



# The impact of integration of quality costs and targeted cost in achieving a competitive advantage: a perspective from hospitality

Alaa Mohammed Obaid  
Department of Accounting, College of Administration and Economics  
AL-Mustansiriyah University, Baghdad, Iraq

Jenan Abd AL-Abbas Al Dulamy  
Department of Accounting, Babylon Technical Institute  
AL-Furat, AL-Awsat Technical University, Kufa, Iraq

Khadija Jomaa Muter  
Department of Accounting, College of Administration and Economic  
AL-Mustansiriyah University, Baghdad, Iraq  
E-mail: [hassnir@yahoo.com](mailto:hassnir@yahoo.com)

Corresponding author\*

## Abstract

The world is witnessing continuous changes in the market environment and high level of competition that are arising from many causes. Perhaps the most prominent cause is the flooding of local markets with imported products with low prices when compared to local products. In addition to the strategic constraints that are represented with the rising costs of local products, the increasing decline in the quality of these products and the high levels of non-conforming products along with many variables of direct and indirect impact, such as political and economic factors that have had a negative impact in supporting the local product. Based on what will be presented, the research focused on the diagnosis of these causes as well as working on the use of some strategic management accounting techniques in order to keep pace with global developments and pave the way to upgrade the local products and then work on opening towards global markets through the presentation of the main knowledgeable bases of quality costs and all their classifications. Moreover, the research will explain what the targeted cost technique is and its impact on creating and enhancing the competitive advantages of upgrading the local products in Iraqi hotels and hospitality sector businesses that are provided by the company in question.

**Keywords:** Target cost, competitive advantage, prevention costs, Iraqi hotels.

## Introduction

The continuous changes in the competitive environment resulted from the growing innovations that have happened because of the revolution in communication techniques and information technology of the 4IR. These have contributed to the diagnosis of visions and ideologies in the contemporary global industrialization environment, which are represented in the development of techniques that help to treat deficiencies and to enhance the possibilities of upgrading traditional systems, with the continuous changes in customer tastes, taking into considerations the ongoing focus on reducing costs and improving profitability and productivity. The study discusses some techniques of strategic management accounting, which may have a clear impact in diagnosing problems and obstacles and drawing solutions that enhance the potential of economic units, to address most of these challenges and obstacles and to keep pace with innovations in the environment of competition.

The study deals with the knowledge bases of quality costs and all its classifications (prevention costs, evaluation, internal and external failures), as well as addressing the knowledgeable adoptions of the targeted cost technique in order to show the integration impact between them on enhancing and supporting the competitive advantages of the General Company for



Electrical and Electronic Industries to keep pace with the challenges due to imported products and high level of costs. Due to the continuous changes in the competitive environment, there is an urgent need to employ modern strategic cost management techniques to help managements to stay into the competitive market through providing high quality products that meet customer's requirements. This is while taking into account the cost management of these products and achieving targeted costs that provide information on product costs and then exclude non-value added costs and thus enhance the competitive advantages of economic unity.

## Literature review

### **Quality Concept**

The historical origins of the term Quality are attributed to the Latin term (Qualia's). It refers to "the nature of the person, the nature of the object and the degree of rigidity". In the past, the word expresses the accuracy and perfection of the method of making historical and religious ruins and temples like statues, castles and palaces for the purpose of boasting them or using them for protection purposes (Nudurupati, Arshad & Turner, 2007). Service quality unlike quality, is an intangible aspect which does not exist beyond an individual customer's perception. It may however be commonly defined as service which balances the needs and expectations of customers, employees and owners It must correspond to the customers' expectations and satisfy their needs and wants consistently (Nicolaidis, 2008).

Quality has been defined by the American Society for Quality (ASQ) as a series of specifications and characteristics of the product or service or what will be produced and presented in line with the specifications that meet the requirements and wishes of customers, either at the time of purchase or with use (Flayyih, Mohammed & Talab, 2019; Horngren, 2009). Juran defined it as "fitness to use", because his concept refers to the customer's approach, as he looks at quality through the appropriateness of use, based on an understanding and absorbing of the customer's needs ( Browne, Harhen & Shivnan, 1988).

Based on the foregoing, we believe that quality can be described as a tool or weapon that enhances the competitive capabilities and abilities of economic units in the competitive environment. In other words, the tool that ensures and guarantees growth and the continuation of competition through the continuity of customer's satisfaction.

### **Quality Stages**

The quality activity has passed through successive historical stages. Zander pointed to the periods that reflect the historical development of the concept of quality through several stages (Zander, 1988).

1. *Quality inspection stage*: The inspection shall be subject to the activities that are designed to ensure the detection or identification of cases of mismatch already present in the finished products or services. This can mean that the quality inspection process in fact is to strengthen the assurance that the product or service to match the specific specifications to the customers, so the inspection can prevent the possibility of access to products that do not conform to any of the expectations of customers. The inspection does not enhance the assertions of preventing a mistake, but its function is to detect the error.

2. *Quality control stage*: This stage was to monitor the quality of the outputs to be produced in the future, by relying on some statistical methods by which the performance of quality control activities can be carried out. This stage includes tests on the validity of the economic unit inputs as well as monitoring the operations and testing the full quality of the products. This stage was



criticized because it does not take into account the requirements of customers, as well as it is only directed to the expectations of designers or producers.

3. *Confirmation stage (Quality guarantee)*: The stage focused on interests that differed from previous trends. It began to be seen through a broader framework, which included the search for the causes of deviations before they occur, and by preventing the occurrence of errors at the source, and thus it was expanded to include a focus on product design, development of activities and processes, as well as the involvement and motivation of employees. Consequently, the final outcome is to enhance the level of sufficient reliability that the product will meet the requirements and specifications that will create the quality. At this stage, the quality responsibility resulted in the departments that have an effective influence in the final product. This stage has been criticized because it does not contribute in clarifying the role of management in achieving quality in an integrated manner.

4. *Total quality management stage (TQM)*: The emergence of the concept of total quality management has enhanced the potential of integrating human resources and quantitative methods, in order to meet the wishes of customers on a regular basis. The main objective becomes the improvement of the quality of overall performance and its outputs from products, services or decisions. Therefore, the quality aspect has become one of the tasks entrusted to each individual and each management within the economic unit. It becomes also necessary to focus on achieving the efficient use of all means available to achieve the integrated quality, from pre-production to post-sale. Thus, the term quality means 'zero defects', 'continuous improvement' and focus on the customer (Nicolaidis, 2012).

From what has been mentioned for the stages of quality, it is clear that each stage of quality was confined to a specific direction without paying attention to the negatives of the previous stage in order to frame a new stage, through which to address the current problems and meet future requirements or intellectual innovations.

## **Types of Quality Costs**

The quality costs include four key elements, and can be explained as follows:

### ***First: Prevention costs***

The prevention costs take the priority in the level and size of expenditure of costs compared to other quality cost components. Thus, the increasing of the level of these costs will contribute to reduce the costs of evaluation and failure as a whole besides contributing to improve the quality level (Chase, Aquilano & Jacobs, 1998; Nicolaidis, 2017).

The cost of prevention is defined as the costs incurred to prevent the supply of incompatible or non-conforming products and services such as: quality planning, product design, process costs, training costs, information costs, and others (Feigenbaum, 1991).

### ***Second: Appraisal Costs***

It is defined as the costs that are allocated to measure and analyze data to indicate the level of conformity of outputs to specifications. It is defined as the costs, which spent to diagnose defected products before they shipped to customers (Blocher & et al., 2010). These costs are expressed as costs incurred for disposal of defective units for the purpose of estimating the situation of materials and products by conducting a set of inspection and test activities for raw materials, under-production and total production.

Thus, they are the costs, which are spent to ensure that materials and products meet quality standards (Nicolaidis, 2008, 2012, 2017; Drury, 2013).



### ***Third: Internal failure costs***

Internal failure costs appear if the product does not conform to the relevant design specifications and these costs disappear with no defective product before the product is shipped to the customer, and it indicates that the costs of internal failure occur in the event of non-conformity or the emergence of defects during the stages of production processes, i.e. before the activity of final shipment of products to the customer. The economic units are working hard to reduce these costs as much as possible by demonstrating the low quality of operations, such as scraper, re-manufacture, cost of analyzing the causes of failure and its treatment, losses of production and materials and finally wasted time to address the failure (Stevenson, 2007; Tefera & Mutambara, 2014). The costs of internal failure can have less impact on the company's reputation and customers' impressions of the products of the economic unit as they are related to internal affairs.

### ***Fourth: External Failure Costs***

These costs are related to errors discovered by the customer after the purchase process, where he informs the economic unit about these defects and then returns the product to the economic unit (Drury, 2013). They can be seen as the costs borne by the economic unit after the customer received a product of poor quality level as it relates mainly to customer services, and the costs of external failure are (Garrison et al., 2010; Russell et al., 2000):

- The costs of compensation, guarantees and privileges granted to employees.
- Costs of returned non-conforming units by workers.
- Costs of returns and allowances resulting from poor quality.
- Costs inspection and complaints of customers during the warranty period.
- Costs arising from loss of sales due to poor quality.
- Costs of returning the product.

We conclude from the above that the costs of external failure may include obvious costs, and another is unclear (hidden costs), Figure 1 shows the quality cost classifications.

### **Targeted Cost**

The targeted cost technique is considered as one of strategic management accounting techniques that reflect a stage of the development stages of strategic cost management techniques that enhance the capabilities of economic units to create and enhance the competitive advantages of focusing on the quality of products in order to achieve the requirements and desires of customers.

### ***Growth and Emergence***

The beginnings of the emergence of the targeted cost were related mainly to the focus on the development of new products. It was treated with great secrecy by Japanese companies. However, in 1980, it spread widely and became widely used. It became a necessary element in creating competitive advantages in the competitive environment and became used in many countries (Feil et al., 2004). The success of many Japanese economic units in applying targeted technique has led to the pursuit of Western economic units to study and analyze the Japanese experience because they believe that targeted cost technique is one of the techniques that enabled the Japanese economic units to achieve competitive advantages on the global economic units (Nicolaidis, 2012).

It works to reduce some cost elements and exclude elements of other costs in the main operating stage, where it ensures a real improvement in performance efficiency, cost planning and control over the product life cycle in order to enhance the competitiveness of the economic unit in terms of customer satisfaction and support the profitability plan to be achieved (Feil, Yook & Kim, 2004). Figure 1 illustrates the origin of the targeted cost.

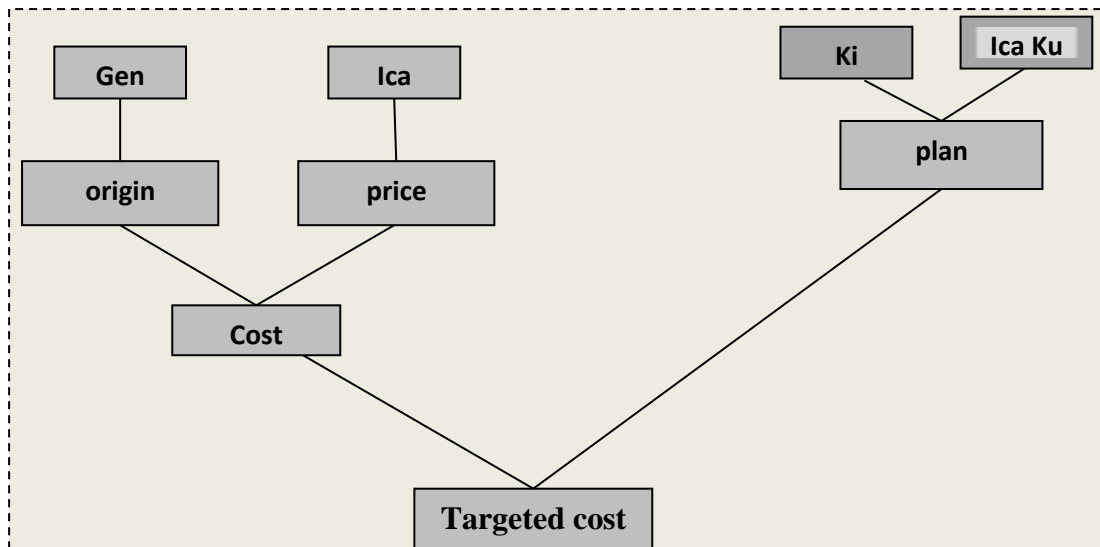


Figure 1. The origin of the targeted cost (Source: Kwah, 2008)

### Targeted cost concept

Many researchers addressed the concept of targeted cost, and each concept came in line with the adoptions of the entity that presented the concept and defined it as the process of determining the appropriate cost of products according to competitive prices. Therefore, the economic units that use the targeted cost technique should take firm measures to reduce the costs or work on redesigning their products or manufacturing process in order to achieve an adjustment with the market prices as well as maintain profitability (Blocher et al., 2010). On the other hand, it is defined as the disciplined estimation of the cost of the main parts related to each unit of product. The economic unit uses it to achieve its targeted profits when the product is sold at the targeted price. The target cost is considered as a verifiable cost throughout the stages of product life cycle (Horngren et al., 2012). Thus, it is a part of the strategic framework to create quality and reduce costs.

From the concepts that have been exposed is the targeted cost that can be described as a strategic cost management technique that focuses on eliminating the non-value added costs during the value chain analysis activities, specifically in the design activity to achieve the correct reduction of unnecessary costs in order to obtain competitive prices for products or services compared to current or prospective competitors. It is possible to show the most important differences between the targeted cost technique and the traditional method (traditional cost) that are in Table 1.

Table 1. Comparison between Target Cost Method and Traditional Cost Method

Comparison Basis	Traditional cost systems	Targeted cost system
<b>Market</b>	The market is not part of cost planning activities	Competitive markets promote cost planning activities
<b>Price Determination</b>	Cost is determined and then begins the stage of determining sales prices.	First sales prices are determined and then the cost of products
<b>Cost education</b>	Reducing costs based on reducing chances of loss as well as damage	Reducing cost by focusing on product design activities.
<b>Opinions</b>	Suppliers are not involved in design activities as this is done after the completion of the production process.	Suppliers actively involved in design activities in design activities before production.
<b>Target</b>	Aimed to reduce sales prices.	aimed to reduce purchase
<b>Relationship</b>	There is no logical relationship between value chain activities and costs planning.	The relationship between value chain activities value chain activities and costs planning is the core of the cost reduction process.

Source: Atkinson et al. (2012) and Kwah (2008)





### ***Targeted cost principles***

There are a set of principles underlying the target cost that can be exposed according to the following:

#### ***\* Price guides the cost***

If the target cost is calculated by subtracting the targeted profit margin from the competitive market price, the market situation will dominate the price, but the financial requirements of the economic unit and business will determine the targeted profits (Ansari et al., 2006).

#### ***\* Focusing on the customer***

Customer views are of great importance, since the target cost is directed through the market. Therefore, the views of customers should be taken into account at all stages to understand their needs and what competitors should do now and work on the basic requirements of customers. Here, Customers' requirements are quality, cost and time. Therefore, these requirements should be included in production decisions. The same is true for engineering development activities, because it is necessary to focus on the requirements of the customers who represent the market demand, and on the design phase of the product. This means that economic units have a great opportunity to achieve control over their costs through the product design stage and development cycle. It is at this stage that engineering changes can be made before production can be initiated in order to achieve high quality products and achieve the goal of cost reduction (Ibusuki & Kaminski, 2007).

#### ***\* Focusing on product life cycle costs***

The targeted cost technique is based on the analysis and consideration of cost elements related to product ownership throughout the life cycle. These elements include purchase prices, operational costs, operational requirements, maintenance and repair costs as well as product disposal costs at the end of its life cycle. The targeted cost technique aims to reduce the life cycle costs of both the product and the customer (Earlier, 2014).

In spite of what has been mentioned above, however, the application of the targeted cost technique is hindered by a range of constraints, including (Jarirah, 2011):

\* The concept of targeted cost is unclear in the reality of work and for many economic units, and therefore economic units should study the experiments and mature the previous experiences.

\* Managers adhere to their traditional concepts, as well as their commitment to the business system of economic units and their high-routine procedures.

\* Weak management of economic units as far as market price forecasting is the starting point of the target cost technique.

\* The difficulty of predicting potential competitors as well as current competitors.

\* The difficulty of predicting future customers' preferences.

### ***Approaches of determining the targeted cost***

The approaches that are reliable in determining the targeted cost vary depending on the cost data upon which they are relied, besides the pricing decisions that will be taken, with the necessity of taking into considerations the nature of competition in the market, the size of competition and the requirements of customers, however, there are two main approaches to determining cost:

***A. The approach of cost basis (traditional approach):*** This approach was used to determine the targeted cost of US industrial economic units as they operate in non-competitive markets. This approach is concerned with determining the cost of manufacturing the product and the price that is set to cover that cost and at the same time it achieves for the economic unit the



targeted return on investment. It pointed out that the unit does not focus its interest primarily on customers and competitors, but rather looks at costs. According to this approach, the cost of the product to be developed is determined first and then the price is determined on a cost-plus basis and the product becomes ready for marketing. The targeted profit margin is determined to arrive at the selling price after determining the cost of the product based on specifications and product design (Kato, 1993). According to this approach, the equation for determining the selling price is as follows:

**Required selling price=estimated cost + desired profit margin (targeted)**

*B. Market approach (Contemporary approach):*

This approach can provide a positive change compared to the cost approach, which depends on designing and producing products and then works to calculate the cost of the product to determine the selling prices that can achieve an acceptable profit margin, which will be a level of sensitivity to both the customer as well as the market. The market approach is an approach based on determining the targeted cost based on the customer's ability to pay. Thus, the business adoptions will be in accordance with customers' preferences and desires. This targeted cost will start with the pricing based on the market regardless of the cost of a desired product specification where the target cost is determined after excluding the desired profit for the economic unit and the remaining will represent the cost of the products. It is necessary to consider this cost and does not exclude it. Thus, the engineers will be responsible for managing the cost and not the accountants (Cokins, 2002). According to the requirements of this approach, the equation for determining the targeted cost is as follows:

**Target cost = target selling price - target profit margin**

## **Research methodology**

In view of the high level of challenges faced by the economic units in the markets in the contemporary competition environment, the continuous need to meet the requirements of the customers through the existence of an effective management that contributes to the management of costs, the continuous improvement of the quality of products and in a manner that enhances the delivery of efficient products to meet the ongoing challenges, the research problem will support the following requirements:

1. Targeted cost technique contributes in delivering products at competitive prices in a competitive environment.
2. The integration between the targeted cost and quality costs contributes to enhance and create competitive advantages.

The integration of quality costs and target costs enhances the potentials to create and support competitive advantages and thus strengthen the competitive position of economic unity. Therefore, this study aimed to: highlighting the key concepts of quality costs and targeted cost; and to creating the competitive advantages that support and promote the competitive position of economic unity. The study however followed the following steps as the procedural methodology:

1. The deductive method. It depends on the sequence of hypotheses and logical axioms, leading to conclusions that reinforce the main adoptions of the study, relying upon books, university papers, periodicals, and foreign researches.
2. Inductive method. It depends on the extrapolation of problems related to the study in question.



## Discussion

### **The Relationship between Quality Costs and Targeted Cost and their Impact on Competitive Advantage**

The competitive advantages have become the core dimension of the adoptions of leadership in contemporary markets and strive to create and enhance customer satisfaction through the quality of products or the timing of appropriate delivery, creativity and continuous innovation of the advantages to enhance the customer's relationship with the products or services of economic units and with the need to take into account the cost requirements of products.

The competitive advantage is defined by several implications and each concept reflects the views of those who have adopted the concept. One specialist points out that a competitive advantage arises as economic unity develops new methods with a high level of efficiency compared with competition. It can reverse this innovation in a competitive environment, once a process of creativity is created and broadly understood (Porter, 2008). While others see it as the strategic advantage of the economic unit, which distinguishes it from other units competing with them in the competition environment or at the industry level, by providing benefits offered by competing products and services, taking into account the lower cost, or by providing benefits that exceed those offered by competing products and services at the same prices prevailing in the market (Braslina et al., 2014). The competitive advantage determines the economic unit's ability to compete with other units in terms of quality, cost, and speed of delivery and flexibility levels that are distinguished the economic unit (Rosenzweig & Easton, 2010).

Based on the above, we see that the competitive advantage reflects the ability of the economic unit to achieve growth and continue in the competitive environment by working to satisfy existed and prospective customers, as well as the relentless pursuit of finding products with specifications that are difficult for competitors to imitate taking into account the cost of those products.

### **Characteristics of Competitive Advantage**

Some specialists offer a range of characteristics to contribute to the creation of competitive advantages, most notably of those characteristics are (Prajogo & Sohal, 2006; Talab, Flayyih, & Ali, 2018):

- A. Customer Orientation: By meeting customer requirements differently from other competitors in the industry.
- B. Competitive Priorities: Continuous pursuit to analyze the main elements of success and to work continuously on improving those elements
- C. Capabilities and abilities: through working hard to create the organizational consistency of the self-potential and available opportunities in the competitive market in order to be distinguished from competitors
- D. Value chain activities: The analysis of value chain activities and the support are the main field of creating the improvements and the development of VE and R-EP programs in a manner that meets the requirements of achieving quality and lower cost as well as the speed of submission by reducing the cycle of time related to the design, production and delivery using flexible tools that enhance the satisfaction of the wishes and needs of customers and contribute to the growth of their loyalty continuously.
- E. The strategic accounting tools promote redesign and review of the targeting cost through reference comparisons and balanced marks card. Moreover, they apply concurrent engineering across all company activities to ensure the flow of products or processes with the required quality, the most appropriate cost in appropriate time and high flexibility that is consistent with the wishes and expectations of customers.
- F. The strength of advantages: The advantages have a permanent nature and competitors face difficulties in the imitation only after long periods of time. This case puts more burdens





on competitors as far as offering competitive benefits that are superior to the current benefits. Therefore, this situation increases costs, which will naturally reflect product costs.

### **The Role of Quality Costs in Creating Competitive Advantages**

The quality is considered the fundamental factor in finding and creating competitive advantages, regardless of the competitive strategy that is reliable by economic units, since quality costs are ensured in the least cost strategy or in the differentiation strategy. The costs of quality and all its classifications, namely the costs of prevention and evaluation, are largely taken into account in activities related to design, research, development or manufacturing, because of their strategic role centered in precautionary measures that reduce the likelihood of large unexpected losses in the future. In all quality initiatives ethics is required since despite regulatory frameworks and the commitment of corporations to undertake sustainable practices, there remains a disconnect between resolve and practice (Nicolaidis, 2018).

The quality can be measured by the quality costs that is represented by the nonconformity or the cost of doing things incorrectly. Both Crosby and Juran stress on the importance of quality costs as key management tools to ensure quality creation or quality improvement that can occur during the implementation of the quality management program. In addition, controlling and reducing quality costs is one of the strategic tools to enhance the competitiveness of economic units. Many studies have been conducted on a series of economic units that do not consider quality costs as a tool to improve the quality of their products or services and conceal 90% of quality costs, compared to other series of economic units that show the real costs of quality and 100% by analyzing quality costs. The studies proved that the units that are interested in paying attention to show the cost of quality 100% managed to stay in the market and reduce the level of re-labor costs and improve the quality of products and services as well as contribute to gain the trust and loyalty of customers (Neyestani & Juanzon, 2017; Talab, Mohammed & Flayyih, 2018).

The achievement of quality as one of the competitive advantages of economic units will enhance the potential for achieving growth and raise productivity by offering products with distinct characteristics compared to competitors and competitive costs through serious work to exclude the non-host costs for values and reduce the cost of quality, specifically the cost of prevention in the early stages of work. The results are represented by the growth in profit margins and the enhanced competitive value of stakeholders in the economic unit.

### **The Role of Targeting Cost in Creating Competitive Advantages**

The targeting cost approach is considered as an important source of supporting the competitive advantages by rationalizing management decisions related to the cost or differentiation leadership strategy. The technique of targeting cost enhances the potential for cost reduction by excluding unnecessary costs in early stages of the product life cycle as well as contributing to optimal use of available resources, whenever, the higher the cost of products and services met the specifications that achieve the requirements of the customer, it was possible to reduce the cost of prevention as well as reduce the cost of failure.

The advantage of lower cost can be enhanced with the possibility of achieving it with a program of work that emphasizes the reduction or exclusion of all types of loss in the resources of the economic unit available, as well as time through the availability of supplies, wages and indirect industrial costs to achieve a tangible reduction in the unit cost of products or services as well as to reduce the cost of additional investments in the technology (Krajewski & Ritzman, 1999; Oji, Iwu & Tengeh, 2017).



## **The Reality of the Company in Question and the Nature of the Accounting System**

### **Brief Introduction of the General Company for Electrical and Electronic Industries**

This company is one of the vital installations of the state industrial sector. It was established in accordance with the decision of the economic institution which was canceled at the 45th session on 17/8/1965 according to the cooperation agreement between the Republic of Iraq and the former Soviet Union in 1959. The founding contract was issued under the title (General Company for Electrical Appliances and Equipment), but it was published in Waqa'a Newspaper under the title (General Company for Electrical Industries). The company then moved to the Military Industrialization Board, and in 1993, it was disengaged from the Military Industrialization Board and attached to the Ministry of Industry and Minerals. In 1997, the company's founding contract was approved in accordance with the General Companies Law under the title General Company for Electrical Industries with a capital of 285 million Iraqi Dinars. The registration was based on the provisions of Article 6 of the Companies Law No. 22 of 1997. In 2016, the company was merged with al-Ezz Company in accordance with the decision of the Ministry of Industry and Minerals under the name of the General Company for Electrical and Electronic Industries.

### **Factories of the General Company for Electrical and Electronic Industries**

The company works on the production and supply of many equipment and devices through a number of factories and plants belonging to the company, and the distribution of these factories and plants through two geographical locations:

1. The factory and plant of the light bulbs in al-Taji area.
2. Factories and plants located in the industrial zone in Waziriya, and consist of:
  - A. Engine Factory
  - B. Air Conditioner Factory
  - C. Household electrical appliances factory
  - D. Feeding Industries Factory (the main factory in the company).
  - E. Electrical Transformers & Generators Factory
  - F. Factory of producing light bulbs
  - H. Electronics & Communications Factory

The focus will be on the heater production plant, which is the factory of household and electrical appliances. It is under an integration stage, where most of the production processes are carried out in other factories in the company. The heaters are classified according to capacities, which are also classified as (40 liters, 80 liters, and 120 liters).

We will deal in our research with this product as a popular product in the markets besides similar competing imported and local products that are covered the local markets and we will discuss production capacities and costs to demonstrate the impact of quality costs and targeted costs in supporting and enhancing the competitive advantages. We were chosen the product with a capacity of (80 liters) because of the wishes of the market and customers for this product with the need to take into account some of the things that hinder the growth of the product in the markets, some of which represent in:

- A. Dumping the markets with imported products of low quality and lower cost.
- B. Existing non-conforming local products that are at lower cost.
- C. The high cost of the company's product is due to the availability of quality specifications, which is reflected in this increase of costs.
- D. The absence of government support for the product.



## The Adopted Cost System Adopted in the Company

The company adopts a unified accounting system. Accordingly, the company is classified into cost centers, which are also classified into four groups according to the approved accounting guide.

- *Production centers.* The company has several production centers that support the production operations and there are 35 production centers.
- *Services centers for production centers.* The company has 24 service centers that provide production centers with all services that enhance production processes.
- *Marketing Centers:* The Company has many marketing outlets in the company's headquarters through which the sale and marketing of the company's products are done. The company has also seven centers in the governorates of the country.
- *Administrative centers.* The company owns a group of administrative centers that support works with production centers.

The following is a Table 2 showing the costs of the heaters plant during 2017

**Table 2.** Costs of the Heaters Plant during 2017

Account	production Centers' Costs	Service Centers' Costs	Administrative Centers' Costs	Total costs
<i>Salaries and wages</i>	105157514	408147422	132465241	654770177
<i>Rewards</i>	19735814	18400000	3000000	24575814
<i>Supplies and raw materials</i>	385213	-----	-----	385213
<i>Stationery</i>	-----	785230	1842000	2627230
<i>Water and electricity</i>	482240	646830	672842	1801912
<i>Regular maintenance</i>	-----	-----	1000000	1000000
<i>Dispatches</i>	-----	14251000	8524700	22775700
<i>Service expenses</i>	-----	-----	9682800	9682800
<i>Furniture and office equipment</i>	-----	3628422	-----	3628422
<b>Total</b>	125760781	455838904	157187583	721247268

Source: prepared by the researchers based on data of the costs division

After reviewing and studying and analyzing the table above which shows the most important costs related to the production of heaters with all the capacities provided by the production lines in the factory above, it was found that there was a significant increase in the cost level, which represented by (721247268) dinars, which resulted from various cost items. It is noted that the high percentage of costs for salaries and wages and unbalanced with the volume of production and annual sales of the product provided by this plant, because there is no harmony between the level of revenues resulting from the sale of a limited number of heaters (214 with capacity 80 liters and 120 liters) and the size of salaries and wages as well as bonuses and benefits.

## Quality Cost Analysis in the Company of the Research Sample

The quality department of the company is engaged in the tasks of measuring and analyzing quality costs. The department of quality management is responsible for the tasks related to measurement and analysis as well as work on the continuous improvement of the costs of quality, which can be explained as follows:

### First: protection costs (prevention):

The cost of quality related to protection or prevention is classified into three main categories:

1. Planning quality and work for inspecting Samples (Raw Material Laboratories):



These costs represent the first level of inspection for supplies and raw materials obtained from the suppliers of the company based on tenders. Laboratory tests are carried out to ensure compliance with the standards. Examples of materials used in this area are silver nitrate and magnesium nitrate as well as a set of other concentrates.

2. Incentives for ensuring the quality of products and their development:

This type of costs is generated by the costs of the chemicals involved in the test of raw materials entering competitors' products.

3. Training for quality:

This type of cost resulted from training and qualifying courses as well as workshops conducted by the company within its corridors or abroad, and for all employees who are sometimes technicians, engineers and sometimes administrators.

These courses are categorized into:

- Internal courses: They are held within the company by hosting the lecturers in the specializations for which the course was prepared.
- External courses: They are usually conducted in the headquarters of the Ministry of Industry and Minerals or in coordination with universities in accordance with the specializations for which the courses were prepared.

### **Second: Evaluation Costs**

The evaluation costs in the company are classified as follows:

1. *Checking the raw materials supplied to the company:*

It includes costs related to the inspection of raw materials received by the company from suppliers with whom the company made a contract of supply. These raw materials are tested by using chemicals in company laboratories, and this process is similar to what was done in the previous phase, but the difference is that the test of raw materials is done before the materials enter into the company's warehouses.

2. *Inspecting the elements associated with production processes:*

It is represented in the costs that are raised from the inspection of the elements accompanying the production processes. The inspection is done by using chemical materials and is similar to some kind of procedure in the previous steps.

3. *Final laboratory inspection:*

The costs are resulted from the final inspection of the product for the purpose of ensuring the conformity of the product with the specifications after the final completion of the product before the stage of final preparations.

4. *Material damage caused by specific tests:*

This type of costs is resulted from the qualitative inspection of products by inspecting the samples. The costs are calculated by determining the amount of damaged materials and are treated at their costs (unit cost of materials) to calculate the final costs of damaged materials, as a result of non-conformity with the specifications, and no costs were recorded under this classification.

### **Third: The Costs of Internal Failure**

The costs related to non-conforming products are treated within the company and before reaching the final customer.

1. *Determining the costs of non-conforming products.*

No costs have been recorded in the company under this category of costs which can be calculated by identifying non-conforming units for the specifications and treating them at their costs.

2. *Costs arising as a result of insulation of damaged products*

We did not notice any type of registration of these costs during the period of research.



#### Fourth: the Costs of External Failure

This category of costs includes the cost of non-conforming products for specifications and the procedure adopted in the company under the study is to replace the non-conforming units for specifications when the product reaches the final customer through the marketing outlets. The cost of this type of quality is calculated according to the company's procedures by the number of returned units from customers with their costs. Costs for this type of quality cost were not noted in the company cost records, and Table 3 shows the quality costs.

**Table 3.** Quality Costs in the Company for 2017

Sequence	Quality cost classifications	Amounts
<b>Evaluation costs</b>		
1.	Analyzing and inspecting suppliers' supplies	<b>432800</b>
2.	Inspection which coincides with the output	<b>128000</b>
3.	Final inspection	<b>357000</b>
Sum of evaluation costs		
<b>Protection costs</b>		
4.	Quality planning costs	<b>1428000</b>
5.	Training courses and quality training	<b>6745000</b>
6.	Sum of protection costs	<b>8173000</b>

Source: Prepared by the researchers based on company data

#### Application and analysis of the target cost technique in the company

We will deal with the application of the targeted cost technique in the company in order to clarify the mechanisms of determining the targeted prices in the company for the heaters plant, specifically the heater with a capacity of 80 liters, and then determine the reduction in the targeted costs that can be proposed in order to exclude non-value added costs and thus achieve competitive advantages by offering a product with good specifications and competitive targeted and selling prices compared to domestic and foreign competitors. To apply the targeted cost technique, a series of stages should be done to represent the process of applying it.

#### Determining the target price of the company's product

For the purpose of determining the targeted price of the company's products, it is necessary to know the prices of the competing products of the company's product in the local market. This includes homemade products as well as imported products for the purpose of determining the nature of the discrepancy in the prices adopted in the markets. The following table shows the categories and prices of competing products in the market for the 80-liter heater, which is the subject of this study.

**Table 4.** Prices of heaters in the Iraqi market

Sequence	Type (commercial brand)	Price
1.	al-Ieman heater/Iraqi origin	65000 Iraqi dinar
2.	Tahan heater/ Iraqi origin	80000 Iraqi dinar
3.	al-Rafedain heater/Iraqi origin	50000 Iraqi dinar
4.	Thaqiel heater/ Iraqi origin	60000 Iraqi dinar
5.	al-Amthel heater Iraqi origin	70000 Iraqi dinar
6.	heater/Egyptian origin	75000 Iraqi dinar
7.	Ariston heater/ Italian origin	145000Iraqi dinar
8.	heater /Saudi origin	110000 Iraqi dinar
9.	Dubai heater/ UAE origin	90000 Iraqi dinar
10.	Heatex Heater/ UAE origin	105000Iraqi dinar
11.	<b>Total</b>	<b>850000</b>

$$\text{Target price} = \text{Total competing products prices} / \text{number of products} \\ = 850000 / 10 = 85000 \text{ Iraqi dinar, average of the targeted price}$$

#### Determining the targeted profit margin



After calculating the targeted price of the 80-liter heater based on the prices of competing products in the market, we will move to the next step of determining the targeted profit margin and here it is necessary to deal with the nature of the obstacles faced by the company, which is unfair competition of the company's products in the market and the absence of the control and quality control that resulted in the presence of products that do not meet the local and foreign specifications. Therefore, the targeted profit margin that the company seeks to achieve ranges between 10% and 25%, and the tendency of the company is likely towards the minimum margin of targeted profit and accordingly, the profit margin will be:

$$\text{Target profit margin} = \text{target selling price} * \text{Target profit margin ratio}$$

$$= 85000 * 10\% = 8500 \text{ Dinar/ a unit of product}$$

**Determine the actual unit cost of the product**

Once the target cost has been determined, the current cost, which includes all costs spent on the product during the product life cycle, will be determined and calculated.

**Table 5 .** The actual costs of the heater product with a capacity of 80 liters

Sequence	Cost elements	Unit cost	Cost-to-total unit cost ratio
1.	<b>Direct materials</b>		
	Heating Heater	16000	%16.7
	Galvanic metal part	32420	%33.9
	Metal part of aluminum	6840	%7.1
	Rocky wool	5132	%5.3
	Galvanic process	136	%0.14
	Connecting cylinders	1650	%1.7
	Electrical wire	2480	%2.5
	Welding wire	774	%0.8
	Painting	5400	%5.6
	Metal tube	850	%0.8
	Electric lamp	120	%0.12
	Sum of direct materials	71798	%75.2
2.	<b>Direct wages</b>	6246	%6.5
3.	<b>Indirect Industrial Expenses</b>	12841	%13.4
4.	<b>Marketing and administrative costs</b>	4568	%4.7
	<b>Total costs</b>	95453	%100

$$\text{Actual selling price} = \text{actual cost} + \text{actual profit margin}$$

$$105000 = 95453 + 9547$$

It is noted that the gross profit margin is very close to the minimum ratio of the planned profit margin for the company, and there are many reasons to reflect this decline in profit margin, and perhaps the most prominent ones are:

- \* there is a lower level of the actual production than the planned levels because the actual production in 2017 was 132 units of heater with capacity of 80 liters while the available energy for production is 1750 units.
- \* The increase in the number of workers in production plants, which exceeds the requirements of actual production and thus incur unnecessary costs for the values of the final product and this results high unnecessary costs.

**Determining the targeted reduction into targeted costs**

The targeted gap, at this stage, is determined, which expresses the challenges and constraints that create the gaps between the actual costs and the target costs, where the product should be surpassed to keep pace with competitors in the competition environment and then headed towards superiority over the existing competitors as well as work to develop the requirements of sustainable development to enter into new markets in the future.

$$\text{Targeted reduction in costs} = \text{actual costs} - \text{target costs}$$

$$= 95453 - 76500 = \text{ID } 18953$$



The target reduction ratio would be as follows:

$$\text{Target Reduction Ratio} = \text{Target Reduction} / \text{Actual Cost} \\ = 18953 / 95453 = \text{Actual costs } 19.8\%$$

The calculated gap between actual and target costs shows the level of apparent differences in costs, which is one of the main indicators of the emergence of losses and even its accumulation according to the data that has been analyzed. This thing indicates the weakness in the competitive position, and therefore it is necessary to conduct a study and an analysis of unnecessary and specifically indirect costs, which are (12841 dinars), and their ratio is to the total costs of 13.4% for the purpose of diagnosing unproductive costs and either exclude them or benefit from them through distributing on products or other productive lines in the company. The result will be to reduce costs and make them at the level of targeted costs and then to achieve the targeted price that will meet the aspirations of the company and enhance the competitive position of the product and the company as a whole.

### **Supporting and Enhancing Competitive Advantages through Integration of Quality Costs and Target Cost**

After dealing with the study of the quality costs that have been applied to the small part as well as discussing the application of the targeted cost technique in the company, we will present and analyze mechanisms of achieving competitive advantages of the company based on diagnosis of obstacles, and work to correct the wrong paths so that the company supports the potentials of strengthening the competitive position of the company among its competitors.

#### **First: Achieve competitive advantages with targeted cost technique**

The company faces challenges and constraints as indicated in the research centered in the competition of domestic and foreign products as well as high actual costs compared to competitors resulting in a gap between the targeted and the actual costs.

1. It is noted that the level of indirect industrial costs amounting to JD (12,540), and most of these costs are unproductive costs that do not contribute to add any value to the company's product, which is a heater capacity (80 liters). The ratio of these costs to the total cost of the unit of the product is (13.4%). This ratio is high because of many causes, the most important of which is the presence of a number of workers and supervisors exceed the production requirements as well as the addition of unnecessary costs to the unit of the product that are represented by the costs of guards and warehouse costs and the costs of depreciation of the machines, which were stopped of working. The result is the rise of indirect industrial costs and the fundamental reason that can be analyzed and diagnosed the gap is accordingly the lack of optimal utilization of available capacities:

- The used capacity in producing the company's product of heaters is (214/1750) or 12.2%, meaning that the idle unused capacity is 87.8%. In order to achieve the optimal utilization of this unused energy, the company has all the requirements that enhance the potential of the exploitation of this energy of workers, technicians and engineers as well as production lines.

The exploitation will support the capacity utilization of economies of size and thus it reduce indirect industrial costs, as they will be distributed over the size of more units and thus reduce the level of indirect industrial costs per unit of the product.

$$\text{Total Indirect Industrial Expenses} = \text{Number of Units Produced} * \text{Indirect Industrial Costs per Unit} \\ 12841 * 214 = 2747974 \text{ Dinar}$$

Utilizing the available energy, the level product will be increased to 1200 units instead of 214 units, and since the two levels of production are within the planned production capacity, the



unit share of the product from the indirect industrial costs will be: (2747974 dinars / 1200 units = 2290 dinars per unit of product) i.e. 2.3% of the actual unit costs of the product, but taking into account the occurrence of additional industrial indirect costs where they are very little.

The use of idle unused energy will enhance the competitiveness of the product compared to the competing products, thus the competitive achieved advantages will be centered on lower costs and at the same times they will keep the same quality levels.

- A. To achieve the actual increase in the quantity of production and what it should be resulted from this, it is very necessary to re-study the current product specifications of the company as well as competing products to determine the specifications that meet the requirements of the customer.
- B. Taking into account the exclusion of storage costs as much as possible or reduce them to the lowest possible level through direct shipment of products from production lines to the company's sales outlets.
- C. Activating the activity of the research and development center as well as the design division and the formation of work teams that adopt the study and analysis of product specifications that meet the customer's requirements and specifications that should be added to the product. For example, the product must be made according to the customer's need, because the development of infrastructure or urban development and change in the structure of accommodation houses and the transition to vertical construction are all added advantages of the product to be ready to install on the ground or on the walls or as the customer's wishes.

### **Second: achieving competitive advantages with quality costs**

It is noted in the study and analysis of the quality costs of the company and specifically for the heaters plant, that the classifications of the costs of quality in the actual reality is represented by the costs of prevention as well as the costs of evaluation. It is also noted that there were no costs of failure, for both internal and external costs. This shows an initial positive indication of the lack of costs of failure, and the units, which have been produced, are in accordance with the technical specifications of the units produced. For the achieving the integration between quality costs and targeted costs to enhance competitive advantages, the company should:

1. Diagnose quality costs and for each classification of quality costs and indicate the extent to which they match the targeted costs and in the manner that match and create competitive advantages that will support the potential and requirements of achieving the strategy of lower cost leadership. This will result positive indicators that are representing the extension of influence in the current as well as the future markets.
2. Determine the cost of quality and each of the targeted costs of the different elements of production as well as focus on maintaining clean production free from defective units that do not meet the specifications and in a manner that will enhance customer confidence in the product, and this will result in achieving loyalty by customers to the company and all its products and the ability to win new customers and the end result will be to maximize the sales of the company as a whole and thus maximize the values and competitive advantages of economic unity.

### **Conclusion**

1. Enhancing the abilities in keeping pace with developments and innovations in the competitive environment, the economic units must raise the level of attention to quality costs as an approach to the management of strategic costs and in a manner that promotes the creation and maximization of the competitive advantages of these units.
2. Targeted cost technique is one of the techniques that contribute in raising the level of effectiveness of controlling the costs of the product during all stages of the product life cycle



- and in a manner that contributes to enhance the effectiveness of the strategy of lower cost leadership and this is resulting the competitive advantages.
3. Achieving the integration of quality costs and targeted costs will enhance the potential to measure and analyze the cost of quality and each targeted cost for each cost component in a manner that will contribute to the provision of appropriate cost analysis information on an ongoing basis. The result is continuous improvement for all elements of costs.
  4. Focusing on the integration of quality and targeted costs will contribute to:
    - To achieve leadership in the markets and thus maximize sales and profitability.
    - To support the possibility of providing a product with specifications that meet the requirements of the customer through follow-up of the product since the design stage and work to replace or exclude non-conforming parts during the initial stages of production.
  5. The heaters plant in the general company suffers from high unnecessary costs, especially indirect industrial costs due to the non-exploitation of available energy and the lack of use of economies of volume. The result is lower competitive advantages due to higher production costs of the product compared to competitors.
  6. Effective application of targeted cost technique with quality costs will enhance the potential of creating competitive advantages by:
    - Excluding unnecessary and unproductive costs.
    - Reducing production costs and providing the requirements of a lower cost leadership strategy.
    - Providing products that are conformed to specifications and meet the requirements of current and prospective customers.

## Recommendations

1. Strive to keep abreast of developments in the industrial environment to identify innovations in techniques of strategic cost management, including quality costs and requirements that enhance the potential to achieve the requirements of creating and maximizing the competitive advantages of economic units.
2. Raise the level of interest in the targeted cost technique to provide adequate guarantees that the costs of the product are within the levels planned in the design stages of the product and throughout the life cycle of the product.
3. The economic units should study the integration between of quality costs and targeted cost technique to take advantage of the competitive advantages that integration can be provided, as well as contribute to the provision of information requirements and for all cost elements to contribute in the diagnosis of unnecessary costs and then develop corrective measures to address unnecessary costs.
4. The integration of cost and target cost enhances the potentials to achieve market leadership and creates competitive advantages by offering products that meet customers' requirements at the lowest cost.
5. Working on utilizing the available production capacity in a manner that enhances the capabilities of the heaters plant to reduce the indirect industrial costs resulting from the presence of a large number of workers and engineers that exceed the production requirements as well as providing the requirements of utilization of economies of volume and thus provide competitive advantages represented by reducing unnecessary costs and achieving leadership by a low cost driving strategy.

## References

- Ansari, S., Bell, J. & Okano, H. (2006). Target costing: Uncharted research territory. *Handbook of management accounting research*, 2, 507-530.



- Atkinson, A.A., Kaplan, R.S., Matsumura, E.L. and Mark Young, S. (2011). *Management Accounting: Information for Decision Making and Strategy Execution*. 6 Pearson Education.
- Blocher, E. J., Stout, D. E. & Cokins, G. (2010). *Cost management: A strategic emphasis*. Boston McGraw-Hill/Irwin.
- Braslina, L., Viksne, K. & Cumakovs, A. (2014). Innovative competitive advantage determination model. *Economic Science for Rural Development*. Available online at [https://ilufb.ltu.lv/conference/economic\\_science\\_rural/2014/ESRD\\_35\\_2014\\_Marketing\\_Home\\_economic.pdf](https://ilufb.ltu.lv/conference/economic_science_rural/2014/ESRD_35_2014_Marketing_Home_economic.pdf) [Accessed on 7/06/2019]
- Browne, J., Harhen, J. & Shivnan, J. (1988). *Production management systems: a CIM perspective*. Addison Wesley Publishing Company.
- Chase, R. B., Aquilano, N. J. & Jacobs, F. R. (1998). *Production and operations management*. Irwin/McGraw-Hill,.
- Cokins, G. (2002). *Activity-based cost management: an executive's guide* (Vol. 10). John Wiley & Sons.
- Drury, C. M. (2013). *Management and cost accounting*. Springer.
- Feil, P., Yook, K. H. & Kim, I. W. (2004). Japanese target costing: a historical perspective. *International Journal*, 11, 10-19.
- Flayyih, H.H., Mohammed, Y.N. & Talab, H.R. (2019). The role of accounting information in reducing the funding constraints of small and medium enterprises in Iraq. *African Journal of Hospitality, Tourism and Leisure*, 8(4). 1-10.
- Ganye, K. D. (2008). Facing up to New Realism: The case of using the Target Cost Management approach in healthcare delivery Management. MPhil, University of Exeter.
- Garrison, R. H., Noreen, E. W., Brewer, P. C. & McGowan, A. (2010). Managerial accounting. *Issues in Accounting Education*, 25(4), 792-793.
- Hagedoorn, J. (1990). Organizational modes of inter-firm co-operation and technology transfer. *Technovation*, 10(1), 17-30.
- Horngren, C. T. (2009). *Cost accounting: A managerial emphasis*, 13/e. Pearson Education India.
- Horngren, C. T., Foster, G., Datar, S. M., Rajan, M., Ittner, C. & Baldwin, A. A. (2010). Cost accounting: A managerial emphasis. *Issues in Accounting Education*, 25(4), 789-790.
- Ibusuki, U. & Kaminski, P. C. (2007). Product development process with focus on value engineering and target-costing: A case study in an automotive company. *International Journal of Production Economics*, 105(2), 459-474.
- Kato, Y. (1993). Target costing support systems: lessons from leading Japanese companies. *Management accounting research*, 4(1), 33-47.
- Neyestani, B. & Juanzon, J. B. (2017). Impact of ISO 9001 Standard on the Quality Cost of Construction Projects in the Philippines. In *Proceedings of 2017 Manila International Conference on "Trends in Engineering and Technology"*(MTET-17) Jan (pp. 23-24).





- Nicolaides, A. (2018). Is there a disconnect between profit and ethics? Finance News South Africa. Biz Community. Available online at <https://www.bizcommunity.com/Article/196/357/175901.html>
- Nicolaides, A. (2017). Ethical Practices, Eco-centric Business and Environmental Sustainability, *Journal of Human Ecology* (Delhi, India), 57(1-2), 1-10
- Nicolaides, A. & Harding, P. (2012). Evaluation of the Nissan Plant Management System as a Global Improvement Tool and the Role of Hoshins, *Journal of Emerging Trends in Economics and Management Sciences*, 3(4).
- Nicolaides, A. (2008). Service quality, empowerment and ethics in the South African hospitality industry and the road ahead using ISO9000/1, A thesis submitted to the Faculty of Commerce for the Doctor of Commerce degree at the University of Zululand.
- Nudurupati, S., Arshad, T. & Turner, T. (2007). Performance measurement in the construction industry: An action case investigating manufacturing methodologies. *Computers in Industry*, 58(7), 667-676.
- Oji, O. N. E., Iwu, C. G. & Tengeh, R. (2017). Social media adoption challenges of small businesses: the case of restaurants in the Cape Metropole, South. *African Journal of Hospitality, Tourism and Leisure*, 6(4).
- Porter, M. E. (2008). *Competitive strategy: Techniques for analyzing industries and competitors*, New York: Free Press,
- Prajogo, D. I. & Sohal, A. S. (2006). The relationship between organization strategy, total quality management (TQM), and organization performance—the mediating role of TQM. *European journal of operational research*, 168(1), 35-50.
- Talab, H. R., Mohammed, Y. N. & Flayyih, H. H. (2018). Measurement of Earning Management Practices of Listed Companies in Iraqi Stock Exchange: a Case of Kothari Model Analysis. In *Book of proceedings* (p. 278). University of Białystok: Poland.
- Talab, H. R., Flayyih, H. H. & Ali, S. I. (2018). Role of Beneish M-score model in Detecting of Earnings Management Practices: Empirical Study in listed banks of Iraqi Stock Exchange. *International Journal of Applied Business and Economic Research*. 16.
- Tefera, O. & Mutambara, E. (2014). Effect of organizational changes on employees' motivation at a Country Club in Kwazulu Natal: from the employees' participation perspectives. *African Journal of Hospitality Tourism and Leisure*, 5(1).
- Zander, K. (1988). Nursing case management: strategic management of cost and quality outcomes. *The Journal of Nursing Administration*, 18(5), 23-30.