

# **TOWARDS AN UNDERSTANDING OF THE DIMENSIONS AND FACTORS OF MANAGEMENT ACCOUNTING CHANGE**

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## **ABSTRACT**

This paper aims to discuss the main dimensions and factors of management accounting change and the current mainstream of research in the area by conducting a literature review in this subject. The paper uses the publicly available evidence to show that internal and external environment of organizations elite engaged in engendering the change in management accounting practices in developed and developing countries. The paper concludes that most previous studies have concentrated on management accounting change within large organizations. Researchers have been given little attention to the nature of change, in other words, the different types of change in management accounting and the processes that have taken place to affect it in Small and Medium-sized Enterprises (SME's). It also concluded that there is no generally agreed upon definition of change in management accounting. In addition, little consideration has been given to the interrelations between causal factors of change.

**Keywords:** management accounting, literature, change, factors, dimensions.

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## **INTRODUCTION**

Change in management accounting has increasingly become a current focus for research. As Burns and Scapens (2000) state, “*management accounting change has become a topic of much debate in recent years. Whether management accounting has not changed, has changed, or should change, have all been discussed*”. Despite much debate on this topic, there is no consensus yet as to a clear – cut definition of management accounting change. Undoubtedly, the exact nature of changes has often been taken for granted by most researchers and its definition has been avoided (Quattrone & Hopper, 2001). In general, many researchers have focused on change in management accounting as an outcome rather than emphasizing the process involved in implementing or introducing new management accounting systems or in modifying existing systems within organizations (see Innes & Mitchell, 1990; Cobb et al., 1995; Libby & Waterhouse, 1996; Williams & Seaman, 2001; Granlud, 2001; Burns & Vaivio, 2001; Yazdifar et al., 2008; Jansen, 2011; Modell, 2012; Ahmed & Leftesi, 2014; Alsharari et al., 2015; Armitage et al., 2016).

Management accounting change is not a uniform phenomenon. Its nature and form may differ across multiple dimensions and this difference has been neglected by many researchers who have tended to study change per se rather than distinguishing it through a categorization by type. Therefore, one might expect the causal factors of change also to be varied and this has indeed been confirmed by management accounting researchers. It is clear that both the external factors and internal factors relating to the organization concerned have influenced the recent development of new management accounting systems. For instance, Shields (1997) states that the potential change drives are competition, operations technologies, information processing technologies and organizational designs. These factors have stimulated new advanced management accounting systems such as Activity - Based Costing (ABC) (Anderson, 1995; Anderson & Young, 2001), Balanced Scorecard (BSC) (Kaplan & Norton, 1992), Strategic Cost Management (SCM) (Shank, 1996) and Just – in - Time (JIT) (Kaplan, 1986) to be adopted. These innovations in management accounting (e.g., ABC and BSC) have been suggested as a substitute for traditional management accounting techniques in order to respond to changes that have happened in the business environment (Lasyoud, 2015).

The remainder of the paper is structured as follows: Section 2 sheds some light on the main arguments about the concept of change in management accounting. In Section 3 the different dimensions or a typology of change in management accounting are explained. Next, Section 4 highlights the factors that caused change in management accounting and finally, Section 5 concludes the paper.

## THE CHANGING NATURE OF MANAGEMENT ACCOUNTING

The nature of accounting change is problematic (Pettigrew, 1995; Kanter et al., 1992). There is no generally agreed definition of management accounting change. Nevertheless, the meaning of change can be imputed from the studies undertaken. Dawson (1994: 10), defines change in an organization as “*any alteration in tasks or activities*”, but he also viewed change as a continuous process which can be progressive or regressive and has both intended and unintended consequences. Pettigrew (1995) points out that change has several aspects: a change involves the speed, quantity and quality of change. He argues that applying different theories of change will lead the researcher to concentrate on various aspects of change. Thus, Pettigrew (1995) concludes that the meaning of change depends on the definition utilized by the individual researcher in his / her theoretical framework. Consequently, he advocates that researchers define what they mean by change in their research design. Kanter et al. (1992) stated that the viewpoint of those who think they are creating change may be different from those who will be affected by these changes. He also argues that the intentional change might be a decision made to formalize the type of activity that had existed in the background of the organization the whole time.

In the field of management accounting, much has been written in recent times on the subject of management accounting change in Large Organizations (see Libby & Waterhouse, 1996; Burns et al., 1999; Burns & Scapens, 2000; Burns & Vaivio, 2001; Williams & Seaman, 2001; Sulaiman & Mitchell, 2005; Laitinen, 2006; Lukka, 2007; Jansen, 2011; Ahmed & Leftesi, 2014; Alsharari et al., 2015; Armitage et al., 2016, Alsharari & Youssef, 2017). (Burns & Scapens, 2000) contend that “*management accounting change has become a topic of much debate in recent years*.

*Whether management accounting has not changed, has changed, or should change, have all been discussed*". Moreover, the environment in which management accounting is practiced surely appears to have changed, with advances in information technology, new management strategies, different organizational structures and highly competitive environments (Ezzamel et al., 1996). Although some researchers claimed that the basic nature of management accounting practices has not changed (Drury et al., 1993), there is proof that the use of accounting systems or practices within organizations has changed (Bromwich & Bhimani, 1994).

Wickramasinghe and Alawattage (2007) point out that management accounting change can be reflected in recent developments in three key areas: cost management, strategic management and management accounting in new organizations. Furthermore, they have introduced a definition of management accounting from different standpoints, such as technical - managerial, pragmatic - interpretive and critical – socio - economic, showing management accounting change as a change from a mechanistic approach (e.g. mechanization in technology, production - orientation in management, and conventional wisdom in management accounting) to post - mechanistic approach (e.g. digitalization in technology, customer -orientation in management and new management accounting). According to them, the process of change reflects on the question of how management accounting techniques emerged, evolved and were transformed as a result of the changing competitive environment and the advanced manufacturing technology. According to Burns and Vaivio (2001), change can be considered as a centrally driven effort managed by the top management that recognizes the need for change as well as planning, organizing and controlling the change. On the contrary, lower managerial levels might be the main players in the process of change when the top management is not able to identify the particular circumstances that require change in accounting practices.

Management accounting change is not a uniform or homogeneous phenomenon (see Hopwood, 1987; Granlund, 2001; Sulaiman & Mitchell, 2005; Chanegrih, 2008, Alsharari & Abougamos, 2017). Granlund (2001) pointed out that there is no clear - cut definition of change in management accounting. Accordingly, one might expect the causal factors of change to be varied and this has been confirmed by researchers in the field of management accounting. It is apparent that both the external environmental factors (macro

- context factors) and internal factors (the micro- organizational factors) have influenced the recent development of new management accounting systems and techniques. According to Macy and Arunachalam (1995), management accounting change is defined as the ability of management accounting systems to adapt to changes in an organization's internal and external environment. In addition, change in environment means uncertainty and risk which generate a demand for further management accounting change in the shape of 'non - financial' measures (Vaivio, 1999).

The association between management accounting practices and the business environment has also been investigated in prior studies. For example, researchers such as Wijewardena and De Zoysa (1999) argue that management accounting should respond to any change in the environment and accountants must make timely changes in their practices if accounting is to contribute more effectively to the success of organizations. Kaplan (1985) points out that management accounting systems will change or have to change whenever there is a change in the business environment within which organizations function and describes it as a cause -effect relationship. For instance, Alsharari and Youssef (2017) conducted a research to explain the processes of management accounting change in the Jordanian Customs Organization (JCO) within its social context following public sector reforms. It focuses on the regulative way in which a new accounting system of government financial management information system (GFMIS) was implemented throughout three levels of an institutional framework. They found that the GFMIS contributed effectively to the development of a comprehensive approach to the preparation of the budget while it works to facilitate the estimated process of expenditures and revenues. The study draws on institutional theory as a theoretical framework for interpreting the findings. In the JCO case, the study recognized that the implementation of GFMIS may have emerged mainly as a response to external political and economic pressures. They also confirmed that management accounting is not a static phenomenon but one that changes over time to reflect new systems and practices (*ibid*). Also, to understand the process of management accounting change in the electronic sector, Innes and Mitchell (1990) classified the causal factors to management accounting change into three major categories as follows:

1. Motivators: factors that affect change in a general way, including competitive market, organizational structure, production technology, product cost structure and short product life cycle;
2. Catalyst: factors that are related directly to the timing of change, including poor financial performance, loss of market share, organizational change, new accountants and launch of competing products; and
3. Facilitators: factors deemed significant for change but not adequate in themselves, including accounting staff resources, degree of autonomy, accounting requirements, authority of accountants and accounting computing resources.

There has also been an argument concerning whether management accounting has changed to respond to the change in the business environment, such as increased competition, production technology and information technology. For instance, Johnson and Kaplan (1987) argue that there has been no considerable change in management accounting systems since 1925, despite the great changes in numerous aspects of the business environment, for instance increased competition, fast progress in production and process technology. Furthermore, many previous studies concluded that traditional management accounting systems are still extensively utilized and new systems, such as ABC, are not being utilized widely (Burns et al., 1999). In contrast, there is another standpoint opposing the claim of Johnson and Kaplan (1987). For instance, Scapens and Burns (2000) claim that there have been a number of innovations in management accounting since the published study of Johnson and Kaplan in 1987, such as the ABC and Balanced Scorecard (BSC) techniques.

## **DIMENSIONS OF MANAGEMENT ACCOUNTING CHANGE**

Change can be addressed in a variety of dimensions. This is evident from the main aspects of change which are reflected in the definition of the American Heritage Dictionary, 4th Edition, 2001. This definition comprises all of the following aspects: becoming different or undergoing alteration;

transformation or transition; making an exchange; modifying; going from one stage to another; substitution; replacing with another system; giving and receiving reciprocally and abandoning. This definition shows different types of change and this diversity demonstrates that change is not a homogeneous phenomenon in general. It is not fixed in its nature and can be different in terms of importance and implications.

Accordingly, researchers in management accounting have focused on different types of change (dimensions of change). For instance, Sulaiman and Mitchell (2005) and Chanegrih (2008) have focused on the typology of change in management accounting (the types of change), and on management accounting control systems in their studies. Sulaiman and Mitchell (2005) were the first to develop a typology of change in management accounting in order to study both its nature and location. Their typology proposed five categories of change in technical management accounting, namely: (1) addition, (2) replacement, (3) output modification, (4) operational modification and (5) reduction. The results of their research in Malaysian companies show that various types of change are represented in all management accounting sub-systems, with the exception of management accounting reduction, which was not observed in any of the companies surveyed. Furthermore, the main result of Sulaiman and Mitchell (2005) demonstrates that the change in management accounting is not a uniform phenomenon. Chanegrih (2008) conducted a research on 65 Large French manufacturing companies to replicate and extend Sulaiman and Mitchell's study.

Apart from the similarities, some differences due to cultural and macroeconomic factors are noted. Chanegrih's findings advance understanding of how national cultures and the macroeconomic context influence the nature and location of change in management accounting and control systems (MACS). He also found that the rate of change in management accounting in Malaysian companies was higher than that in the Canadian, Singaporean, and French companies (cf., Libby & Waterhouse, 1996; Williams & Seaman, 2001; Sulaiman & Mitchell, 2005). Accordingly, Chanegrih, in his study, has refined Sulaiman and Mitchell's typology by separating output modifications into two dimensions, *information representation changes* and *information frequency changes*. This extension enhances examination of the heterogeneous nature of change in MACS.

The previous studies (e.g., Libby & Waterhouse, 1996; Williams & Seaman, 2001; Sulaiman & Mitchell, 2005; Chanegrih, 2008) have agreed that the highest level of change in management accounting was in controlling, planning and costing sub-systems. This section will illustrate different types of change in management accounting, as shown in Table (1). It also reviews how researchers conceived or addressed the issue of change in management accounting. Therefore, the researchers will review the various dimensions of change in detail as follows:

### **Introduction of New Techniques Where No Management Accounting Previously Existed (Addition)**

This dimension involves the adoption of new techniques within the existing body of management accounting system in an organization, for instance, the first use of a product costing system or the first implementation of the ABC, the BSC and performance reports. This implementation is often related to the early stages of organizational development in the organization.

Many researchers have viewed change in management accounting as a discrete event by adopting a new technique or system where none previously existed in the organization. Kaplan and Norton (1992) proposed the Balanced Scorecard technique to managers as the key measure of financial and non - financial performance. They claimed that the purpose of non - financial performance measures is to supplement the traditional financial performance techniques such as earnings on investment. They also argued that the BSC delivers performance measurements to ensure the long - term survival of organizations. Another example, Ax and Bjornenak (2005) found out that 61% of Swedish enterprises are either currently using the Balanced Scorecard or were planning to use it within the next two years. Similarly, Malmi (2001) found out that 61% of Finnish companies had either adopted or were adopting the Balanced Scorecard technique. Other researchers, for instance, Vamosi (2000), adopted this dimension in a study of the introduction of new systems such as cost estimates for price calculation and cash flow management in privatized companies. In addition, this type of change can occur by means of the introduction of new managerial policies. For instance, Innes and Mitchell (1990) found this nature of change in their process of management accounting change study in the electronic sector in Scotland. It included the new management

accounting supporting policies utilized by the large firms for cost control, cost reduction, production location and product quality.

New management accounting techniques such as ABC and Target Costing (TC) have also been discussed in the literature. For example, Krishnan's study (2006) revealed that a large number of service firms are using the ABC technique to provide timely and quality information to help managers in their decision making process. Nevertheless, despite the popularity and importance of ABC within the literature and supportive technological advances, it has not achieved a large scale of adoption. Abdul Majid and Sulaiman (2008) described the process of ABC in two large Malaysian companies as well as Malaysian multinational companies. They recognized that ABC is a valuable method to improve the performance of these two companies, although it is not widely adopted by Malaysian companies. Similarly, Maelah and Ibrahim (2007) found out that adoption of ABC in Malaysian manufacturing companies is at infancy stage, with 36% adoption rate. They argued that many Malaysian companies still use the traditional cost accounting systems in dealing with overhead costs. Moreover, this type of change can arise from the introduction of TC. In their survey, Yazdifar and Askarany (2012) indicated that TC is equally prevalent among manufacturing and service companies, whereas in terms of the levels of implementation there is a considerable difference between manufacturing and service companies.

### **Introduction of New Techniques as Replacements for Existing Ones (Replacement)**

Replacement refers to the introduction of new methods to substitute the existing components of a management accounting system. For instance, where investment appraisal technique based on the payback period is replaced by the net current value method. Numerous researchers have studied change as the progressive replacement of the existing management accounting system (see Innes & Mitchell, 1990; Miller, 1992; Shank, 1996; Burns et al., 1999; Anderson & Young, 2001; Ahmed & Leftesi, 2014; Alsharari et al., 2015). For example, the replacement of a conventional costs system with an ABC or of a fixed budget system with flexible budgeting. Furthermore, the implementation of a fully new set of performance measures such as the BSC could be viewed in this manner where they replace

traditional systems (Foster & Ward, 1994). In addition, this type of change is being researched, for instance, the switching from an incremental budgeting system to a planning, programming and budgeting System (Ezzamel, 1994). Moreover, the replacement of a traditional investment system and a net current value with a strategic cost management approach in assessing technology investment opportunities (Shank, 1996).

Other researchers mentioned this type of change, for example, Innes and Mitchell (1990) indicated that those traditional management accounting systems or techniques had shortcomings and inadequacies. Therefore, they can be replaced by those advanced management accounting techniques. Miller's study (1992) concluded that the traditional costing systems could not provide adequately and timely the information required in terms of meeting the needs of managers for their decision-making. Consequently, new management accounting systems must be designed and implemented (Miller, 1992).

### **Modification in the Management Accounting Information (Outputs Modification)**

This dimension relates to situations where there are no new management accounting techniques involved. Rather, this aspect deals with the amendment of information outputs of the existing management accounting systems. For example, the preparation of weekly reports as opposed to monthly variance reports, or the change of presentation of information from the numerical information to graphical format (see Anderson & Young, 2001; Granlund, 2001; Sulaiman & Mitchell, 2005). As noted by Cobb et al (1995), new characteristics in the presentation could comprise main performance indicators and ratios such as the return on risk weighted capital. Vaivio (1999) sheds some light on the need for this type of change as "*it has been claimed that financial measurements should be complemented with new non-financial indicators and companies are being advised to erect multinational measurements systems*". He also argued that an organization adopting a new strategy and concept such as total quality management could also need further measures. Therefore, these systems, in order to be new strategies in an organization, require additional financial and non-financial measurements through amending the existing performance reporting systems.

In the same vein, Amat et al (1994) proposed that a company requires ever more non - financial information for performance measurement and evaluation due to the adoption of new technologies and strategic changes. They also pointed out that most non - financial managers have a poor understanding of financial figures. Consequently, they need more non - financial information to support their decision - making (Amat et al., 1994). Moreover, the study of Burns et al (1999) supported the notion of change representing information output variation and concluded that significant management accounting change has taken place (Burns et al., 1999). Notwithstanding, this change is in the manner management accounting is used instead of change in the management accounting systems themselves.

Chanegrih (2008), however, has revised and extended Sulaiman and Mitchell's (2005) typology. Two extensions are introduced. First, his study refined Sulaiman and Mitchell's typology by separating output modification into two dimensions, *information representation changes* and *information frequency changes*. He finds it pertinent to separate changes in information frequency, which are required for rapid responses in the face of greater competition (Gordon & Miller, 1976), from changes in the representation of information, which are introduced to improve internal communication (Moores & Yuen, 2001). This extension enhances examination of the heterogeneous nature of change in management accounting. Second, Chanegrih's (2008) study examined the factors contributing to the success of the changes made. He especially wants to assess top management support (Innes & Mitchell, 1995), the level of complexity/simplification (Sulaiman & Mitchell, 2005), and the degree of resistance to change (Johnson & Kaplan, 1987). Consequently, Chanegrih has revised / refined Sulaiman and Mitchell's (2005) typology to comprise the following six categories of change in technical management accounting, namely: (1) addition, (2) replacement, (3) information frequency change, (4) information representation change, (5), operational modification and (6) reduction.

### **Modification of the Technical Nature of a Management Accounting System or Technique (Operational Modification)**

This dimension relates to the amendment of technical aspects of the existing management accounting systems or techniques of the organization. For instance, the modification of overhead absorption from labour hours to

a machine time basis in an organization's costing system or the use of pre-determined overhead rate as opposed to the actual overhead rate (Sulaiman & Mitchell, 2005). According to Innes and Mitchell's (1990) study, the traditional overhead rates were modified to the direct changing of overhead to components or products. Likewise, as noted by Kaplan (1986), overhead allocations were amended from an aggregate basis (Lump Cost Basis) of collection and allocation to a process of collection and allocation on a disaggregated basis. In addition, an amendment happened in the allocation of costs to activities by altering from a simplistic basis using direct labour hours to a more normalized complex measure of output utilizing a more advanced technology.

Amendment of the existing management accounting system is fundamental in a dynamic business environment. Companies may have to change their organizational structure as a means of boosting the effectiveness of their budgetary control (Burns & Waterhouse, 1975). In the same way, other researchers highlighted the modification of the technical nature of product costing system or practices. For example, an organization may need to improve or amend this system from marginal to total product costing system (Edwards & Newell, 1991; Granlund, 2001).

### **Removal of a Management Accounting System with No Replacement (Reduction)**

This type of change involves the removal of a particular management accounting system, for example, the elimination of conventional budgeting with no replacement for this budgetary. Wallander (1999) provides an example of a Swedish bank, Svenska Handelsbanken that abandoned budgeting techniques. The bank abandoned its traditional budgeting process in 1979. Another example is that in a study conducted in the USA by Turney and Anderson (1989), part of the existing cost accounting systems that were designed and considered to gather data no longer existed. These systems were removed and no replacement was made for these systems of the organization. Ali (2014) also conducted a research to investigate the change in management accounting in two Large Libyan Manufacturing companies. He found that one of the companies has introduced Quality Management System (QMS) based on (ISO 9001: 2000), but this system was abolished in by the top management of the company owing to the following reasons: (i)

This system has not offered any improvement in the efficiency of producers and workers within the company; (ii) The failure to achieve an increase in the sales of its products due to lack of improvement in terms of dealing with new customers as well as the erroneous application of quality management in the company; and (iii) The Management Committee consists mostly of engineers who do not have the administrative background; especially this system is a regulatory system within all the company's departments in the first place. Furthermore, the manager and employees who are working at the quality control office are engineers and they do not know how to deal with the QMS (ISO 9001: 2000) in the company.

Therefore, this has created a conflict among the employees in the company's administrations and offices, particularly within the financial administration and the internal auditing office, where the heads and employees are specialists in management and accounting. Sulaiman and Mitchell (2005) mentioned no occurrences of this type of change, nor did they think why this was so. The following Table 1 summarizes the above dimensions of management accounting change (types of change) and it also gives examples for each dimension.

**Table 1: A Typology of Management Accounting Change**

<b>Dimensions of MA Change</b>	<b>Examples for Change</b>
Addition	<ul style="list-style-type: none"><li>• The first use of a product costing system.</li><li>• The first implementation of the ABC, BSC, TC.</li></ul>
Replacement	<ul style="list-style-type: none"><li>• Advanced techniques (e.g., ABC, BSC) are replaced by investment appraisal techniques based on payback period is replaced by the next current value method.</li></ul>
Outputs Modification <ul style="list-style-type: none"><li>• Information frequency change.</li><li>• Information representation change.</li></ul>	<ul style="list-style-type: none"><li>• The preparation of weekly reports as opposed to monthly variance reports.</li><li>• Change of presentation of information from numerical information to graphical format.</li></ul>
Operational Modification	<ul style="list-style-type: none"><li>• Modification of overhead absorption from labour hours to a machine time basis in an organization's costing system.</li><li>• The use of pre-determined overhead rate as opposed to the actual overhead rate.</li></ul>
Removal / Reduction	<ul style="list-style-type: none"><li>• Elimination of conventional budgeting with no replacement for this budgetary.</li><li>• QMS.</li></ul>

## **FACTORS INFLUENCING MANAGEMENT ACCOUNTING CHANGE**

In the preceding section, it was noted that there are various types of management accounting change and this diversity indicates that change is not a homogeneous event. The following is a literature review of recent studies demonstrating various factors found by researchers which have led to changes in management accounting systems and techniques of various organizations, especially large ones. These factors are both of external and internal nature and have been important as drivers of change (Burns et al., 1999). It is argued that change in management accounting is understood better when studied within a context that takes into account the business environment inside and outside organizations (Sharma, 2000; Waweru et al., 2004).

Accordingly, the design of management accounting system is influenced by a variety of environmental and organizational factors such as market competition, advances in technology, organizational structure, size, etc (Libby & Waterhouse, 1996; Burns & Vaivio, 2001; Haldma & Laats, 2002; Waweru et al., 2004). In this respect, it is essential to discuss the relevant literature on the factors that might affect management accounting systems and practices. Therefore, these causal factors of change are divided into two major categories: the macro - context factors (external factors) and the micro - organizational aspects (internal factors). However, external forces may play a more dominant and certainly more frequent role, as drivers of change (Scapens et al., 2003). Many researchers also utilized these two categories in their research of management accounting systems and techniques (see Amat et al., 1994; Libby & Waterhouse, 1996; Burns et al., 1999; Haldma & Laats, 2002; Wu & Drury, 2007; Abdel-Kader & Luther, 2008). Besides these two main categories, there are other environmental factors such as social, political and economic contexts (Amat et al., 1994; Oakes & Miranti, 1996; Sharma, 2000) which react as the overarching factors to the two major categories. Hopwood and Miller (1994) proposed that accounting research should move beyond the boundaries of organizations and be concerned with the concept of social, economic and political consequences. The following section will explain in more detail below the nature of the external and internal categories and their sub – groups.

## **Environmental Factors**

Political, economic and social dimensions are classified as environmental factors (Sharma, 2000; Lasyoud, 2015). The influences of the significant changes in these operating environments exert tremendous pressures on management accounting and control systems to change in organizations (Granlund, 2001; Haldma & Laats, 2002). For example, economic crises have driven accounting change (Hopwood, 1987). In addition, the social and political crises have contributed to the significance of management accounting and standard costing (Oakes & Miranti, 1996). Furthermore, management accounting is characterized by continuity and change despite the enormous institutional changes in environment (Vamosi, 2000). Other researchers characterized it as stability and change (Siti - Nabiha & Scapens, 2005).

Numerous researchers have combined the three environmental factors above into one heading in their respective studies on management accounting system and standard costing because of the inter - relationship of these factors (Amat et al., 1994; Oakes & Miranti, 1996; Sharma, 2000). These factors create the major aspects of the organizational environment which may be unstable (Klammer & Walker, 1984). According to Oakes and Miranti (1996), the social and political crisis of the progressive period contributed to the prominence of scientific management and standard costing. The techniques of scientific management seem to appear due to the problems which they solved. Sharma (2000) also examines the impact of the social, political and economic environment on management accounting and control systems in a public sector firm in Fiji. The study reported that there is an association between management accounting and the business environment within and outside organizations. Additionally, both external forces and internal desire are needed to successfully improve the commitment to quality and performance measures. In another study, the social and political turbulence contributes to the development of new management accounting systems (Laitinen, 2003). In the same way, changes in management control strategies are related to the economic crises and this correlation is supported by the study undertaken by Armstrong (1985).

Furthermore, previous studies in management accounting have concluded that the success of management control system impinges upon

the wider historical, social, economic, political and cultural factors that are external to an organization (see Hopwood, 1987; Scapens & Roberts, 1993; Anderson & Lanen, 1999; Asharari & Youssef, 2017; Alsharari & Abougamos, 2017). This diversity of influences forms an accounting system in an organization (Scapens & Roberts, 1993). Other researchers argued that all reproduction of social practice is historical and contingent. The social, political and economic factors are seen as being able to provide bases for accounting change (Innes & Mitchell, 1990). In another study, for example, Anderson and Lanen (1999) investigated the relationship between economic and political disturbances in India (liberalization of the economy in 1991) and the change in management accounting practices in manufacturing companies. They concluded that the study findings are consistent with the contingency theory perspective and that the change in the external environment prompted a change in management accounting practices (*ibid*). Alsharari and Abougamos, (2017) also conducted a research to explain the emergence of accounting change in the Jordanian Ministry of Finance as well as the Jordanian public sector within its socio-economic contexts, as brought about by public and fiscal reforms. The study adopted institutional and structuration theory as a theoretical lens for interpreting the findings. They found that the new budgeting systems together with the Results-Based Management emerged as a result of interaction between “external” origins and “internal” accounts, which identifies that accounting is both shaped by, and shaping, wider socio-economic and political processes. The study confirmed that factors other than economic may also play an influential role in the emerging of accounting change. It also concluded that there is a radical change of accounting systems in the Ministry of Finance, which is not only a cosmetic change in accounting but is also represented in the actual working practices (*ibid*).

### **Macro - Context Factors (External Factors)**

The macro - context factors are external factors that exist outside organizations. According to Macy and Arunachalam (1995), the external environment is defined as the phenomena that are external and have either potential or actual influence on the organization. Fisher (1995) shows that the external business environments in which firms operate could be unchanging or dynamic, certain or uncertain, simple or complex, turbulent or stable. It is argued that the research on the external environment mainly represents

the level of uncertainty (Fisher, 1995; Macy & Arunachalam, 1995). Consequently, more sophisticated management accounting information is required when organizations operate in a more uncertain business environment (Mia & Clarke, 1999). Therefore, increasing competition, the consumer and the market situation are all relevant external factors driving management accounting change. The following sub - sections will explain in more detail below each of these factors.

## **Competition**

Competition has been considered as the main factor in the design and implementation of the new management accounting system (see Gordon & Miller, 1976; Amat et al., 1994; Fadaly, 2008). Hoque et al. (2001) suggested that greater emphasis on several measures for performance assessment is associated with companies facing high competition and making greater use of computer - aided manufacturing operations. Different kinds of competition (e.g. prices, marketing, etc) have different influences on management accounting control systems in manufacturing companies. It is argued that the level of sophistication of the accounting and control system is influenced by the intensity of competition (Otley, 1980) and managers may need further information to cope with the rapid increase of market competition (Chong et al., 2005). Johnson and Kaplan (1987) stated that traditional cost accounting systems are unlikely to provide valuable and helpful information for manufacturing operations. Accordingly, change was needed in proportion to the increase in competitive pressure (see Kaplan, 1986; Johnson & Kaplan, 1987).

Furthermore, market competition creates confusion, pressure, risk and uncertainty for organizations. Therefore, they should amend or improve their management accounting systems constantly to reflect the threats and opportunities in the competitive environment (Mia & Clarke, 1999). Moreover, the competition factor covers the globalization and the lowest technology aspect (see Cobb et al., 1995; Shields, 1997). Therefore, the changes in these aspects lead to alterations in the management accounting systems, especially the management accounting reports of an organization. Likewise, Miller (1992) argued that with the rapid increase in competition, today's cost accounting systems are insufficient to provide organizations with the financial information needed by management. Better management

information is needed due to increasing international competitive pressures (Burns & Scapens, 2000).

There have been some studies that investigated the relationship between environmental factors and management accounting systems (Khandwalla, 1972; Otley, 1978). For example, Otley (1978) examined the impact of difference on the environment shaped by unit managers. Khandwalla (1972) examined empirical relationships between different types of competition and a number of sophisticated management accounting control systems that are relevant to large manufacturing companies. Khandwalla (1972) and Otley (1978) concluded that the sophistication of management accounting systems has been influenced by environmental factors in general and the competition factors in particular. Other researchers, for example, Kaplan (1983) included other aspects when explaining competition. These aspects comprise quality and cost minimization and productivity which require the introduction of a new accounting control system into an organization. Kaplan (1983) also pointed out that competitive pressure covers quality, performance and price. Another example is that Khandwalla (1972) stated that competition comprises of: the technical personnel, selling and distribution quality, competition for raw material and a diversity of products and price.

In addition, there is empirical evidence indicating the desire for appropriate management accounting practices or systems in business organizations to meet increasing competition (see Hussain & Hoque, 2002; O'Connor et al., 2004; Hoque, 2005). For instance, Hussain and Hoque (2002) found out that competition is one of the factors which affect performance measurement systems. Similarly, O'Connor et al. (2004) concluded that the change in management accounting control systems occurred as a result of increased competition and institutional factors such as stock market listing and joint venture experience. In addition, Hoque (2005) concluded that competition is one of the important reasons why companies use specific practices such as non - financial performance measures.

## **Market**

The market circumstances are one of the main elements in which an organization operates. Market nature affects an organization's behavior and its economic success depends upon exploiting the market. Therefore, market

nature and conditions are themselves subjects for information provision (i.e.: strategic management accounting) and contribute also to uncertainty which produces information demand within organizations.

From the above standpoint, the market is defined by the dependence and relationship of a firm with the others (Bruns & Waterhouse, 1975). Nevertheless, market and competition - to some extent - are exchangeable. Therefore, many researchers have combined both external factors in their studies. For instance, Innes and Mitchell (1990) included the competitive and dynamic market environment that requires costing systems which involve: simplification of cost accounting systems and performance measurement. In the same way, Turney and Anderson (1989) included marketing excellence through improved quality, delivery, flexibility and designs as the competitive benefits in the market. This demands an organization's management accounting systems to be proactive in the search for the continuous improvement. Other aspects of the market include price calculation and cash management (Vamosi, 2000) and better management information (Burns & Scapens, 2000). Moreover, Burns et al. (1999) argued that management accounting processes have been slow to change notwithstanding the increase in the market and competition.

## **Consumers**

The consumer is also one of the basic environmental factors which can boost the organizational change of companies (Lasyoud, 2015). Consumers have several choices and they are exercising their right to choose who they buy from. They have become more demanding as a result of their new power to choose. Hence, devoting attention to customers' demands is a key issue that could lead to the introduction of non - financial performance measures which should positively reflect the relationships between customers and a company. For instance, Total Quality introduction requires non - financial measures to be part of the management report. Numerous non - financial measures are introduced with the intention of minimizing customer dissatisfaction (Vaivio, 1999). In the same vein, Foster et al.'s study (1996) demonstrates that there is an increasing acknowledgment that the Customer Account Profitability (CAP) represents an important future direction of management accounting. The main concentration of Customer Account Profitability (CAP) is to attract and maintain profitable customers. Given

the significance of customer bases, management accountants should follow the change of customers' performance from time to time.

The impact of the customer on internal accounting has been viewed in many ways. For instance, the introduction of numerous new products and innovative practices such as derivative products, financial future options, currency swaps market by banks to customers have created a massive pressure for change throughout the banking community. Numerous management accounting changes comprise new characteristics of reports with performance indicators, identifying cost drivers to avoid arbitrary allocation, Value – For - Money (VFM) exercise and ABC implementation (Cobb et al., 1995). In addition, given the importance of customers as an external factor, Anderson and Lanen (1999) mentioned that due to increased competition, firms have become more customers - oriented, whereby the customer ranks first in the planning and control process and performance evaluation. In addition, powerful customers are mentioned in Abdel - Kader and Lather's study (2008). They examined the impact of powerful customers and other external factors such as size, organizational strategy, a decentralized structure; etc on management accounting practices in large UK production companies and the contingency theory perspective that was used in their study. The following Table 2 shows the three sub - groups of macro - context factors (external factors) listed above and the related factors that fall under each respective heading.

**Table 2: Macro - Context Factors**

Macro - Context Factors (External Factors)		
Competition	Market	Consumers
Quality improvement	Market excellence (quality, delivery, flexibility and designs)	Product innovation
Cost minimization	Dynamic market environment	Customer demands
International competition	Market globalization	Dissatisfied customers
Lower cost technology	Market pressures	
Waste reduction		

## **Micro-organizational Factors (Internal Factors)**

The micro - organizational factors are internal factors that exist inside an organization. They may also be drivers of management accounting changes, for instance, changes in organizational structures and new management styles (Scapens et al., 2003). Amat et al. (1994) emphasize that the intra and extra organizational factors have been used to analyze the implementation and change of management accounting systems. The internal factors within companies include organizational structure, managerial policies, production technology, employees, and problems of existing techniques and deterioration of financial performance. The following sub - sections will discuss these factors in more detail.

### **Organizational Structure**

Numerous researchers highlighted the fact that organizational structure has an effect on the ability of an organization to successfully change its practices and to implement innovation systems (see Otley, 1980; Innes & Mitchell, 1990; Cobb et al., 1995; Gosselin, 1997; Scapens, 2000). According to Otley (1980), there is evidence to propose that the structure of an organization influences the system in which budgetary information is used. Otley (1980) concluded that the organizational structure and technology have a significant effect on the manner in which an accounting system works. He also mentioned that the accounting systems rely on particular circumstances which surround the organization. Otley (1980) mentioned that the contingency approach identifies one of the specific situations such as organizational structure and its contributions to management accounting change in numerous ways. According to Scapens (2000), there has been a considerable change in the organizational structure of large UK organizations, which had a significant impact on management accounting systems.

Cobb et al. (1995) argued that a change in organizational structure has an indirect effect on accounting practices because a change in organization structure is followed by a change in the priorities of an organization, which may in turn affect management accounting practices. Innes and Mitchell (1990) have chosen the organizational structure as one of the specific aspects in their studies for the process of change in management accounting systems.

They found out that the level of decentralization structure is a key factor in facilitating accounting change (Innes & Mitchell, 1990). According to Hoque (2005), the top management of a company can make some modifications in their organizational structure to become more effective and efficient in order to obtain a bigger market share and survival.

There are other several studies that focused on different dimensions of management accounting and their relation with organizational structure (see Bruns & Waterhouse, 1975; Libby & Waterhouse, 1996; Williams & Seaman, 2001; Haldma & Laats, 2002; Abdel-Kader & Luther, 2008). For instance, Bruns and Waterhouse (1975) explored the interaction and relationship of organizational structure and budgets. Their study concluded that the association between organization context, organizational structure and budget - related behavior are consistent with the notion that organization strategies may be divided into two categories, decentralized but structured and centralized.

As a result, change in organizational structure might be a vehicle of change in the organizational budgetary control system. Conversely, this result is inconsistent with the Libby and Waterhouse (1996) analysis which demonstrates no considerable relationship between the number of management accounting control systems (MACS) and decentralization in 24 large Canadian organizations. Haldma and Laats (2002) also examined the main impacts of internal organizational aspects on management accounting practices in Estonian manufacturing companies by using a contingency theory framework. They found some evidence that changes in cost and management accounting practices were associated with shifts in organizational aspects such as organizational structure. Similarly, Abdel - Kader and Luther (2008) concluded that the organizational structure is one of the most important factors which affect management accounting practices. Anderson (1995) argued that there is a need for an organization to adopt new management accounting systems to support companies' growth and amend the organizational structure.

## **Managerial Policies**

The above section has illustrated the change in management accounting as a result of organizational extension and change in the structure.

Nevertheless, this is incomplete without relating it to organizational activities. According to Edwards and Newell (1991), cost accounting systems have been designed and utilized since 1850 by organizations following policies of financial improvement on their diverse processes and activities. Companies need relevant information regarding planning, managing, controlling and directing the activities of the business in order to apply managerial policies to improve operations and products and change in strategies (Miller, 1992).

According to Ali (2014), the change in the organizational structure occurred in order to develop the administrations, departments and offices whose mission is to provide better data and resolve certain deficiencies in the management of the Libyan manufacturing company called Trucks and Buses Company (TBC). For instance, strategic planning is one of the systems that have been implemented as a result of the change in the managerial policy in the TBC. According to jobs description at the TBC, strategic planning department is responsible for overseeing the works of strategic planning at all administrations, departments and offices as well as in order to be uniform down to the company's overall strategy.

## **Production Technology**

Technology as a contingent factor can be related to production or information. Macy and Arunachalam (1995) defined 'production technology' as the process of transforming inputs to outputs. It is perhaps the simplest and longest established contingent variable utilized in management accounting and the distinction between different kinds of production techniques is a factor that has long been recognized as affecting the design of internal accounting systems. Fisher (1995) argues that technology as a contingent factor can be related to production or information. According to Scapens et al. (2003), the speed of technological change of production obviously had a significant impact on routine organizational life. Burns and Baldvinsdottir (2007) also assert that the increased speed of technological change has affected management accounting systems. Nanni et al. (1992) stated that

*"Manufacturers must have the response capability to take advantage of technological changes through process and product innovation. The environment in which management accounting*

*operates has changed significantly in the last twenty years and obviously this change has been in the technology and the complexity of manufacturing operation”.*

Otley (1980) pointed out that production technology has a significant effect on the kind of accounting information system. For example, the nature of the production process determines the amount of cost allocation instead of cost apportionment. Put succinctly, complex technology needs simple and informal control mechanisms and uniform technology requires complex mechanisms (Wichramasingle & Alawattage, 2007; Lasyoud, 2015).

The adoption of new and advanced technological manufacturing techniques which transform production from normal into mechanized can have effects on management accounting. For example, the products produced in a high technological organization are fundamentally more complex and have a short life cycle (Brimson, 1986). Conventionally, the product life cycle comprise four stages: start - up; growth; maturity; and decline that spend most of their lives in the last two stages. A shorter product life - cycle and the desire to remain competitive require high technological organizations to invest in new manufacturing technologies such as: advanced manufacturing technology; flexible manufacturing systems; computer integrated manufacturing; and so on. Therefore, new capital investment analysis is needed. Shank (1996) proposes that the traditional systems of capital investment analysis should be replaced by strategic cost management as this approach takes into account fundamental strategic matters.

Furthermore, Isa and Thye (2006) argue that management accounting techniques such as activity - based costing (ABC), value added accounting and target costing (TC) are influenced by technological factors such as complexity of production process, overhead expenses and product variety. However, other researchers argued that technological factors such as the level of overhead, product complexity and diversity and relative advantage are not related to management accounting practices such as ABC (Brown et al., 2004). In addition, the study by Innes and Mitchell (1990) indicated that production technology influences management accounting in the following three areas. First, the increased automation of the production process will lead to the development of machinery and equipment performance measures through the identification of ‘cost drivers’. Secondly, the short

production cycle and growth will commence delayed costing and replacing overhead rates with direct charging. Finally, the development of quality cost information will be influenced by the importance of maintaining quality standards.

## **Employees**

Employees are another key factor that can contribute to management accounting change. Granlund (2001) proposed that the human factor should be carefully deemed in the development projects of accounting systems. People change accounting and, in this sense, employees cause all management accounting changes (Granlund, 2001). Nonetheless, they may also be an inciting force in change and not merely a vehicle by which it occurs. According to Klamer and Walker (1984), the majority of employees have been exposed to new techniques through their previous education, attending presentations, seminars and reading published articles. Thus, these contacts provide sources to new thoughts to apply in their current organization. In addition, change may occur from employing new experienced accounting staff (Armstrong, 1985) or exposing them to the international manufacturing operations and information systems (Edwards & Newell, 1991).

Furthermore, there may be a need for the company to change part of its management accounting system to fit the internal power struggle between the capital providers and the employees. Usually, this would include the company's reward system (see Amat et al., 1994; Ezzamel, 1994) which, in turn, is largely reliant on performance measurement information. Moreover, the impact of employees on management accounting practices has been investigated in the previous studies. For example, Al - Nimer (2010) carried out research which aimed to provide a view of the current role of management accounting practices in the Jordanian financial sector. The study revealed that the number of employees and other contingency factors had a significant impact upon the sophistication level of management accounting practices.

## **Problems of Existing Techniques**

The insufficiency of existing management accounting systems is closely related to the introduction of new systems. The present techniques may not be sufficient or satisfactory for this current organization's processes (Armstrong, 1985). There might be inadequacy in the traditional systems as the role of the traditional industries declines (Lapsley & Mitchell, 1994) and shortcomings are also probably due to the lack of reliability of conventional costing (Askarany & Smith, 2000). For example, products are changing quickly with shorter product life cycles in a high technology environment.

High technology production has changed cost structure with more emphasis on indirect instead of direct cost. This has resulted in organizations adopting more suitable systems for controlling overheads. The motivation for activity - based costing (ABC) derives from a need to modify inequities in conventional volume - based allocation systems for these indirect manufacturing costs. The design of activity - based costing (ABC) is that diverse production support activities that are similar should be categorized together. Then the cost of these activities is gathered to shape an activity cost pool and a single activity driver is utilized for each of them in costing products (see Anderson, 1995; Cobb et al., 1995).

In addition, organizations are faced with frequent capital investment decisions, due to shorter product life cycles in high technology environments. Nevertheless, conventional capital investment appraisal techniques are not without shortcomings. Shank (1996) argued that the traditional systems of capital investment analysis do not comprise the full influence of the technology change decision. For instance, the net present value places such a premium on short - term financial outcomes and little attention on the difficulty to quantify issues such as quality enhancement or manufacturing flexibility. The study suggested that high technology organizations adopt strategic cost management. In addition, this approach evaluates strategic issues in capital investment appraisal.

## **Deterioration of Financial Performance**

A poor financial performance itself generates pressures for action to be taken which will improve performance measures. Therefore, as a

reaction to the deterioration of financial performance in an organization, there is a need to adopt new management accounting systems as a result of a dip in performance. Changes in the management accounting system may provide the solution to an increased demand for information. Thus, better performance and useful information will be provided for an organization through adopting new techniques. Innes and Mitchell (1990) found out that deterioration in financial performance is a catalyst which stimulated new developments in the unstable world of high technology organizations. Their result was affirmed by Haldema and Laats (2002) who observed in a more general study that: “....dissatisfaction with the performance measurement system, which was unable to provide appropriate information for decision - making served as a significant catalyst in improving the cost accounting and MAS”. The following table (3) shows the six sub - groups of micro - organizational factors (Internal Factors) listed above and the related factors that fall under each respective heading.

**Table 3: Micro - Organizational Aspects**

Micro - Organizational Aspects (Internal Factors)					
Organizational Structure	Managerial Policies	Production Technology	Employees	Problems of Existing Techniques	Deterioration of Financial Performance
Level of decentralization	Corporate expansion	Technological innovation	Widespread of knowledge	Insufficient the existing systems	New assessment and adopted
	Change in strategies	High-technology process	Reduction of skilled to simple labour	Declining role of traditional industries	Need to justify actions
	Restructuring of organization	Shorter product life-cycle	Internal power struggle	Lack of efficiency	Information quality performance evaluation
	Constant improvement	Change in production process		Capability of the traditional cost	
		Quality improvement			

## **CONCLUSIONS**

This paper has discussed the concept and dimensions of change in management accounting. In addition, this paper has principally presented previous studies that have attempted to investigate management accounting change and many factors, both external and internal. These factors may influence management accounting practices or systems in organizations. The paper concludes that most of previous studies that have concentrated on management accounting change within large organizations. However, most of them studied it as an outcome. Researchers have been given a little attention to the nature of in other words the different types of change in management accounting and the processes that have taken place to affect it. The paper also concludes that there is no generally agreed upon definition of change in management accounting. Since change in management accounting is not a uniform phenomenon and happens in a dynamic world, thus, many factors, both external and internal, is expected to cause changes in organizations. Little attention has been given by most researchers to the exact specification of the full range of causal factors. Consequently, many different terms have been utilized for similar causal factors that cause change in management accounting and the previous studies have focused on a limited number of causal factors. In addition, little consideration has been given to the interrelations between causal factors.

Several recommendations for future research have been provided by this study. Firstly, future research could adopt survey approaches whereby a wider sample of organizations can be studied. By using different methods for collecting data, future research can also study change in management accounting in other public sectors (such as service, financial, oil and so on). Secondly, future research can be conducted in developing countries (a single country or comparing two or more countries) to provide further insight on the influence of country - specific factors (country's characteristics) on management accounting and control practices. Finally, future research could focus on alternative theoretical perspectives for the investigation of the process of change in management accounting such as critical theory and actor - network theory. The paper also gives implications for future management accounting research combining institutional and critical theories. The paper contributes to the extant literature by presenting the dimensions of management accounting change. It also discusses intra and

extra organizational factors, which might form management accounting practices within organizations, since the paper concludes that most prior studies are on large companies. Therefore, this paper will be useful for scholars in this area through giving in-depth understanding of management accounting practices within organizations, especially Small and Medium-sized Enterprises (SME's).

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