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Factors Influencing the Adoption and Implementation of Management Accounting Innovations (MAIs): Evidence from Jordanian Manufacturing Entities

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Abstract: This study examined the factors that could be impact the way of MAIs implementation within Jordanian entities. Semi-structured interviews were employed in the study in order to determine factors that facilitate, motivate, and create barriers to MAIs implementation. 6 in-depth Face-to-face interviews were conducted in total. Interviewees mentioned that, the significant effects of the following factors in implementation of MAIs namely: Top Management Support, Education of MAIs and Training. During the process of implementing MAIs, the manufacturing entities could be faced problems or difficulties related to change implementation in practice or resistance to change from the employees. The high costs of MAIs implementation, high cost of consultants, are indicated by six companies as the most common barriers encountered during the implementation of MAIs.

Keywords: Manufacturing sector, Jordan, Management Accounting

1. INTRODUCTION

Over the last 20 years, many new ideas have been presented in the field of Management Accounting (e.g. Horngren, Foster and Datar, 2000), and have been gradually introduced into practice (Shields 1995; Anderson, 1995; Bjornenak and Olson, 1999; Bjornenak and Ax, 2005; Cohen *et al.*, 2005; Askarany, 2006; Askarany and Yazdifar, 2007; Smith *et al.*, 2008; Hopper *et al.*, 2008; Abdel-Kader and Luther, 2008).

The main goal of this paper is therefore to investigate the implementation of MAIs in the Jordanian manufacturing entities. The main objectives of the study were to identify the factors that facilitate and motivate the decision to implement MAIs. Additional objectives include determining the problems associated

with MAIs implementation within Jordanian manufacturing sector. It will be done so by investigating three research questions:

1. What are the factors that motivate the process of MAIs implementation among the Jordanian manufacturing entities?
2. What are the factors that facilitate the process of MAIs implementation among the Jordanian manufacturing entities?
3. What barriers of MAIs implementation have the Jordanian manufacturing entities encountered?

2. DATA COLLECTION METHODS

Semi-structured interviews were employed in the study in order to determine factors that facilitate, motivate, and create barriers to MAIs implementation. 6 Face-to-face interviews were conducted in total.

2.1. Descriptive Analysis for interviews

Implementation of MAIs in entity One

Entity A1 is in the Tobacco and Cigarette sector, with a total workforce around 430 in 2014. In 2001 the decision was made to move from the traditional MAs to MAIs system. The process of MAIs implementation approximately finished in March 2004.

Factors that Facilitate the Implementation of MAIs

Top management support is the most crucial factor influencing the success of MAIs implementation. Top management should commit resources and develop goals and strategies to enable the implementation of MAIs. The interviewee in Entity A1 said:

“The role of our managers was in supporting us during the implementation of MAIs. They encouraged the use of MAIs and designed many good training programmes for the employees and me to update our knowledge with the system”.

Top management plays an important role in relation to the availability of necessary resources that the manufacturing needs for the implementation of MAIs. The commitment and support of top management have emerged in the literature as a key factor evident in MAIs implementation (Krumwiede, 1998; Brown *et al.*, 2004). Interviewee in Entity A1 added:

“Our managers have been involved with the MAI system since its implementation, they believe that this implementation can bring an excellent future to the organization, they have rigorous confidence about the results that could be gained from MAI”.

Training

The training factor is considered to play a key role in the implementation of MAIs system. In training, employees will be told how MAIs work, how to interpret and use MAIs information for product design, pricing, and process improvement, as well as how the compensation system will be accommodated to incorporate the performance measurement. Training reduces employees' lack of confidence in MAIs and prevents them from feeling pressured by the implementation process. Training in designing, implementing,

and using the MAIs system leads employees to understand, accept, and encourage the use of MAIs (Shields, 1995). According to the interview data from the interviewee in Entity A1:

“Both training and education facilitated the implementation of MAI. The first step was when the Egyptian expert provided information about the concept and the benefits of MAI for managers and employees. Then he explained the terms of activity and cost driver to make everything clearer and understandable. The second step was how our managers provided training and workshops about the process of MAI implementation for the MAI project team. This training course was designed by the Egyptian expert which made it much easier to understand with him explaining all the details and implementation processes”.

During the earlier decades of the 20th century, accessing and processing information was a tedious task with non-computerized information systems. However, the developments in computerized information technology over the past three decades have considerably reduced information-processing costs. The advanced information technology has also facilitated the flexibility of extracting information as and when needed. For most companies these developments have reduced the costs and barriers of operating management accounting innovations such as the MAIs system (Krumwiede, 1998; Brown *et al.* 2004). The interviewee in Entity A1 said:

“The more sophisticated information technology is the key to change; a definite key to change. The technology here is to facilitate producing information, and the information is the knowledge that will create change. MAI as a system needs information that will bring advantage to create change”.

He added:

“MAI requires a lot of data, and without a more sophisticated information system, we can't deal with all the requirements of the MAI system”.

Factors that Motivate the Implementation of MAIs

Shields (1995) considered competition as the most important external factor for stimulating managers to choose to implement MAIs. Cooper (1988b) has also identified that companies facing fierce competition should implement MAIs, as it is argued that companies operating in a more competitive environment have a greater need for advanced costing systems such as MAIs, that more accurately assign costs to cost products. This is because competitors are more likely to take advantage of any errors or mistakes by managers that have relied on inaccurate cost information to make decisions. The interviewee in Entity A1 points out that:

“We work in a highly competitive environment. Using MAI, is a key to our success and to being a great competitor in the market. MAI plays an important role in the manufacturing daily tasks such as decision-making making it easier especially in situations that the managers are uncertain with the decision they supposedly make”.

The size of the manufacturing has been found to be an important factor influencing the implementation of ABC (Bjornenak, 1997). Previous studies have also noted a positive relationship between manufacturing size and the implementation of MAIs systems (Innes and Mitchell, 1995; Bjornenak, 1997; Malmi, 1999). A possible reason for this is that larger companies have relatively greater access to resources to experiment with throughout the introduction of MAIs. The interviewee in Entity A1 said:

“In the past, every morning I was responsible for gathering all product data, entering it into EXCEL for analysis, and reporting results to top management. Unfortunately, the growing size of our manufacturing

made this impossible. For it was leading to an increased number of products, which made it difficult to manage information manually or even by the old system”.

Barriers to MAIs Implementation

Friedman and Lyne (1999) identified the role of consultants during the process of MAIs implementation as the most important factor impacting the success of implementing MAIs. The main barrier to MAIs implementation encountered in Manufacturing One is the lack of local consultant companies. The interviewee in Entity A1 said that:

“There are not enough consultants that provide education about MAI. We should have more practical MAI training which each manufacturing should provide. Each manufacturing wanting to implement MAI should have advisers to check and give advice”.

The issues related to the supply side of diffusion of MAI innovations were mentioned during the interview with the head of the Cost Accounting department in Manufacturing One. For example, the need for more conferences and seminars in accounting issues in general and MAIs in particular, as well as the need for journals specializing in management accounting to be made available to accountants and financial managers in Jordan. He also commented on the shortage of Management Accounting research and PhD degrees in this area of management accounting within Jordanian public universities:

“Our universities are not active in management accounting research. This is the first time I have seen a questionnaire or participated in an interview on the process of MAI implementation in our sector in such detail as yours. I actually wanted to register and study for a PhD in accounting in Jordan, but we do not have such doctoral courses in our public universities”.

The implementation of MAI demands an adequate amount of internal resources as it builds ownership, knowledge, and action within the manufacturing. These resources give employees the opportunity to learn about the MAIs and their benefits, making them less resistant to change (Shields, 1995). According to the interview data from the interviewee in Entity A1 said:

“We need a large amount of money to spend on training programs, hardware, and network after MAI is ready to be implemented. I do not believe we have enough money for that”.

Innes and Mitchell (1991) point out that the most common problems perceived by companies implementing MAIs are related to the amount of work involved in its implementation. The interviewee in Entity A1 said that:

“Implementation of MAI is a full time occupation when it gets going. When the top management chose me to move to the MAI implementation team, I had no time for any other operations that I used to do on a daily basis.”.

He added:

“There is a shortage of staff in many major areas of MAI implementation processes. Most of them require a high salary, which makes it time consuming and asks for making hard effort to find the right personnel”.

Implementation of MASs in entity A2

Manufacturing Two is listed in the Mining and Extraction industry sector with a total workforce of around 395 in 2014. The manufacturing was established in 1993 and In 1999, the decision was made to move from

the traditional cost system to MAIs. The process of ABC implementation approximately finished on March 2003.

Factors that Facilitate the Implementation of MAIs

The commitment of top level management has emerged in the literature as an evident process in ABC implementation (Krumwiede, 1998; Brown *et al.*, 2004). The interviewee in Entity A2 said:

“Our managers encourage us to use MAI all throughout the time we spend at the organization. Without their encouragement, we would not have been able to implement and use these sophisticated techniques”.

Brown *et al.* (2004) argued that top management must develop a strong business justification for the implementation of MAIs, set clear and measurable goals, and hold direct reports accountable for achieving them. The interviewee in Entity A2 said:

“Since the manufacturing started implementing the system, our managers are doing a review every three months, talking to all managers in the departments. They need to review MAI to see if the system we have now is meeting our requirements for them to decide whether to implement it until the end or to find some other system with more advantage”.

Chanegrih (2008) pointed out that top management support as well as the level of training and education, play a key role in the implementation of MAIs and in decreasing the level of resistance to change. The interviewee in Entity A2 said:

“Training is probably the most important factor that facilitates the implementation of MAI. We have central training units in our manufacturing for our employees, aiming to educate them about the concept of MAI and encourage them to use it”.

Factors that Motivate the Implementation of MAIs

Anderson (1995) and Gosselin (1997) suggested that companies facing intensely competitive market environments tend to employ MAIs. The interviewee in Entity A2 said

“We work in a very tough market place. If we continue working with the traditional costing system at our manufacturing, we will withdraw from the market soon enough. The information we gathered from the traditional system is too slow and unreliable to keep up with the market place”.

Barriers to MAIs Implementation

Cohen *et al.* (2005) found that the main difficulties that encountered the implementation of MAIs were the high cost of implementing the system and high cost of consultants' companies. The interviewee in Entity A2 said:

“After making a large investment in MAI, companies may be unwilling to invest in the skills and education needed to keep these vital systems running. High cost of consulting and lack of staff to support the implementation of ABC are the main disadvantages of the implementation of this system”.

Friedman and Lyne (1999) found that the difficulty in the selection of cost drivers was a factor that could be identified as a critical technical issue, which could influence the implementation of the MAIs system. The interviewee in Entity A2 said:

“The techniques of selecting cost drivers were changeable all the time, but we had a hard time selecting appropriate cost drivers more than coping with them”.

Friedman and Lyne (1999) found that the lack of internal recourse was a factor that could be identified as a barrier to the implementation of the MAIs. Chanegrih (2008) pointed out that top management support and walk through, as well as level of training employees and managers, play a key role in the implementation of MAIs and in overcoming the resistance to change. The interviewee in Entity A2 said:

“My manufacturing’s top management encouraged us from the very beginning to implement MAI, but this implementation was going to be a little difficult with the limited budget used for MAI. Due to cost constraints and putbacks, insufficient training for existing and new employees is bound”.

Implementation of MAIs in entity A3

Manufacturing Three is listed in the Tobacco and Cigarette sector with a total workforce of around 523 in 2008. The capital of this manufacturing at the end of 2008 was 44 million JD (1 JD = £1 approximately). The manufacturing was established in 1992. The process of ABC implementation finished approximately in June 2004.

Factors that Facilitate the Implementation of MAIs

Like the two previous interviews with the two companies, the interviewee in Entity A3 said:

“Top managers encourage us to use MAI by making us go through trials on hand and help by guiding with the errors we make with the implementation. Without their encouragement we would not be using this advanced costing technique or wouldn’t know how it would be used”.

Top management plays an important role in relation to the availability of the resources used for the new costing system. The commitment and support of top management has emerged in the literature as a key factor evident in MAI adoption (Krumwiede, 1998; Brown *et al.*, 2004) making it easier to conclude that top management is always the first and most important thing to look at when making the decision of implementing the new system. This top management support is argued to be critical, due to the ability of managers to focus resources on the adoption process and to help motivate those who are resistant to the operation of the system (Shields, 1995). the interviewee in Entity A3 said:

“Our managers have been going through all the processes, step by step and are supporting us to change and implement MAI with each step we take in the organization. They provided all the necessary resources and equipment needed for implementation of this new costing system”.

Education and training of employees who are using the system is considered to be of the same importance as the new system investment, because when people do not have the necessary skills or knowledge to implement and control the system, even ‘perfect’ systems would not be able to produce high quality technical information. From the existing literature, it is clear that the lack of appropriate education and training can cause serious problems during the implementation leading in turn to the damage of resources of the organization. The interviewee in Entity A3 said:

“Before implementing MAI, an American expert had provided a seminar to educate our top managers and employees about the concepts and benefits of MAI and also to plan what results the manufacturing wanted to come from MAI”.

Factors that Motivate the Implementation of MAIs

Bjornenak (1997) claimed that one of the most important external factors for stimulating managers to consider implementing the new costing system was competition. Cooper (1988b) has also stated that companies in a very strong and competitive market place need to be more accurate when assigning product costs. Therefore using the new advanced costing system MAI will be more efficient throughout the process of assigning. Market competitors will grab any gap to gain advantage over other companies in the market, so as to obtain all customer attention and have their reputation spike up. The interviewee in Entity A3 said:

“Working in a highly competitive market, needs high standards and performance to succeed; implementing MAI is the first most important key factor to the success of the organization and to being the best of competition in the industry sector, because MAI data plays an important role in achieving this”.

He added:

“In the past, the manufacturing could not pinpoint exactly the amount of profit or loss, and couldn't figure out where each factory had a problem or default which resulted in a waste that couldn't be fixed. Management felt the need to find a solution to obtain clear information as to how to solve all the issues that were unsolved, to make decision making much easier, thus it was decided that MAI is to be implemented.”

Barriers to MAIs Implementation

Friedman and Lyne (1999) stated that in order to implement MAI to its fullest, the most important key would be having specialists to consult during the process of MAIs implementation. The main barrier or disadvantage to MAIs implementation encountered in Manufacturing A3 was the minimized or deficiency of local specialists or consultants in Jordan. The interviewee in Entity A3 said:

“The deficiency of local consultancy companies in Jordan, makes the implementation more costly because of having to depend on expensive foreign specialists and expertise”.

the interviewee in entity A3 pointed out the importance of the relationship between industrial companies, universities, and companies. He stated that a relationship between these organizations does not exist or is minimized to the fullest making it very weak. If promoted and brought out into the light, such cooperation would certainly increase knowledge in advanced costing techniques and definitely improve accounting practices in the Jordanian industry sector.

“To be honest, all through my history at this manufacturing, the relationships and team work between professionals have been very weak. Communicating only happens when someone needs a question answered, or when an interview is called for. I think that the cooperation and working together with all professionals would improve our current costing system and we would be able to implement the new costing system MAI easily”.

Cohen *et al.* (2005) argued that employees in organizations are most likely to face a hardness or resistance in switching of systems and implementing the new system MAI because of the change of structure of the organization. the interviewee in Entity A3 said:

“In order to get our employees to participate in the process of educating themselves and implementing the new system MAI, there was a huge need to change the structure of the organization.”.

Friedman and Lyne (1999) found that one of the most critical factors that could have an impact on the implementation of the new system MAI, was the trouble of selecting cost drivers.. The head of the cost department in Entity A3 said that:

“Selecting cost drivers was probably the biggest challenge and the operation that needed the most attention, everyone has to have awareness of why we need to collect this information and what the benefits of collecting it are”.

Implementation of MAIs in entity A4

Manufacturing A4 is listed in electrical industries with a total workforce of around 242 in 2014. The manufacturing was established in 1983. In 2004 the decision was made to move from the traditional cost system to MAIs system. The process of MAIs implementation approximately finished in June 2006.

Factors that Facilitate the Implementation of MAIs

Shields (1995) suggested that the support of top management is the first and most important key or factor to the success of implementing the new ABC system. This is because managers have the ability to use resources and focus them into the process in a specific way for the good of the manufacturing. Managers also have the power to help motivate employees that are being resistant to change. the interviewee in Entity A4 said:

“My top manager has been involved with the MAI system since its implementation until now. For instance, he has registered to get his CMA certificate to be up dated with the system”.

Top management should be able to commit the resources needed for the process and develop the perfect goals and strategies to enable the implementation of MAIs. By using MAI for making important and powerful decisions, managers should show a strong commitment to the system. According to the interview data from the head of the Cost Accounting department in Entity A4:

“Our managers have the basic skills needed to implement MAI and we can always start with the simple and beginner system and skills then build up to what needs to be done”.

Another most important factor that plays a role in the success of implementation is the training factor. Training relates to design and education, implementation, and the application of the learned aspects in relation to MAI. Shields (1995) suggested that if people do not understand why or how the MAIs system works, they are more likely to ignore or misuse it and less likely to design a more accurate costing model. Training in implementation will help the team understand the correct way to implement the MAIs. Training employees of the proper usage of MAIs helps the members understand how to interpret MAIs information and how to use it for target goals. the interviewee in Entity A4 said:

“MAIs create massive change, I think everyone has to be ready to deal with change, or at least know what their responsibilities are and what they need to do. Things need to be well-planned and well-documented, if the manufacturing is just suddenly switching to using MAIs, and there hasn't been enough thought about what procedures need to change, it will cause serious problems”.

Factors that Motivate the Implementation of MAIs

The limitations of traditional or old costing systems, push companies to gain solutions to solve issues that aren't solved unless by implementing MAI. Limitations include, lack of details of cost information for

making decisions, inaccuracy of product costs and cost allocation, and lack of timely cost information. This information is useful in assisting the management in making various important decisions. the interviewee in Entity A4 said:

“We don’t really have any confidence in any figure that results from our old costing system to make any decisions. This problem can be solved by implementing MAIs”.

Barriers to MAIs Implementation

Cohen *et al.* (2005) found that one of the main difficulties encountered in the implementation of MAI is related to the high cost of implementation of the new system. the interviewee in Entity A4 said:

“A large amount of money was spent on training programs, hardware, and software with the old system before MAI was really implemented”.

Friedman and Lyne (1999) stated that one of the most critical factors that could influence the new implementation of MAI is the difficulty of choosing or selecting cost drivers. The interviewee in Entity A4 said:

“The methods of selecting cost drivers were changing all the time, leading to the conclusion that hardships were met by coping with the changes”.

Implementation of MAIs in entity A5

Manufacturing A5 is listed in Chemical industries with a total workforce of around 693 in 2014. The manufacturing was established in 1993. The process of MAI implementation approximately finished in March 2007.

Factors that Facilitate the Implementation of MAIs

Top management has all the power in the organization to gain advantage by implementing the MAIs (Krumwiede, 1998; Brown *et al.*, 2004). With their support and commitment, they are able to focus resources for such new projects and help give determination to employees that are unsure or resistant to change (Shields, 1995). the interviewee in Entity A5 said:

“Top management dedicated significant time and resources in order to support their staff in implementing MAIs. Although they were not directly involved, they encouraged us to learn how to use the system and helped by giving many training courses”.

He added:

“Management’s commitment and communication of the concepts of the new system MAIs was the key to implementation and success of the project”.

Krumwiede (1998) claimed that training is important to ensure that employees understand Activity Management practice, in order to reduce resistance to change and to sustain successful performance. the interviewee in Entity A5 said:

“The process of MAIs implementation started when the consultants launched the project by conducting a two-day training seminar about MAIs concepts”.

He added:

“Training is a very important aspect of any new start. If employees don’t know how to deal with the new processes of a new system, they will not be able to continue to cope with the system”.

Factors that Motivate the Implementation of MAIs

The positive side of the old or traditional system that is used is that it has deficiencies that need to be looked over and fixed as soon as possible. Deficiencies such as the inaccuracy of important information such as product costs and of cost information that needs a large amount of time to be collected, push companies to find a different way to solve their problems by implementing a new system like the MAI to improve the information that is collected making it more accurate. The interviewee in Entity A5 said:

“The benefits that I received from the traditional costing system were too little too late”.

Barriers to MAIs Implementation

Friedman and Lyne (1999) that another factor that could limit the advantages of the new implementation, is the hardships of selecting cost drivers. the interviewee in Entity A5 said:

“There has been always a need for research to identify cost drivers that are applicable to our business”.

Then he pointed out that:

“Most of our employees, at every level, do not understand exactly what MAIs is and how to cope with or understand it. The lack of knowledge and insufficient documentation make MAIs more complicated. There is a need to educate all staff about MAIs especially those who work on it and those who gather information about activities and cost drivers”.

He added:

“Overall, there is no enough knowledge about MAIs. Clear policies will make a better system and a better understanding of the new concepts and results that should show in the future”.

Implementation of MAIs in entity A6

Manufacturing A6 is listed in the Engineering and Construction sector with a total workforce of around 366 in 2014. The manufacturing was established in 1994. In 2002, the decision was made to move from the traditional cost system to the MAIs system. The process of MAIs implementation approximately finished in September 2005.

Factors that Facilitate the Implementation of MAIs

Anderson (1995) argued that top management is vital for a manufacturing’s processes, as it is difficult to implement advanced systems such as MAIs in companies without their full support (Brown *et al.*, 2004). These conclusions, in fact, match with most facts or opinions of most personnel that have done research or studies. These studies stated that with the walkthroughs and motivation of top management, it is very likely for a manufacturing’s innovations to succeed. The interviewee in Entity A6 said:

“The managers’ knowledge and education was the key issue in the process of the implementation of MAIs”.

The training factor is also as said before, was considered as a key role in this new system. In training courses and classes, employees will be taught how to deal with, use, and be able to cope with this new implementation. the interviewee in Entity A6 said:

“The consultant firm was invited to our factory to discuss its methodology and approach of MAIs implementation. The consultants, after a general MAIs introduction, proposed something called the cost object approach. They said our cost of activities should be assigned to the cost object’s demand for the consumption of each activity”.

He added

“MAI is a new system to be used in Jordan. Only a few companies had the chance to implement and work with it. I know that the process of implementing MAI in our manufacturing would rely on re-educating my staff for this new process.

Factors that Motivate the Implementation of MAIs

Bjornenak (1997) claims that many external factors have effects on the implementation of MAI. Like many organizations have stated, competition is the most important external factor for stimulating managers to consider implementing MAIs. The interviewee in Entity A6 said:

“At the end of the day, our managers would have liked to have known the accurate costs of the products. The old costing system will not assist in this matter at all, because it was based on invalid assumptions.

Barriers to MAI Implementation

Friedman and Lyne (1999) had the most important role or factor in implementing the MAI system the consultant’s role. Consultants would make implementation easier in way never imagined for an organization. These consultants impact or are in the favour of the new system succeeding. Lack of local consultants companies in Jordan was the main barrier that was faced in manufacturing A6. The interviewee in Entity A6 said:

“In Jordan there was a huge gap that was being faced by organizations looking to implement the new system MAI, making companies depend on more expensive ways like foreign expertise”.

He added:

“For a small manufacturing like our manufacturing, MAIs is too expensive to implement we cannot handle the excessive costs”.

3. CONCLUSIONS

This section analysed the data collected from interviews with representatives of 6 entities in Jordan that have used MAIs. The 6 manufacturing that were interviewed gradually moved to using MAIs system over the last 15 years. According to findings from qualitative data, all companies agreed that top management are fully supportive, committed, and involved in the process of MAIs implementation. This finding is consistent with the more general finding that almost all successful innovations require the encouragement of top management. All companies also approved that training was one of the most important factor to facilitate their decision to used MAIs. In training, employees will be told how MAI works, how to interpret and use MAIs information for product design, product pricing and process improvement, as well as how

the compensation system will be accommodated to incorporate the performance measurement. Training reduces employees' in confidence in MAIs and prevents them from feeling pressured by the implementation process. Training in designing, implementing, and using the MAIs system leads employees to understanding, accepting and encouraging the use of MAIs.

The majority of the respondents from the participating companies (5 entity out of 6) indicated that the managers and employees are fully educated about MAIs system before, during, and after their companies implemented it. This result supports Argyris and Kaplan's (1994) findings that education about MAIs system is also a crucial step in the success of MAIs implementation as, in this step, both managers and employees knew how to tell the most important differences between the old traditional system and the ABC system. They also knew how the process of MAIs would overcome the shortcomings of the TAS.

The put backs of traditional costing system, such as lack of details of cost information, inaccuracy of product costs, and lack of time important cost information motivate companies to seek a solution by implementing MAIs. Five companies out of six indicated that, the limitations of existing costing system motivated their decision to implement MAIs. They also indicated that MAIs system generates more detailed and accurate accounting information. This detailed and accurate information is more useful in the decision making process for management.

The majority of the respondents from the participating companies (5 companies out of 6) indicated that the increase of competitive markets motivated their decision to implement MAIs. Companies operating in a more competitive environment have a greater need for advanced costing systems such as MAIs that more accurately assign costs to cost products. This is because competitors are more likely to take advantage of any errors from managers having relied on inaccurate cost information to make decisions.

During the process of implementing MAIs, the manufacturing could be faced with problems or difficulties related to changing implementation in practice or resistance to change from the employees. Thus, barriers to change could make the change process slower, hinder it, and even prevent it. The high cost of MAIs implementation, high cost of consultants, and difficulties in the selection of cost drivers are indicated by six companies as the most common barriers encountered during the implementation of MAIs.

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REFERENCES

- Abdel-kader, M. and Luther, R. (2008), The impact of firm characteristics on management accounting practices: A UK-based empirical analysis, *The British Accounting Review*, **40**, pp. 2-27.
- Anderson, S. (1995), A framework for assessing cost management system changes: the case of activity-based costing implementation at General Motors, 1986-1993. *Journal of Management Accounting Research*, **7**(Fall), pp. 1-51.
- Argyris, C. and Kaplan, R. (1994), Implementing new knowledge: the case of activity-based costing, *Accounting Horizons*, **8**(3), pp. 83-105.
- Askarany, D. (2006), Characteristics of adopters and organisational changes. *Thunderbird International Business Review*, **48**(5), pp. 705-725.

Factors Influencing the Adoption and Implementation of Management Accounting Innovations (MAIs):

- Askarany, D. and Yazdifar, H. (2007), Why ABC is not widely implemented, *International Journal of Business Research*, [Online journal]. http://findarticles.com/p/articles/mi_6773/is_1_7/ai_n28522853/?tag=content;col1.htm. (13 May 2016).
- Bhimani, A., Gosselin, M., Ncube, M. and Okano, H. (2007), Activity-based Costing: How far have we come internationally? *Cost Management*, **21** (3), pp. 12-17.
- Bjornenak, T and Mitchell, F. (2002), The development of activity based costing journal literature, 1987-2000. *The European Accounting Review*, **11**(3), pp. 481-508.
- Bjornenak, T. (1997), Diffusion and Accounting: The Case of ABC in Norway. *Management Accounting Research*, **8**, pp. 3-17
- Bjornenak, T. and AX, C. (2005), Bundling and diffusion of management accounting innovations: the case of the balanced scorecard in Sweden. *Management Accounting Research*, **16**, pp. 1-20.
- Bjornenak, T. and OLSON, O. (1999), Unbundling management accounting innovations, *Management Accounting Research*, **10** (4), pp. 325-338.
- Brown, D., Booth, P. and Giacobbe, F. (2004), Technological and organizational influences on the adoption of activity-based costing in Australia. *Accounting and Finance*, **44**, pp. 329-356.
- Chanegrih, T. (2008), Applying a typology of management accounting change: a research note. *Management Accounting Research*, **19**, pp. 278-285.
- Cohen, S., Venieris, G. and Kaimenaki, E. (2005), ABC: adopters, supporters, deniers and unawares. *Managerial Auditing Journal*, **20**(9), pp. 981-1001.
- COOPER, R. and KAPLAN, R. (1988b), Measure costs right: make the right decisions. *Harvard Business Review*. September – October, pp. 96-103.
- FRIEDMAN, L. and LYNE, R. (1999), *Success and failure of activity-based techniques: a long-term perspective*. London: CIMA.
- Hopper, T., Tsamenvi, M., Uddin, S. and Wickramasinghe, D. (2008), Management accounting in less developed countries: what is known and needs knowing. *Accounting, Auditing and Accountability Journal*, **22**(3), pp. 469-514.
- Hornngren, C., Foster, G., Datar, S., and Teall, H. (2000), *Cost accounting: a managerial emphasis*, 2nd edn. Scarborough: Prentice Hall.
- Innes, J. and Mithchell, F. (1991), ABC: A survey of CIMA members. *Management Accounting (UK)*, **69**, October, pp. 28-30.
- Krumwide, K. (1998), The implementation stages of activity-based costing and the impact of contextual and organisational factors. *Journal of Management Accounting Research*, **10**, pp. 239-277.
- Shields, M. (1995), An empirical analysis of firms: implementation experiences with activity-based costing. *Journal of Management Accounting Research*, **7**, Fall, pp. 148-164.
- Smith M., Abdhllah, Z. and Abaul Razak, R. (2008), The diffusion of technological and management accounting innovation: Malaysian evidence. *Asian Review of Accounting*, **16**(3), pp. 197-218.