

The Effect of Improving External Environmental Factors in the Application of Modern Methods of Management Accounting: An Exploratory Study from the Perspective of the Department Managers of Iraqi Economy

Buthaina Rashed Hummidi

Department of Accounting, College of Administration and Economics,
Mustansiriyah University, Baghdad, Iraq

Abstract: The main aim of this study is to determine the most important factors of the external environment that influence the implementation of modern methods of management accounting for the purpose of improvement. A descriptive analytical method was employed in order to achieve the objective through administration of questionnaire to gather the opinion of the selected population. The findings revealed that the support of the state and the provision of loans into the economy contribute to the re-engineering of its operations by purchasing an advanced technology equipment and market research such as: competitive price study, customer requirements, selection of reliable suppliers, data from other economic units. These parameters pave way for the implementation of all or some modern methods of management accounting in the Iraqi economy and thus, led to development of the efficiency and productivity improvement of the industry in Iraq.

Key words: External environment factors, management accounting, technological factors, social, demographic and cultural factors, development

INTRODUCTION

In the present world market, business environment encounters many changes and developments such as administrative development, development of information technology and lots more. In the last century towards the last year, there was a witness of economic changes, increasing competition and opening up markets to global competition from local competition. The administration is placed in a challenging position by this change for many factors that require changing of policies. The change also led into the need for management accounting system to make provision for accounting information that meets the needs of management and support the management to control and prepare appropriate plans, so that, there is a connection between the management and the environment.

Many previous studies have shown that the success of modern methods implementation such as continuous improvement and the cost of the basis of activities in management accounting majorly in the United Kingdom, the United States and Japan have received considerable attention by business organizations. After all, the main orientation of these organizations is to identify the suitable modern management methods and the extent at

which the methods are required by the practical reality of making changes to the system and its culture in order to become more appropriate to the requirements of their implementations.

Data that helps management in planning, monitoring, evaluating performance and making informed decisions based on accurate information are provided by the modern methods of management accounting with high transparency. Many external environmental factors, however, influence the application of these methods. Also, many studies have revealed a gap between the scientific development of the methods of accounting management and the reality of application due to competition in the local and international level. In light of this issue, the problem statement of this study can be formulated as: What are the most external environmental factors affecting management accounting and how are the modern methods of management accounting applied? The study aims mainly to:

- Present the most important factors of the external environment surrounding the Iraqi economy
- Study the impact of these factors in the implementation of modern methods of management accounting in Iraqi economy

- Arrange the factors of the external environment in accordance with their strength and influence in the application of modern methods of management accounting

The importance of this study is derived from the importance of applying modern methods of management accounting in the economy for the purpose of maintaining its competitive position and facing rapid environmental changes. The study provide a blue print for the purpose of knowing the most important environmental factors required by the use of some modern methods of management accounting and then create the factors in the Iraqi environment. Thus, this results to a successful implementation of those methods in the Iraqi economy.

In order to give appropriate answer to the research question, the study hypothesized that: the factors of the external environment affect the application of modern methods of management accounting.

Literature review: According to the Master thesis of Moussawi and Nawar (2002) titled “The impact of some conditional factors in the use of management accounting methods” which aimed at identifying the conditional factors that affect the application of these methods, 9 factors were evaluated leading to the following conclusions:

- In terms of quantity and type, there are no determinants of quantitative factors and there are some managers who prefer not to be identified and they are left to the organization
- Most of the accountants working in Iraqi industrial organizations are holders of the technical diploma in accounting or even less in many cases and some of them are not competent in accounting which negatively affects the possibility of applying the methods of accounting management

Also, Taha (2010) stated in a Master thesis titled, “Determinants of the application of management accounting methods and their relationship to financial performance: a case study of Egyptian industrial sector” with the aim to determine the conditional factors affecting the application of management accounting methods concluded that: technological and environmental factor influence the choice of such methods. Conditional factors such as company size, type of industry and technology affect the application of management accounting methods. In the case of ownership among the

selected organizations, the results showed no significant differences in the application of management accounting methods.

Adler *et al.* (2000) studied the advanced management accounting techniques in manufacturing utilization, benefits and implementation. The aim of the study is to evaluate the extent to which the organizations in New Zealand applied the methods of management accounting. The study found that there are a number of challenges facing the application of modern methods of management accounting such as: lack of time, lack of efficiency to apply these methods, lack of skills for implementation and limited human resources.

Furthermore, Abdel-Kader and Luther (2008) examined the impact of firm characteristics on management accounting practices. The main objective of the study is to investigate the effect of the conditional factors in the application of the methods of management accounting in Britain. The study concluded that:

- The application of modern methods of accounting management is affected by the size of an organization, i.e., more sophisticated methods are needed when the size of the organization is larger
- There is a positive relationship between the applied modern technology in manufacturing and the implementation of modern methods of management accounting

Therefore, this study focuses on a set of modern methods of management accounting and factors of the external environment as they affect the industrial business environment and also the inability to analyze all internal and external factors at the other hand.

The concept of the external environment: There are challenges and complexity surrounding the idea of external environment of an economic. An organization must develop the skills required to recognize the threats and opportunities in an environment including all the external elements with potential impact on the entire or partial part of the economy (Hussein *et al.*, 2012). According to Al-Ardhi (2001), external environment is defined as all economic factors and elements that affect the environment or other factors that are outside the scope of the study that interact with work and lead to its support or hindrance.

External environment factors

Economic factors: Economic factors are an important environmental factor affecting economic units. Those

economic factors can be: inflation rates, economic growth, interest rate, fiscal and monetary policies of the state on income taxes, customs, commercial and industrial profits. These factors either support or negatively affect the rate at which the economic objectives and the success of the strategy are achieved. Any alteration in those factors can lead to opportunity for some economic unit posing a threat to another unit (Al-Dury, 2005).

Political and legal factors: Garry *et al.* (1991) mentioned that political factors play important roles on the economy and how the works are being executed through opportunities offer and challenges together when the government issues laws affecting the work of these units. One of the political and legal factors is the development and investment plans. This is a decisive factor that influences the political and legal factors on the field of business which also depends on the availability of political, legal and legislative stability in the state and society. This makes investment under the high risk to lead to bankruptcy and failure (Al-Aref, 2002).

In addition, Hunger and Wheelen (1998) stated that the political factors are defined as the group of forces that prepare restrictions and maintain laws and legislation and determine authority. The most important political factors are: the laws of environmental protection, international standards of accounting, control and government stability, Foreign investments, electronic commerce legislation, tax laws and labor laws.

In other word, Jackson *et al.* (1988) opined that legal factors include constitutional aspects, laws and regulations that are related to the establishment of units and the imposition and control of taxes. The progress of the economic unit is affected by the legal legislation, this may impede or limit the activity of the work or in some cases help the unit by enhancing the growth of the private sector and the allocation of some specific services as provide by the states.

Technological factors: In order to maintain a competitive position, the rise in technology change has led to the need for economic unity to remain at the desired level in terms of access to new technology (Al-Qatami, 1996). Therefore, the senior departments of economic units are under obligation to follow changes and technological developments in the external environment in relation to the research of the unit (such as the entry of new competitors in the markets, new preferences for customers, the entry of new competitors in the markets and the emergence of new technology) and invites the senior management to provide new products to confirm the competitive advantage of economic unity in the market. Associated costs associated with the senior departments of the economic units may expose them to risk due to new competing products or rather continue

with the existing products which may expose them to failure and exit from the market (Al-Dury, 2005).

Social, cultural and demographic factors: These factors have great influence on all the products, customers, services and markets. Large and small economic units whether profitable or non-profitable face threats and opportunities that occur due to these changes (Hussein *et al.* 2012). According to Yassin (2002), social and cultural factors can be divided into three main groups.

Social factors: This represents the commonest social values that affect the city and the country-side, social norms and the traditions. This includes the data resulting from the analysis of the social environment either fixed or with changing elements.

Cultural factors: Cultural factors comprise historical and cultural values, education or accumulated experiences which affect: the behavior of an individual and society, lifestyle, quality of life, readiness or unwillingness to change, the level of scientific and cultural development and the nature of society.

Demographic factors: Factors like population structure such as: regional population distribution, death rates, occupations, gender, age, birth rate and population growth rate. These factors affect the economic opportunities and are threats to economic unity. Increase in population, for example, leads to increased demand for the products or services provided by the unit. Conversely, a reduction in population size leads to a decline in demand for these products and services (Al-Dury, 2005).

Modern methods of management accounting: The following are the modern methods of management accounting.

Target cost method: This method is a price-based approach in accordance to market factors in determining the target cost of the product used as planning tools. The early reduction of the cost allowed the design and production of new product or an innovation of current products whose functions and properties correspond to the needs and wishes of the customer. Marketing a product within the maximum target costs can achieve a desired profit (Samurai *et al.*, 2012).

Value engineering method: This method is defined by Homgren *et al.* (2002, 2008) as a cost-cutting method that is primarily used during the design stage and benefits from all information related to value chain activity to achieve customer satisfaction through cost reduction.

Continuous improvement method: According to Chase *et al.* (2004), this method is the continuous search for improvements in materials, methods of production, machinery, work and methods by entertaining suggestion and idea by teams of the organization or factory.

Hexagonal diffraction method: This method is known as the process that does not result in more than 3.4 defects per million chances as this rate of defects is very low. Similarly, the term “hexagonal diffraction” is sometimes associated with the term “lack of defects” (Garrison *et al.*, 2010).

Cost-based approach: This method is used for connecting and loading indirect industrial costs of finished products by identifying the causal relationship between activities and resources. Notably, activities consume resources that are allocated to activities with combination of cost pools. By using cost guides as the basis for loading costs of activities are allocated to products.

Balanced scorecard method: This method is defined as integrated set of performance measures for the strategy and support of the organization. The organizational strategy reflects the conceptual framework on how to achieve the objectives and policies of the organization. In this manner, the senior management can translate its strategy into financial and non-financial performance measures where the employees can understand and get influenced (Garrison and Noreen, 2000).

Reference comparison method: According to Samuray *et al.* (2012) reference comparison method is an administrative method where the organization makes effort to find the best methods in the practices that enhance a quick accomplishment of the product or process with the best performance targeted by organization in the same industry or within an organization itself. This method is employed in order to improve customer satisfaction and enhance the competitive advantage of the organization.

Process re-engineering: Process reengineering has been defined as the fundamental insight and radical redesign of management processes to achieve fundamental improvements in critical performance standards such as cost, speed, quality and service (Hammer and Champy, 1993).

MATERIALS AND METHODS

Data collection procedure: The theoretical part of this study relied on the scientific sources such as books, journals and the internet in order to obtain the necessary data to test the hypothesis of research and support its

objectives. From the practical side, 30 questionnaires are distributed to department managers in the general companies of dairy products, battery industry and soft drinks.

Research technique: Survey questionnaire was adopted to obtain the data in order to achieve the objectives of this study and test of hypothesis. The first part of the general information includes the demographic survey of the members. The second part of the questionnaire contains the statement and opinions (survey) on the most important external factors that affect the application of modern methods of management accounting in the business organization. About members are reported to agree. The questionnaire is divided into four questions. The answers are designed for each paragraph according to the Likert scale (fully agreed, agreed, neutral, disagree and not fully agreed) depending on the following division to determine the degree of approval: minimum = $5-1 = 4$ and since, there are three grades for approval, the number $4/3 = 1.333$ will be divided and accordingly the approval, the grades will be distributed as follows:

- $3.66 + 1.333 = 5.00$ from any of 3.66-5 for high score
- $1 + 1.333 = 2.333$, i.e., from 1 to <2.33 for low grade
- $2.333 + 1.333 = 3.66$ from 2.33 to <3.66 for average grade
- $3.66 + 1.333 = 5.00$ from any of 3.66-5 for high score

Population of the study: The sample of the population of this study consists of three business organizations namely: dairy products companies, battery industry companies and soft drinks companies. They are all from Iraqi business organization. All the 30 questionnaires sent out for survey were fully recovered which meet the requirements of this study.

Analysis technique: In order to analyse the data from the questionnaire and test the hypothesis, percentages, arithmetic mean and standard deviation are used as statistical methods.

RESULTS AND DISCUSSION

Analysis of the questionnaire: In this study, the trends of the study sample on the effect of the external environment factors selected in the application of modern methods of management accounting was measured by the second part of the questionnaire consisted of 24 questions. Each factor was analysed independently.

Economic factors (market study): Table 1 shows the measurements of the trend of the companies selected on the effect of economic factors in the implementation of modern methods of management accounting. The

Table 1: The arithmetical averages and the standard deviations of the selected companies on the economic factors

Items	Questions	Mean	STD	Relative weight (%)	Ranks
1	The financial and economic stability of the state leads to a high quality of products and services provided by the organization	1.47	0.507	0.294	6
2	The organization examines the prices prevailing in the market to determine the selling price of the product before starting the production process	1.80	0.610	0.360	5
3	The organization has an information system that provides detailed information on market size, growth rates and customer needs and purchasing power	2.13	0.860	0.426	2
4	The organization analyzes the strengths and weaknesses of other competing organizations	2.27	0.828	0.454	1
5	There is no real chance for the leaders of Iraqi companies to learn about all modern methods of management accounting applied in developed countries	2.10	1.062	0.420	3
6	The application of all or some of the methods of modern management accounting in the Iraqi companies contributes to the development of the reality of the Iraqi industry and competes with international products.	1.80	0.887	0.360	5
7	The organization takes advantage of the transfer of experience and knowledge from other companies	1.97	0.669	0.394	4
	Total	1.93	0.770	0.386	

Table 2: The arithmetical averages and the standard deviations of the selected companies on the elements of the technology factor

Items	Questions	Mean	STD	Relative weight (%)	Ranks
1	The department of the organization seeks to develop the technological and technical capabilities of employees to absorb information technology	2.170	0.648	0.434	3
2	The organization possesses advanced technology (machinery and equipment) for continuous improvement	2.670	0.884	0.534	1
3	The adoption of modern manufacturing technology by the organization reduces the time of its production cycle	1.770	0.679	0.354	4
4	The emergence of computer-based manufacturing methods makes it possible to produce large, fast and highly efficient and thus reduce the cost of one unit	1.730	0.583	0.346	5
5	The organization has an efficient computerized accounting system to obtain accurate and detailed information for the purpose of determining the relationship between cost and its causes	2.270	0.691	0.454	2
	Total	2.122	0.697	0.420	

questions that measure these factors are recorded low. Table 1 shows that from the fourth question which provides the decomposition of the business organization, the strengths and weaknesses of the competing organizations came first. The second question on prevailing in the market to determine the selling price of the product before starting the process productivity is ranked last. This result indicates that analysis of the strengths and weaknesses of the organizations in competition and with their gentlemen prices in the market that contribute to the development of products in the Iraqi companies and thus, compete with global products.

Technology factors and the ownership of the company:

The measurement of the trends of the selected companies on the effect of technology factors in the application of modern methods of management accounting is shown in Table 2. The standard deviations range from 0.534-0.346% while arithmetic averages ranged between 2.67 and 1.73%. The questions that measure these factors are medium. While question 4 which is computer-based manufacturing to production capability in large size, quickly and efficiently with the possibility of reducing the cost of one unit is ranked last, question 2 which states that “the organization possesses advanced technology

(machinery and equipment) for the purpose of continuing improvement processes” was ranked first. This can be explained by the possession of machinery and advanced equipment by the organization to contribute to the achievement of speed and efficiency in production, minimizing the cost of one unit of the product and high quality by terminating all activities that do not add value to the product and therefore, retain its share and market position.

Political and legal factors on the selected companies:

Table 3 presents the measurement of the items under the selected companies on the effect of political and legal factors in the application of modern methods of management accounting. The value of standard deviations ranges between 0.995-0.817% while the statistical averages ranged between 2.90 and 1.57%. This shows that the state subsidizes for the business organizations by providing loans and benefits while encouraging them to re-engineer their operations and improve productivity. In addition to the questions, question 4 inquiries on weak political and security stability in the migration of competence. This is an indication of the fact that there is weak political and security stability and weak support from the state to the

Table 3: The arithmetical averages and the standard deviations from the views of the respondents on the political and legal factors

Items	Questions	Mean	STD	Relative weight (%)	Ranks
1	Laws and legislations issued by the state shall affect the development of products or services of the business organization	2.100	1.029	0.420	3
2	The political stability of the state leads to the high quality of the products or services provided by the business organization	1.600	0.770	0.320	4
3	The business organization is committed to implementing environmental laws to preserve its internal and external environment	2.300	0.915	0.460	2
4	The weakness of political and security stability contributed to the emigration of scientific competencies which led to the lack of adequate human resources to carry out productive operations	1.570	0.817	0.314	5
5	The state supports the business organization by providing loans and acceptable benefits, encouraging them to re-engineer their operations and improve productivity	2.900	0.995	0.580	1
Total		2.094	0.905	0.418	

Table 4: The arithmetical averages and the standard deviations of the views of the selected companies on the social, cultural and demographic factors

Items	Questions	Mean	STD	Relative weight (%)	Ranks
1	The organization is considering changes in customer requirements for continuous improvement of its products or services	2.270	0.740	0.454	3
2	The increase in population is an opportunity for some organizations to increase demand for their products	2.030	0.809	0.406	5
3	The organizations take the suggestions that customers make and try to meet	2.400	0.855	0.480	2
4	The organization seeks to retain its customers and acquire new customers through continuous improvements in its products	2.100	0.712	0.420	4
5	The organization deals with reliable and competent suppliers to supply them with the required materials and quality	2.470	1.008	0.494	1
6	The organization examines the materials received from the suppliers and ensures their safety before entering the warehouses	1.700	0.702	0.340	7
7	The organization shall impose penalty clauses on the supplier in case the materials are not delivered with the required quality	1.930	0.828	0.386	6
Total		2.128	0.800	0.425	

organizations in providing loans that contributed to the migration of scientific competencies from human resources. Therefore, this made it difficult to re-engineer the processes and weakness in the productivity improvement.

Social, demographic and cultural factors (study of customer requirements and relationship with the suppliers): Table 4 presents the measurements of the variables related to the selected organizations on the effect of social, demographic and cultural factors in the implementation of modern methods of management accounting. For question 5, the standard deviations range between 0.702-1.008% while the statistical averages ranged between 2.47-1.70%. This shows that the organization deals with reliable and qualified suppliers to process the required quality and materials in the first place. In other word, question 6 indicates the examination of the materials received by the suppliers from the business organization. It can be explained that the proper selection of reliable and efficient suppliers by the organization contributes to the formation of good and long-term relations with them. Therefore, this company guarantees the quality and safety of the production of the materials received.

Result analysis: According to the previous studies, among the most important factors affecting the implementation of modern methods of management

accounting are technological factors and the ownership of the organization and the social, cultural and demographic factors with 42%. The most important factors of the organization is the possession of machines, sophisticated equipment and computerized accounting system that are efficient for obtaining accurate and detailed information for the purpose of determining the relationship between cost and its causes. In addition, developing the technological and technical capabilities of employees to absorb information technology contributes to achieving the efficiency of production and the efficiency of the production process.

This at the long run reduces the time required for production through the cancellation of activities that do not add value to the product and therefore, retain the market share and position. Also, to meet the requirements of customers and on-going improvements on products or services that contributes to retain customers both current and prospective. The formations of good and long-term relationships are achieved through the selection of reliable and efficient suppliers by the business organizations. Similarly, the imposition of penal conditions on the supplier in case of non-delivery of materials with the quality required to ensure the quality and safety of the production materials received with the rate of 41.8 and 38.6%.

According to the study, the provision of loans to the organization and the state subsidy contribute to the return (such as: the study of competitive prices; Customer

requirements, transfer of expertise from other organization and selection of reliable suppliers). It also contributes to the implementations of the modern methods of accounting management in the Iraqi business organizations. All these factors contribute to the development of the industry in Iraq and to the improvement of productivity. It is clear from these results that the hypothesis of the study: "The improvement of productivity affects the external environment factors in the application of modern methods of management accounting" is accepted.

CONCLUSION

Modern management methods in the form of: target cost, value engineering, continuous improvement, hexadecimal, cost based on activities, balanced scorecard, benchmarking, process reengineering and other methods must be applied in order to develop the reality in the organization. A support from the state is required by providing loans, so that, these companies can operate advanced technology such as: computerized accounting system, equipment and machinery. The factors contributing to the success of the organization are social, cultural and demographic factors, the success of any organization can be achieved through satisfaction of customers with the quality of products or services provided. Organizations need to transfer knowledge and experience by identifying strategies applied by other successful business organization. Organizations need to deal with suppliers who are highly reliable to ensure the quality of the materials being processed.

RECOMMENDATIONS

In order to contribute to the re-engineering of operations and introduction of advanced technology in production, there should be a state support for organization with financial resources through the provision of loans and the process of continuous improvement to promote the local product. Examination of the customer requirements by conducting a survey of products offered by the companies to identify weakness and make comparison between them and existing products produced by other organizations to make improvements to their own product or service. Knowledge and experience transfer from successful organizations and application of the successful strategies used by the companies. In order to ensure that the quality of production elements received are met on time reliable

suppliers should be dealt with those that build good relationship and a penalty should be imposed on anyone who violates the rules.

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