



THE EXTENT OF THE IMPACT OF QUALITY COSTS ON THE EFFICIENCY OF FINANCIAL PERFORMANCE AN APPLIED TO STUDY IN THE IRAQI COMPANY FOR THE MANUFACTURE AND TRADE OF CARTONS (IICM)

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Article history:	Abstract:
<p>Received: 28th May 2022 Accepted: 30th June 2022 Published: 4th August 2022</p>	<p>The research aims to measure the impact of quality costs on the efficiency and evaluation of financial performance in the Iraqi company for production. First, to explain the research problem and achieve its objectives, the descriptive analytical approach was adopted, as (50) questionnaires were distributed to the sample members (accountants, cost centre accountants, production line managers, sales centre managers, and financial analysts). Then, using the scale of the simple linear regression model, the research hypotheses were tested, and the research reached the most important conclusions, namely: the application of quality costs and exemplary implementation has become a crucial indicator of the improvement of the company's performance in general and financial performance in particular.</p> <p>The most important recommendations: The need to apply quality costs to ensure continuous improvement of products and to discover and analyze the costs of defective products and their treatment, thus ensuring the quality of products and finding ways to reduce these costs.</p>

Keywords: Quality costs, evaluation costs, preventive costs, internal and external failure costs, financial performance evaluation.

1. INTRODUCTION:

Economic units face several challenges as a result of rapid economic changes and transformations, including increased competition at the local and global levels and the resulting change in consumer behaviour, which has become more aware and able to choose the best product or service, where quality plays a crucial role in that.

Since quality costs will lead to higher production costs and exhausting the unit with additional costs that can be dispensed with, the expected return will be achieved in the long run, The provision of high-quality products is reflected in the unit's ability to achieve profits by balancing investments and production costs, thus maintaining the provision of high-quality products with the lowest costs, and this is achieved by Through t Considering that the required quality leads to a significant increase in production costs and exhausting the unit with costs that can be dispensed with, primarily since the return on quality spending may be achieved over long-term periods, the continuation of the unit depends on the efficiency of its performance in general and the efficiency of financial performance through the use of rational scientific methods for

resource management The necessary financial and optimal utilization of available resource she optimum use of available resources.

2. RESEARCH METHODOLOGY:

2.1. Research problem:

The research problem stems from the impact of quality costs on the efficiency of financial performance in the Iraqi Company for the manufacture and trade of cartons (IICM) and the impact of prevention and evaluation costs and internal and external failure on the efficiency of the company's financial performance.

2.2. Research Hypothesis

"There is no statistically significant effect of the variables of quality costs (preventive, evaluation and failure) on the efficiency of the financial performance of the Iraqi Company for the manufacture and trade of cartons (IICM)".

2.3. Research Importance :

The importance of research comes through applying quality costs for efficient financial performance in units through a balance between reducing costs, raising the level of quality and continuous improvement of



performance in general and financial performance in particular.

2.4. Research Aims:

The research aims to identify the costs of quality, its most important indicators, its size, its measurement methods, the benefits of reducing it, and the extent of its impact on the efficiency of financial performance in the Iraqi Company for the manufacture and trade of Cardboard (IICM).

2.5. Study method and tools:

The descriptive-analytical approach was adopted to study this topic in its theoretical aspect, in addition to the applied statistical tool for analyzing the results of the questionnaire axes, using the SPSS statistical analysis program

3-PREVIOUS STUDIES:

- Nabil and Jabber study, 2005 "The importance of measuring quality costs and disclosing them in the financial statements" The study aimed to identify the activities that contribute to the occurrence of quality costs, which facilitates the process of measuring costs based on those activities, and the objective and fair accounting measurement of costs in general and quality costs in particular. The study concluded that the cost of quality is of great importance in industrial companies, especially in that it affects the quality of the product provided to the consumer, and the costs of prevention occupy the highest relative importance among the types of costs because they contribute effectively to reducing the occurrence of other costs of quality.
- Khaled Sami Hammouda's 2015 A.D., "The Reality of Quality Costs in Palestinian Industrial Companies" aimed to clarify the concepts related to quality and its costs by identifying the reality of quality costs in the Palestinian food industry companies in the Gaza Strip. The industrial sector in the Gaza Strip emphasizes the importance of measuring quality costs in all four dimensions. Most company administrations consider quality control costs as investment costs despite the limited quality of some locally made food products.
- The study of Zaki Al-Taher Fadlallah Mardous, 2016 "The Role of Internal Audit in Monitoring and Optimizing Financial Performance", The study aimed to demonstrate the role of internal audit in monitoring and to improve performance in establishments by highlighting the importance of internal audit reports in monitoring the performance of establishments and its impact on increasing production efficiency. As a result, the

study concluded that an internal audit is an effective tool in improving the efficiency of financial performance and that the application of internal audit standards increases the confidence of management and owners in monitoring the performance of their establishments.

4. QUALITY COSTS:

4.1. The concept of quality costs

Quality costs are "the sum of costs incurred by the producer or constructor to determine and control the level of quality that the product reaches, and evaluate the extent of conformity between the product specifications and the customer's desires." (Al-Sayyah, 2014, 23)

They are all costs incurred by the manufacturer to ensure that they produce a high-quality product. Quality costs include both costs to prevent low-quality production and costs that arise after producing a low-quality product." All manufacturers spend a lot of time and resources trying to produce high-quality products. Some companies spend money at the lowest prices to keep their products at the highest quality levels. The cost of quality can be represented by the sum of two factors: the cost of good quality and the cost of inadequate quality. This equation may seem simple, but it is more complex, as the cost of quality includes all costs associated with product quality, from preventive costs that aim to reduce or eliminate malfunctions and the cost of components. Controlling the process to maintain quality levels and the costs associated with internal and external failures. (Al-Masoudi, 2010, 23)

4.2. Methods for measuring the types of quality costs:

Quality is a big problem for most companies, on top of which are companies with higher and more consistent quality that work better than others. Moreover, it is worth noting that the term quality costs have many meanings, and to measure quality costs must specify their type, which is as follows. (Al-Titi, 2011, 100)

1. Poor quality costs: They include the costs of internal and external failure, and they are as follows:

A. Internal failure costs include

- Rework: The cost of correcting defective products.
- Scrap: It is the products that have defects.
- Re-testing is the cost of re-testing products after they have been re-manufactured.
- Downtime: loss of adequate capacity caused by quality problems.
- Analysis failure: The cost of analyzing goods or services that do not conform to quality to identify the root of the problem.



- Process change: The cost of modifying manufacturing or service processes to correct a defect or deficiency.
- Downgrade: The difference between the standard selling price and the low price for quality reasons.
- Loss of revenue: Inability to meet current demands and loss of future orders.

B. External failure costs include

- Complaints: It includes the costs of verifying and amending complaints about the product that has a defect.
- Warranties: These are the costs of replacement or repairs in products that have a defect.
- Repair Returns: The costs are associated with receiving, repairing and replacing the defective product.
- Exchanges: These are the costs of concessions offered to customers.
- Penalties: costs associated with violations of service level agreements.
- Missed Opportunities: Lost future profits due to switching customers for quality reasons.
- The company's brand: This is the most important point because it is difficult to measure and can be the most harmful to the company.

2. Costs of good quality: The best and most effective way to manage quality costs is to avoid defects in the first place, and it is less expensive to prevent problems than to find and correct them after they have occurred. (Zaki:2016,165)

A. Prevention costs:

- Quality Planning: It is a set of activities that create a plan that includes total quality.
- Operations Planning means studies of operational capabilities and other plans and activities related to the industry.
- Quality Audit: It evaluates the implementation of activities in the entire quality plan.
- Assessment of the quality of resources: It is assessing the quality of resources before choosing the supplier.
- Education and Training: It means preparing and implementing programs to train quality-related personnel.
- New product review: design review, reliability engineering and risk assessment.

B. Evaluation costs:

- Ensure that the materials received are of the same required specifications.
- External Inspection and Inspection: It is the testing of the product throughout its manufacturing process.

- Field Test: It is the withdrawal of the product from the market and its evaluation.
- System Audit: A formal assessment of the infrastructure behind products and services.
- Approval of measurement and testing devices: To maintain the accuracy of the tools used in the product testing process. (Achiouni,2015, 67)

4.3.The importance of measuring quality costs:

Poor quality represents a large part of the total costs. However, there are other important reasons to focus on quality costs, and it should be noted that quality costs are essential for several reasons, including the following. (Al-Wadi et al., 2012, 32)

- Taking high accuracy and objectivity measures by estimating and evaluating costs because quality costs can be hidden and intangible, which may cause a significant financial crisis for the producing company.
- The concept of quality continues to evolve, so the standard by which quality is measured is constantly changing.
- There is a difference between product quality and service quality. With companies increasing their mix of products and services, they need to distinguish between them in terms of measuring quality.
- High quality is an effective indicator to encourage responsiveness and flexibility in the success of most companies.

4.4.Methods of measuring quality costs:

Several methods and methods are used in comprehensive management in measuring quality costs, and the quality costs report is the basis for using all methods used in this field. The most important of these methods are: (Zaki:2016,234)

1. Trend Analysis: In this method, the method of comparing current cost levels with past cost levels is used, and accordingly, important information that is useful in future planning for improving the quality level is extracted.
2. Pareto Analysis: It is the most efficient and effective method among the methods of measuring quality costs, as the important few are filtered and resorted to; In order to reduce costs as much as possible

The following mathematical equation is the main method for measuring quality costs and is as follows:

$$\text{Quality costs}=(F_{ci}+F_{ce}+A_c+P_c)$$

FCI =Internal Failure Cost, Fce= External Failure Costs,

External Failure Costs= Appraisal Cost , Pc= Prevention Cost



5. FINANCIAL PERFORMANCE EVALUATION:

5.1. The concept of financial performance appraisal:

Evaluating financial performance is one of the essential processes that help the economic unit to identify the efficiency and effectiveness of its financial performance and to detect and correct deviations in it, which contributes significantly to improving it and thus ensures its survival and survival growth. (Nobli, 2015, 104)

Several definitions of financial performance evaluation are almost similar to each other.

Farhat Juma defines financial performance appraisal as: "It is about providing a value judgment about the management of financial resources in the unit, that is, it is measuring the achieved or expected results in the light of predetermined criteria to determine what can be measured and then the extent to which the objectives are achieved to know the level of effectiveness, And determining the relative importance between the results and the resources used, which allows judging the degree of efficiency." (Farhat, 2010, 28)

- As Daden Abdel-Ghani defined it, "The extent to which the revenue and earning capacity is achieved in the unit, as the first represents the unit's ability to generate revenues, whether from its current, capital or exceptional activities, While the second represents the unit's ability to achieve a surplus of its activities in order to equalize the factors of production according to the modern theory" (Daden, 2015, 304).

5.2. Beneficiaries of the financial performance appraisal:

There is a group of parties that perform or request an evaluation of the financial performance in order to use it for different purposes and to make different decisions based on that information, and these parties are divided into (Samiha, 2013, 13)

1 . Internal users (investors, stockholders and unit management)

2. External users (creditors, suppliers, customers, government agencies, and other parties interested in evaluating the financial performance of the economic unit)

5.3. The importance of financial performance appraisal
Evaluating financial performance has been of great importance in various studies and research as it confirms the efficiency of the use of available resources and contributes to verifying the implementation of the prepared goals and their impact on the various activities in the unit. Essam, 2012, 61)

- Providing financial information that contributes to taking various appropriate decisions.

- Effective contribution to value improvement and cost reduction.
- Please contribute to formulating general policies for the unit or the bodies based on it.
- Communicate the unit's objectives to all activities and levels.
- Contribute to the long-term comprehensive evaluation based on the short-term evaluation.
- Strengthening contacts between different levels and interests and facilitating coordination among them.

5.4. Steps for evaluating financial performance:

The evaluation of the financial performance in the economic unit provides the necessary information about the performance analysis, the deviations emanating from it, and how to correct and avoid them in the future. Therefore, it must carry out the process of evaluating the financial performance according to a specific methodology to ensure its effectiveness, and one of the most critical steps of the evaluation (Qureshi, 2011, 122)

- Determining performance standards: Standard performance represents the desired goal by comparing it with actual performance and identifying existing deviations. This step is considered the cornerstone of the financial performance evaluation process, as its absence makes the evaluation process meaningless.
- Measuring actual performance and identifying deviations by obtaining various information from the financial statements and annual reports related to the unit's financial performance according to predetermined indicators and standards.
- Performance evaluation and deviation analysis are done through careful analysis of the measurement outputs, searching for the causes of deviations and determining their degree.
- Correcting deviations: by making recommendations and suggestions for the crisis to correct these deviations, and here is the significant and influential role of evaluating financial performance in the economic unit in achieving the goals set for it.

6. PRACTICAL SIDE:

6.1. Biography

The Iraqi Company for Carton Industry and Trade (IICM), Purpose of the Iraqi Company for Carton Industry and Trade (known as Al Iraqiya for Carton Industry), has been a public company listed on Iraq Stock Exchange since July 2004. It operates within the materials sector, focusing on paper packaging. The



company is based in Baghdad, Iraq and was established on March 01, 1978

6.2. Financial indicators of the company's financial performance for the year 2021:

Return on equity	15.49%	Return on assets	(-35.77)%
Net profit growth rate	2,104%	Earnings per share	(0.07-)%
Total asset growth rate	(10.89-)%	Book value growth rate	10.46%
EPS growth rate	2,106 %	Net cash from operating growth rat	0

6.3. Analysis of the level of quality of costs and financial performance in the research sample:

axle number	Axle name	The overall mean of the axis		general direction
		SMA	standard deviation	
1	Quality preventive costs	4.22	0.323	Agree very much
2	Quality calendar costs	3.92	0.310	Agreed
3	Quality costs of internal failure	3.52	0.421	OK
4	Quality costs of external failure	3.95	0.348	Agreed
5	The opinions of the respondents regarding the financial performance clauses	3.18	0.407	OK

- From the above table, we note that the average for the preventive costs axis was 4.22, and the standard deviation is 0.323, i.e. less than one, which means that there is no significant dispersion between the (5) paragraphs of the questionnaire. We note that the results of the answers indicate that most employees agree with the need to pay attention to the safety of machines and equipment. Before starting work, take care of it and maintain it during work.
- We note the results of the answers of the sample members about the evaluation costs in the Iraqi Company for the manufacture of cartons, which is the second axis consisting of five paragraphs, and that the general average of the paragraphs of this axis amounted to 3.92 and a standard deviation of 0.310. This means that individuals are homogeneous in their response and agreement, and the tendency of workers to agree to all paragraphs. The axis includes the necessity of calculating the costs of testing the proposed product before putting it on the market, with an emphasis on calculating the costs of examining and auditing the raw materials used in production.
- The third axis shows the quality of the costs of internal failure of the company under study. It included five paragraphs, and the general average of the paragraphs of this axis amounted to 3.52 and a standard deviation of 0.421. Most results indicated that the employees agreed on the need for the company to calculate the costs of re-manufacturing damaged and defective products and the necessity of calculating sudden stop losses.
- The fourth axis shows the quality level of the costs of the external failure of the company under study. This axis included five paragraphs, and the general average of the paragraphs of this axis amounted to 3.95 and a standard deviation of 0.348, where the axis stressed the need to calculate the costs of lawsuits filed as a result of damages that affect the consumer as well as return losses Unsold or damaged products.
- The focus of analyzing the results of the respondents' opinions regarding the paragraphs assessing the financial performance, which represents the second part of the questionnaire and includes (6) paragraphs, and that the general average of the paragraphs of this axis amounted to 3.18 and a standard deviation of 0.407, which is less than one, which means that there is no significant dispersion in the paragraphs, as the axis emphasized that The necessity of investing in areas that achieve the most significant possible return, addressing previous financial failures, and



scheduling debts to achieve the company's needs and objectives.

6.4. Testing the hypotheses of the study:

Through this requirement, we test the hypotheses of the study first to test the central hypothesis Hypothesis test (T) Paired sample T-test, To judge the significance of the differences between the sample mean a preset fixed value. To test the hypotheses using the signal test, the following statistical hypothesis is tested.

-H0: the null hypothesis

- H1: the alternative hypothesis

If the calculated (T) is greater than the tabular (T), we reject the null hypothesis and accept the alternative hypothesis.

If (sig) is more significant than (0.05), we accept the null hypothesis, but if (sig) is less than (0.05), we reject the null hypothesis and accept the alternative hypothesis.

Table (2) The effect of quality costs on the evaluation of financial performance

the details		A.M	S.D	T calculated	C.O	Sig I.L
The effect of quality costs on the evaluation of financial performance	Quality costs	3.906	0.27	7.811	0.695	0.000
	financial performance	3.18	0.408			

Arithmetic mean= A.M , Standard Deviation=S.D
 Correlation coefficient= C.O , Indication level= I.L

The above table shows the impact of quality costs on improving the financial performance of the Iraq Carton Production Company. The statistical analysis results showed a statistically significant impact of quality costs on improving the company's financial performance.

The correlation coefficient reached 0.695, and the calculated T value was 7.811, which is a function greater than 0.05, compared to the tabular (T), which amounted to 2.046, which confirms the acceptance of the central hypothesis is incorrect. Statistically

significant for quality costs on improving the financial performance of the Iraq Carton Production Company at the 0.05 level.

Testing the types of quality costs in the evaluation of financial performance:

H0: "There is no statistically significant effect of prevention costs on improving the financial performance of IICM Company. T-test was used to verify the potential impact of prevention costs on improving performance, as shown in table (3)

the details		A.M	S.D	T calculated	C.O	Sig I.L
The effect of prevention costs on the evaluation of financial performance	prevention costs	4.22	0.323	11.000	0.784	0.000
	financial performance	3.18	0.408			

The results of the statistical analysis showed that there is a statistically significant effect of prevention costs on improving the financial performance of the company, The correlation coefficient was 0.784, and the calculated value was 11,000 T, which is a function at the level of $\alpha \leq 0.05$ compared to the tabular value of T of 2.046, and this confirms the incorrectness of accepting the first sub-hypothesis.

Therefore, it rejects the null hypothesis and accepts the alternative hypothesis, which states that prevention costs significantly improve IICM's financial performance at the 0.05 level.

H0: "There is no statistically significant effect of calendar costs on improving the financial performance of IICM Company. T-test was used to verify the potential impact of calendar costs on improving performance, as shown in table (4).



the details		A.M	S.D	T calculated	C.O	Sig I.L
The effect of calendar costs on the evaluation of financial performance	calendar costs	3.92	0.310	7.155	0.624	0.000
	financial performance	3.18	0.408			

The statistical analysis results showed a statistically significant effect of evaluation costs on improving financial performance, as the correlation coefficient reached 0.664. The calculated T value amounted to 7.155, which is a function at the level $\alpha \leq 0.05$ for the company compared to the tabular value T of 2.046. Therefore, the null hypothesis is rejected, and the alternative hypothesis is accepted, stating, "There is a

statistically significant effect of evaluation costs on improving the financial performance of IICM at the significance level of 0.05.

H0: "There is no statistically significant effect of internal failure costs on improving the financial performance of IICM Company. T-test was used to verify the potential impact of internal failure costs on improving performance, as shown in table (5).

the details		A.M	S.D	T calculated	C.O	Sig I.L
The effect of costs of internal failure on the evaluation of financial performance	costs of internal failure	4.21	0.352	3.091	0.466	0.000
	financial performance	3.18	0.408			

The statistical analysis results showed a statistically significant effect of internal failure costs on improving the financial performance of the IICM company, as the correlation coefficient amounted to 0.466. The calculated T value reached 3.082, which is a function at the level $\alpha \leq 0.05$ compared to the tabular T value of 2.046, and this confirms the incorrectness of accepting the hypothesis. Therefore, the null hypothesis is rejected, and the alternative hypothesis is accepted, which states that there is a statistically significant effect of internal failure costs on improving financial performance at a significant level.0.05."

7. RESULTS:

7.1. CONCLUSIONS:

1. In order to increase the level of quality, suitable materials should be used, advanced production equipment, and scientific and practical qualifications of workers, which is reflected in production costs and selling price.

2. Quality costs are one of the tools for continuous quality improvement by diagnosing failures and defects and procedures that contribute to reducing these defects.
3. The application of quality costs and its exemplary implementation has become a crucial indicator of improving the company's performance in general and its financial performance in particular.
4. The assessment of financial performance contributes to determining the resources used and thus is reflected in its financial position and the provision of quality components.

7.2 RECOMMENDATIONS:

1. The necessity of applying quality costs to ensure continuous improvement of products, and the discovery and analysis of the costs of defective products and their treatment, thus ensuring the quality of products and finding ways to reduce these costs.
2. The need to establish accounting courses specialized in organizing and analyzing quality



costs and calculating and documenting them to provide high-quality products, reduce costs and achieve customer satisfaction.

3. Measuring and clarifying the relationship between quality costs and financial performance by preparing analytical statements, especially with financial performance measures used.

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