exeter, May, pp. 1-365.

Ahmad, K. (2014), “The adoption of management accounting practices in Malaysian small and medium-sized enterprises”, Asian Social Science, Vol. 10 No. 2, pp. 236-249, doi: 10.5539/ass.v10n2p236.

Ahmad, K. and Mohamed Zabri, S. (2015), “Factors explaining the use of management accounting practices in Malaysian medium-sized firms”, Journal of Small Business and Enterprise Development, Vol. 22 No. 4, pp. 762-781, doi: 10.1108/JSBED-04-2012-0057.

Ahmad, K. and Zabri, S.M. (2012), The Uptake of Management Accounting Practices Among Malaysian Firms in Smes Sector, pp. 518-533.

Ahmad, N.S.M. and Leftesi, A. (2014), “An exploratory study of the level of sophistication of management accounting practices in Libyan manufacturing companies”, International Business Research, Vol. 2 No. 2, pp. 1-10, available at: http://www.iises.net/download/Soubory/soubory-puvodni/pp-1-10_ijobmV2N2.pdf.

Alkisher, A.O. (2013), Factors Influencing Environmental Management Accounting Adoption in Oil and Manufacturing Firms in Libya Doctor of Philosophy Universiti Utara Malaysia December 2013, December.

Alkizia, A. and Akbar, S. (2007), “The impact of the business environment on management accounting Practices: Libyan evidence”, The European Journal of Management and Public Policy, Vol. 6 No. 2.

Alleyne, P. and Weekes-marshall, D. (2011), An exploratory study of management accounting practices in manufacturing companies in barbados, Vol. 2 No. 9, pp. 49-58.

Armitage, H.M., Webb, A. and Glynn, J. (2015), “The use of management accounting techniques by small and medium-sized enterprises”, A Field Study of Canadian and Australian Practice *, Vol. 15 No. 1, pp. 31-69, doi: 10.1111/1911-3838.12089.

Chapman, C.O.S., Hopwood, A.G. and Shields, M.D. (2007), Handbook of Management Accounting Research, Vol. I, doi: 10.1016/S1751-3243(06)01001-7.

Chenhall, R. and Langfield-Smith, K. (1998), “The relationship between strategic priorities, management techniques and management accounting: an empirical investigation using a systems approach”, Accounting, Organizations and Society, Vol. 23 No. 3, pp. 243-264, doi: 10.1016/S0361-3682(97)00024-X.

Chow, C.W., Kato, Y. and Shields, M.D. (1992), “Pergamon National culture and the preference for wagement controls an exploratory firm-labor market interface *”, Accounting, Organizations and Society, Vol. 19 Nos 4-5, pp. 381-400.

Chow, C.W., Shields, M.D. and Wong-Boren, A. (1988), “A compilation of recent surveys and company-specific descriptions of management accounting practices”, Journal of Accounting Education, Vol. 6 No. 2, pp. 183-207, doi: 10.1016/0748-5751(88)90003-6.

El-Ebaishi, M., Karbhari, Y. and Naser, K. (2003), “Empirical evidence ON the use OF management accounting techniques IN a sample OF SAUDI manufacturing companies”, International Journal of Commerce and Management, Vol. 13 No. 2, pp. 74-101, doi: 10.1108/eb047467.

Frezatti, F. (2007), “The economic paradigm in management accounting”, doi: 10.1108/02686900710750784.

Hussein, A. (2018), “Adoption , importance and barriers to the implementation of contemporary management accounting practices: evidence from Egypt”, Accounting and Finance Research, Vol. 7 No. 1, pp. 192-213, doi: 10.5430/afr.v7n1p192.
Hutaibat, K.A. (2005), Management Accounting Practices in Jordan - A Contingency Approach by Khaled Abed Hutaibat A Thesis Submitted to the University of Bristol in Accordance with the Requirements of the Degree of Doctor of Philosophy in the Faculty of Social Sciences and Law, University of Bristol.

Hutaibat, K. and Alhatabat, Z. (2019), “Management accounting practices’ adoption in UK universities”, Journal of Further and Higher Education, Vol. 18 No. 3, pp. 343-366, doi: 10.1080/0309877X.2019.1643457.

Hyvonen, J. (2007), “Strategy, performance measurement techniques and information technology of the firm and their links to organizational performance”, Management Accounting Research, Vol. 18 No. 3, pp. 343-366, doi:10.1016/j.mar.2007.02.001.

Islam, M. and Kantor, J. (2005), “The development of quality management accounting practices in China”, Managerial Auditing Journal, Vol. 20 No. 7, pp. 707-724, 10.1108/02686900510611249.

Ittner, C. and Larcker, D. (2002), “Empirical managerial accounting research: are we just describing management consulting practice?”, European Accounting Review, Vol. 11 No. 4, pp. 787-794, doi:10.1080/0963818022000047082.

Joshi, P.L. (2001), "The international diffusion of new management accounting practices: the case of India", Journal of International Accounting, Auditing and Taxation, Vol. 10 No. 1, pp. 85-109, doi: 10.1016/S1061-9518(01)00037-4.

Kalifa, A.M., Triyuwono, I. and Djamhuri, A. (2016), "The accounting education in Libyan universities after Libyan revolution of 2011. Case study on Libyan universities", The International Journal of Accounting and Business Society, Vol. 23, pp. 70-86.

Leftesi, A. (2008), The Diffusion of Management Accounting Practices in Developing Countries: Evidence from Libya, University of Huddersfield, available at: https://core.ac.uk/download/pdf/57120.pdf.

Luther, R.G. and Longden, S. (2001), “Management accounting in companies adapting to structural change and volatility in transition economies: a South African study”, Management Accounting Research, Vol. 12 No. 3, pp. 299-320, doi: 10.1006/mare.2001.0163.

McLellan, J.D. (2014), “Management accounting theory and practice: measuring the gap in USA businesses”, Vol. 21 No. 1, pp. 53-68.

Mohamed, A.M., Alasfour, H.F. and Algeru, I.O. (2015), “The influence of organisational culture on the adoption of MAPs among companies operating in Libya: contingency perspective”, Journal of The Faculty of Economics For Scientific Researches, Vol. 1 No. 1, pp. 4-31.

Nimtrakoon, S. (2009), Organization Strategy, Management Techniques and Management Accounting Practices: Contingency Research in Thailand, University of Hull, (December), pp. 1-369.

Nimtrakoon, S. and Tayles, M.E. (2010), “Contingency factors of management accounting practices in Thailand: a selection approach”, Asian Journal of Accounting and Governance, Vol. 1, pp. 51-78.

Nishimura, A. (2005), The Development of Management Accounting and the Asian Position.

Preda, P. and Watts, T. (2004), “Contemporary accounting innovations in Australia: manufacturing versus service organisations”, Journal of Applied Management Accounting Research, Vol. 2 No. 2, p. 17.

Rufino, H.D. (2014), “Management accounting practices (MAPs) of small and medium-sized manufacturing enterprises in the city of tarlac”, Vol. 4 No. 1, pp. 55-74.

Saunders, M., Lewis, P. and Thornhill, A. (2007), For Business Students Fi, 5th ed.

Scapens, R.W. (2006), “Understanding management accounting practices: a personal journey”, British Accounting Review, Vol. 38 No. 1, pp. 1-30, doi: 10.1016/j.bar.2005.10.002.

Shahzadi, S., Khan, R. and Toor, M. (2018), “Impact of external and internal factors on management accounting practices: a study of Pakistan”, Asian Journal of Accounting and Research, doi: 10.1108/AJAR-08-2018-0023.
Sulaiman, M.B., Nik Ahmad, N.N. and Alwi, N. (2004), “Management accounting practices in selected Asian countries”, Vol. 19 No. 4, pp. 493-508, doi: 10.1108/02686900410530501.

Waweru, N.M., Hoque, Z. and Uliana, E. (2004), “Management accounting change in South Africa: case studies from retail services”, Accounting, Auditing and Accountability Journal, Vol. 17 No. 5, pp. 675-704, doi: 10.1108/09513570410567773.

Wu, J., Boateng, A. and Drury, C. (2007), “An analysis of the adoption, perceived benefits, and expected future emphasis of western management accounting practices in Chinese SOEs and JVs”, International Journal of Accounting, Vol. 42 No. 2, pp. 171-185, doi: 10.1016/j.intacc.2007.04.005.

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