

**THE EFFECT OF HUMAN RESOURCES ACCOUNTING ON THE SPECIFIC COSTS OF OIL PRODUCTS: AN APPLIED STUDY IN SOUTH REFINERIES COMPANY**

Sadiq Jafar Kathim 1  
dw.sad23@atu.edu.iq

Nadhim Khasran Hassooni Al Shaibani 2  
nadhim.hassooni@atu.edu.iq

Samaher Sadeq Ali AL- Gburi 3  
samaher.ali.idi2@atu.edu.iq

1 2 3 AL -Furat AL -Awsat Technical University, Technical Institute of Dewaniya, Iraq.

**Abstract**

In order to produce high-quality products with competitive specifications, human resources training programs must be developed and paid attention to very significantly through two executors, either selling these products at prices higher than the prices of competing products in the market or reducing costs related to production, and this ultimately leads to an increase in profits per unit, hence the need to pay attention and recognize the great role played by human resources in all economic aspects and take into account accounting for human resources.

From this side, the current research dealt with human resources accounting and its impact on qualitative costs, has been determining the specific costs in the South Refineries Company for Petroleum Products and then a statement of the reality of training and development in the company has reached the research a set of conclusions, the most important of which is that 70% of the economic units do not have full know-how and access to the concept of qualitative costs and their constituent elements and thus the role of human resources accounting in benefiting from trained human resources to perform work with the highest levels of efficiency and speed possible and qualitative The most important recommendations of the research are the need to support studies, research and conferences related to human resources accounting and qualitative costs and the need to develop appropriate training programs for different specializations and follow up their implementation and evaluation, which achieves optimal investment of the costs related to them..

**Introduction**

All products in this era are looking for an economy based on technological development at a high level and advanced technologies resulting from modern and advanced scientific discoveries, so it was necessary to pay attention to the level of quality of products and the requirements of this quality of costs, which is called quality costs, as many international companies have studied and analyzed these costs and developed special programs that are difficult to reduce to the lowest possible extent in order to achieve many benefits and economy in these costs and guide The process of making decisions related to this.

Based on the foregoing, the economy in qualitative costs is in many ways, all of which aim to reduce errors and prevent them before they occur and with effective, intensive and elaborate training can achieve the goal of achieving the highest quality and lowest cost, hence the recognition of the great and important role played by human resources in the economy of countries, which led to the activation of research and studies aimed at the formation and development of scientific principles and accounting systems for accounting for investment in human resources and this is known as human resources accounting, The main purpose in accounting for human resources is to consider spending on the development and formation of human resources as investment spending, as the human resource, its skill, knowledge and ability to work are among the most important factors that affect the success of the economic unit in the short term and enhance its capabilities to survive, continue and compete in the long term, The development of human resources training programs and attention to them will help in the production of high-quality products that achieve the unit a competitive advantage either by selling products at prices higher than the prices of similar products in the market and reducing production costs, which ultimately lead to a rise in the profits of the unit, and for the purpose of achieving the goal of the research, it has been divided into four sections, the first was allocated to qualitative costs, the second dealt with human resources accounting and its impact on qualitative costs, or the third was allocated to the application of the repercussions of resource accounting Human on the specific costs in the South Refineries Company or the fourth was for the conclusions and recommendations that were reached in the light of the theoretical and practical study.

## **PART ONE: STUDY METHODOLOGY**

### **First, Study problem**

The problem of research is the lack of interest in human resources accounting and its impact on qualitative costs, which leads to the lack of optimal use of material and human resources.

### **Secondly: the importance of Study**

The importance of the Study lies in highlighting the accounting of human resources and demonstrating its impact on the cost of quality, as the human element trained effectively is able to complete the work with the highest degrees of efficiency, quality and speed, which saves a lot of time and cost.

### **Third: the objective of Study**

Statement of the impact of human resources accounting on qualitative costs and its reflection on reducing production costs and increasing product quality.

### **Fourth: the hypothesis of Study**

There is a significant relationship between human resources accounting and its role in benefiting from trained human resources and producing high-quality products at the lowest cost.

### **Fifth: sample of Study**

The southern refineries company, which is one of the public sector companies affiliated with the Ministry of Oil, was chosen for the research, for the effective and large role of this company by producing many oil products that are directly prejudice to citizens and with a great impact in the national economy, as the qualitative costs in this company were identified and distributed to oil products Which contributed to identifying the locations of the palaces in it and then proposing the appropriate solutions to them.

## **PART TWO: THEORETICAL SIDE**

### **1. Specific Melisma**

**1-1- The concept of quality:** Quality is one of the goals of the modern industrial environment and is the key to competition in the markets as the customer focuses on quality products that meet his demands.

The American Society for Quality Control has been defined as the set of qualities and characteristics that affect the ability of a product or service to meet the needs of the customer (KOTLER, 2017, 5.4)

There are those who believe that quality can be determined through the factors affecting it, namely the quality of design and the quality of congruence. (RUSEEL, 2018, 79)

The quality of the design means the suitability of the product or service to the needs and desires of the customer, which is an important part of the production process, so the quality must aim to satisfy his current and future needs.

As for the quality of conformity, it means that the performance of the product or service is in accordance with the design and production specifications, and that many companies worldwide have focused on quality as an important strategic dimension, because quality focuses on reducing costs and increasing consumer satisfaction (Hajjaj, 2009, 78).

From what has been mentioned, it can be said that quality means suitability and conformity of the product to the specifications and objective characteristics in a way that meets the needs and desires of the customer and at the lowest possible cost.

### **2-1 The concept of quality costs:**

The concepts of quality costs have developed over the past six decades, as many units have been able to achieve significant cost savings through analyzing quality costs and knowing the percentage they constitute of production and sales costs. Numerous definitions of quality costs have been provided. According to British Standards (Bs), they are known as The cost of ensuring quality in addition to loss and damage when the quality is not achieved or obtained (WWW.ARABICSTAT.COM)

It is also defined as the costs arising for the purpose of preventing defects or treating low-quality products (ETHORNGRENAL, 2015, 692) and here who believes that they are the costs associated with or related to not obtaining products or services conforming to specifications in a correct way since the first time (Al-Fadl and Muhammad 2016, 250) from what was mentioned It can be said that the quality costs are represented by the amounts spent for the purpose of preventing defects in the products produced by the economic unit or that they are the amounts

spent due to the production of products that do not conform to the required specifications Hence it must process and correct these products.

### **3-1 Elements of quality costs:**

Qualitative cost elements constitute different percentages of sales and production, depending on the nature of the industry, as surveys indicate that complex and large industries have high quality cost ratios, as they constitute more than 20% of sales, while in simple industries they constitute less than 2% of sales, and it was found that the large percentage of these costs is the cost of failure, either the cost of prevention constitutes a very small percentage compared to the cost of failure (APILANO.ET. AL,131,2017) In general, the specific cost elements are:

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

It is the costs that reduce or exclude the production of certain goods or provide service less than the standard level and believes (Dilworth) that the best way to make the costs of quality low is to produce a good product from the beginning and then avoid the costs arising from the poor quality companies have found that the costs of prevention is less than the cost of correcting defects after their occurrence (DiL, woRTh.412, 2013).

#### **Second: Evaluation Costs:**

They are the costs associated with measuring, evaluating, auditing and examining products or resources to ensure their compliance with quality requirements or standards and specifications followed, as they are the value of any effort to find and determine the degree of conformity to quality specifications during production for the first time (Alishoni, 2015, 10)

#### **Third: The cost of internal failure:**

They are the costs incurred by the unit as a result of quality problems discovered before the product reaches the customer (Al-Hussein, 182, 2007).

#### **Fourth ': The cost of external failure:**

It occurs in the event that the products fail in customers, meaning that they are the costs that the economic unit bears after the delivery of defective products to customers (Heizer & Render.2001,137)

The calculated quality costs represent an important part of the costs of external failure, such as the lack of market share as a result of the loss of customers and sales (2004: yuAN.ET.AL.13);(HORNGREN) believes that these costs are excluded from the elements of specific costs because they are not recorded in the books according to financial accounting systems and they are difficult to account and measure (HORENG, ET, AL, 2019: 695) Figure (1) shows the elements of quality costs.

Figure (1) Elements of quality costs

Prevention costs	Cost of evaluation	Internal failure cost	Cost of external failure
Specific Engineering	Inspection and testing of incoming materials	Damaged	warranty
Design and development of devices and quality equipment	Inspection and testing during production processes	Re -working	Repair of the returned product
Quality planning for any job outside the scope of quality control	Final Inspection and Testing	Damaged and re-working due to the suppliers	Allowed
Quality Training	Quality Audit	Comprehensive examination	Legal issues
Evaluation of the quality of suppliers	Materials and services consumed in the inspection and testing process	Re-examination and testing	
Other prevention costs	Maintenance and evaluation of inspection and testing equipment	Low quality grade of product	
	Inventory Valuation		

Source: Authored by researchers

**4-1 Benefits of Specific Cost Data:** (Al-Dhahabi and Al-Zubaidi, 2010, 11)

- 1- Determining the financial importance: Through this, it is possible to identify expected and unexpected problems in advance, which enables the allocation of the necessary resources and in the appropriate topics.
- 2- Quality cost information helps in improving production processes and evaluating performance in order to achieve the optimal level of quality costs at the lowest point, the higher the cost of prevention and evaluation, the cost of internal and external failure will decrease, which leads to reducing the cost of quality until it reaches the lowest point, as shown in the figure below.

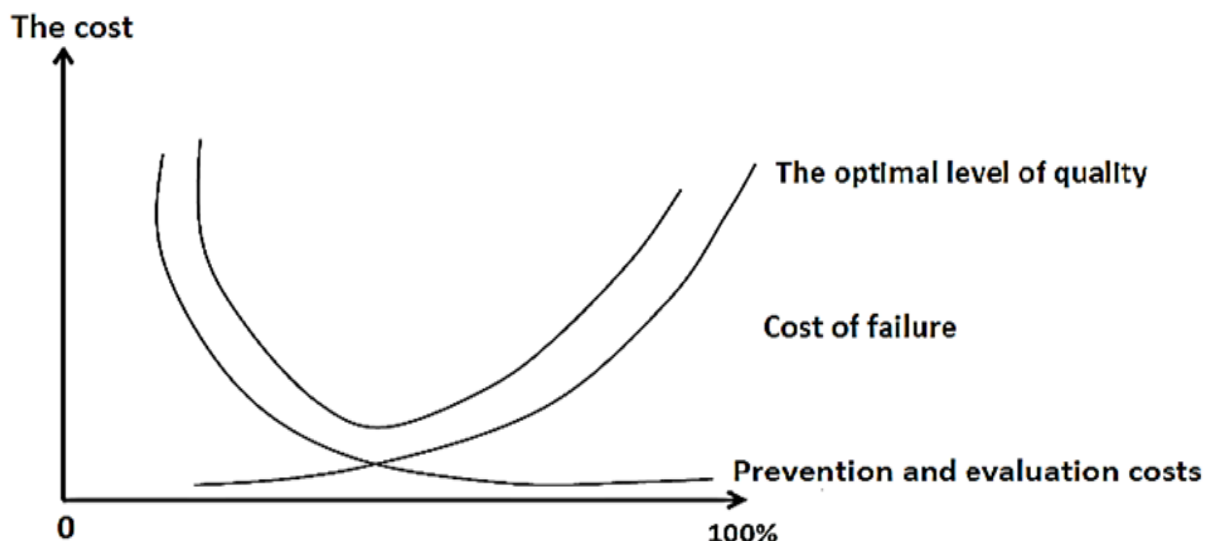


Figure (2) Form A: Traditional style

Source:- (Hilton, Ronaldo, Management 4, Trwin \_ Hill.2010, 498)

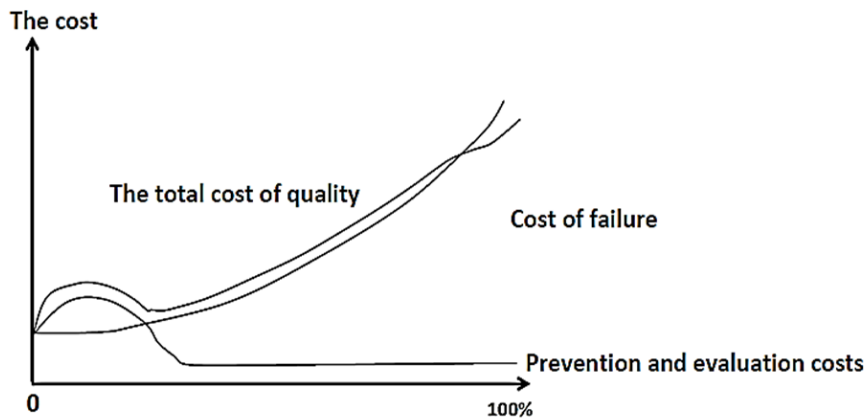


Figure (2) Form B: Traditional style

Source:- (Jackson, Steve & sawyers, Roby, 2010, 370)

We note from the above figure model (a) that the optimal level of quality is not achieved at the level of 100%, but occurs at a level lower than that and that any increase in the costs of prevention and evaluation is uneconomical and leads to an increase in qualitative costs despite the low cost of failure, has tried some Japanese companies and later American companies to obtain a level of quality 100% believing that the increase in sales and market share results from increasing customer confidence in the quality of their products, where it was noted from The traditional relationship between the elements of qualitative costs does not reflect the increase in sales and market share that results from the high quality of products, that is, when the unit focuses on improving quality, the costs of prevention and evaluation will decrease due to technological progress as well as because of the development of the completion of operations, which result from quality improvements, as can be seen from the previous figure model (B), where it is noted that the lowest cost occurs at the level of quality 100%, so the economic units that seek to achieve the level of zero defective enjoy At a level distinct from its competitors (Al-Fadl, 2008, 37).

## 2. Accounting for human resources and its impact on specific costs:

The success of economic units in achieving their goals requires human labor at a high level of education, training and experience in the fields of specialization, as the trained worker is able to complete the work with the highest levels of efficiency, quality and speed that saves a lot of time and cost. Hence, the recognition of the great and important role played by human resources in the economy of any country was what attracted attention towards accounting for human resources. Human resources accounting has gone through many stages of distinguished development, including the following: (Hamada 2002: 146) (Flamholz, 2005, 16).

**-The first stage:** extends from the beginning of the sixties until 1966 and is characterized by the development of the basic concepts of accounting for human resources using theories and principles related to this subject in other social sciences.

**-The second stage:** It extends from 1966 to 1971 and is characterized by a period that created and evaluated the effectiveness of the model for measuring the cost and value of human resources and a period that created current and future areas for the uses of accounting for human resources in some organizations as the (wilom) suspended his research measuring the historical value of the cost of human resources on the company (R.J.BARRY) as the company published for several years its final financial statements, including financial information about human resources.

**-The third stage:** extends from 1971 to 1976, during which many academic studies were published in America, Australia and Japan, and many of these researches have been applied on the impact of information provided by accounting for human resources in making administrative decisions as well as in the decisions of investors from shareholders.

**-The fourth stage:** It extends from 1976 to 1980, as it witnessed a decline in interest in this branch, whether by academics or by applied people, and the reason is that the largest part of the primary research in this field, which is less difficult, extends in the previous stages and that the remaining parts are more difficult and require quite a few institutions and companies that accept that these researches are applied within them and as a result of the small number of researchers who are able to do this, the number of research in this period It was also little, which led to the lack of interest of companies on the application, in addition to the fact that the costs of applying this system are high and the expected return from them is uncertain.

**-The fifth stage:** It is the current stage of development, it has witnessed the beginning of the revival of marginal interest in both theory and practice of accounting for human resources as a result of the increasing interest of the United States of America in the subject of increased productivity and this attention focused on the role of the human element in increasing productivity, which attracted attention towards accounting for human resources in addition to increasing competition between the United States and Japan in the field of industry and the difference in the management of Japanese companies for human resources from their American counterparts in addition to increasing interest in accounting methods and systems About Human Resources This stage has witnessed the application of accounting for human resources to large companies and institutions, unlike the case in the early stages of development, where the application was limited to small and medium-sized companies.

### **2-1 The concept of accounting for human resources:**

Business organizations spend money in order to attract, select, appoint and train individuals. This money is considered in the form of investments in people and not current spending. Rather, some units spend more on these investments in people than they spend on their investments in Machinery and equipment,

The American Accounting Association defined it as the process of identifying, measuring and communicating information about human resources to decision makers (Hanan, 2013, 207). It was also known as the process of determining the value of human resources and knowing how to treat them and then identifying the changes that occur to them to show the true value of the

assets. humanity and providing the parties concerned with this information (Al-Qadi, Hamdan 2010: 137)

**Based on the above, it can be said:** Human resources accounting is the process of measuring, recording, and analyzing the costs that were spent in order to collect, develop, train, and replace human resources in the economic unit, and monitor the changes that occurred. It is affected over a period of time by providing the necessary information and data to assist management in decision-making processes regarding the workforce, such as increasing skill by applying educational programs.

## **2-2 The importance of accounting for human resources:**

The importance of accounting for human resources comes through the importance of human resources in economic units and the important resource it constitutes among its resources that are used in their economic operations, due to any other important resources in those units and can contribute to achieving their goals and accordingly, accounting for human resources is to achieve goals The following:- (Al-Hayali, 2012: 290)

- 1- Assisting management and external parties in making decisions related to planning, use and control of human resources.
- 2- Provide the administration with information on the actual costs of bringing in and developing human resources, whether by adding new resources or developing existing resources.
- 3- Assisting in the preparation of planning budgets for the costs of acquiring, developing and developing human resources.
- 4- Helps to use the available human resources efficiently and effectively.
- 5- Preparing the necessary training programs to raise the skills and capabilities of individuals, including the costs of these programs and the expected return in return.
- 6- Determining the return that the project obtains from human capital and evaluating investment decisions in the workforce by comparing the cost with the benefit of the various alternatives.

## **2-3 Measuring the cost of human resources:**

Several methods are used in the evaluation of human resources, each of which has its advantages and disadvantages, and the following are the most important methods that dealt with the evaluation of human resources (Al-Shabani et al., 2017: 176) (Amara and Masoud, 2014: 135).

### **1- Historical cost method:**

Under this method, everything related to human resources is proven from the costs of calling, selection and delivery of the individual to work, rehabilitation and training and sees (Flameholz) that some of these costs are considered a direct cost in that others consider them indirect, for example, the value of the salary of the trainee is a direct cost for the process of training while the cost of the supervisor of this trainee during the training phase indirect cost (Aflamholz, 1992: 98)

These costs are capitalized in preparation for distribution to the expected productive life of workers and determine the annual consumption premium and in the event of the consumption of



the asset and excluded from production before the specified period for it is the remaining value of a loss borne at the expense of profits and losses. Despite the advantage of this method of objective ease in expressing the value of assets to the cost of human resources, but it has been subjected to several criticisms, including:

- a - The changes in the cost of human resources over time and the knowledge and experience gained do not clarify.
- b - Do not lead to any comparable values because of the cost of obtaining human beings and the cost of learning varies from person to person within the economic unit.
- c - Do not take into account price changes at the time of inflation and thus the variation in the economic value of human resources.

### **2- Method of substitution:**

This method depends on the idea of job replacement or the person who expresses the sacrifice made by the company in order to replace human resources with an alternative to the current and this method is characterized by being a good alternative to the economic value as it takes into account market price changes as well as helps in the planning process by providing estimates of the costs of obtaining workers for different jobs and this method is flawed as follows:

- a - The cost of a particular person in relation to the economic unit shall be higher than the cost of his allocated replacement.
- b - It may not be available to a particular human resource the cost of replacing an equation for it.
- C - Lack of a market for the sale and exchange of persons.

### **3 - The way of missed opportunity:**

This method is represented in the total cash flows that are sacrificed in order to direct a resource from a use to another alternative use and for human resources, the cost of lost opportunity is the lost value of allocating a person in a particular job without the other, and this method helps to distribute human resources to alternative uses as well as lays the foundation for planning and development of human resources and is faulted for this method that it cares about highly qualified people that make demand for them more than supply, which is Thus, it depends on the financial value of the various gains expected from the use of a person in order to determine the value of the human resource.

### **4 - The way of invested fame:**

It is based on the idea of calculating the increase in ordinary dividends from their prevailing rates and capitalizing that increase as representing the value of human resources and one of its disadvantages is that it ignores the action of other factors that contribute to achieving extraordinary profits and does not show how the value of human resources will be determined in the event that profits are not achieved in a given year.

#### **2-4 The impact of human resources training on quality costs:**

The development of human resources training programs and attention to them will help in the production of high-quality products that achieve a competitive advantage for the unit, either by selling products at prices higher than the prices of similar products in the market or reducing production costs, which ultimately lead to a rise in the unit's profits.

Training is the process of providing individuals with the information, skills and expertise necessary to perform their work effectively, and there are several levels of training, including training new employees, on-the-job training, or renewing information to acquire new skills in their field of specialization or retraining them to occupy higher positions, and training achieves several advantages (Al-Kalaldehy, 2019: 105).

- 1- Improves the performance of the individual and this is reflected in increasing productivity and improving quality at the lowest cost, the least effort and in the shortest time.
- 2- Keeping pace with the rapid technological and organizational developments of the new developments.
- 3- Training reduces the need for supervision
- 4- Training improves the services of the economic unit and the way of presenting the goods produced.
- 5- Training leads to a reduction in work accidents.

Therefore, we believe that if close coordination is established between planning, training and human resources development, the human resources training system will be able to achieve its most ambitious goals and after ensuring that the economic unit obtains the qualified staff it needs in a timely manner through the training process in the era of advanced technology day after day.

#### **2-5 Training Cost:**

The costs of training include both direct costs such as trainees' salaries and indirect such as lost productive costs during the training period, as it is the cost of lost performance for workers other than the trainee himself, where the productivity of other individuals who deal with the trainee during work and until his productivity reaches the required level, and the cost of the trainee's supervisor during the training phase is considered an indirect cost (Al-Fadl, Moayed, 2013, 201) Determining the economic returns of training programs using accounting methods is important for the following reasons (Abbas 2019: 243).

- 1- Determining the total expenses of training, both direct and indirect.
- 2- Comparing alternatives to training programs.
- 3- Analyzing the percentages of spending on various activities and stages of training such as design, management, evaluation ..... Etc.
- 4- Comparing the cost of training for different groups of workers, whether according to the administrative class or the type of activity ((sales representatives versus production workers, for example))
- 5- Achieving control over training.

**PART THREE: HUMAN RESOURCES ACCOUNTING AND ITS IMPLICATIONS ON THE COSTS OF QUALITY:**

This section aims to apply and test the methodology of the impact of human resources accounting in the cost of quality in (South Refineries Company), which is one of the public companies affiliated to the Ministry of Oil with a capital of (496) four hundred and ninety-six million dinars, which aims to contribute to supporting the national economy in the field of oil sector through the liquidation of crude oil and the production of various petroleum products (gasoline, white and black oil, jet fuel, oils, fats, wax, grease and asphalt) and for the purpose of achieving this research has been The following procedure:

**First, determine the elements of quality costs:**

By referring to the company's records for the year ended 31/12/2018 before the Corona pandemic, related to financial accounts and cost accounts, and after analyzing them, the following costs were counted:

**Prevention costs amounted to (1382226000)****Table 1 Prevention costs for the period from 1/1 to 31/12**

Elements of prevention costs	amounts (dinars)	percentage
Specific Engineering	787868820	57%
Hardware Design & Development	221156160	16%
Quality Planning	234978420	17%
Quality Training	27644520	2%
Other prevention costs	110578080	8%
<b>Total</b>	<b>1382226000</b>	<b>100%</b>

Source: Preparation of the researcher

**2- The cost of the evaluation: - amounted to (2131040000) and shown in the table.****Table No. (2) The cost of the evaluation**

Elements of evaluation costs	Amounts ( JD )	percentage
Inspection & Testing	1674832000	79%
Quality Audit	456208000	21%
<b>Total</b>	<b>2131040000</b>	<b>100%</b>

**3- The cost of internal failure: - and amounted to (16568494430) as shown in the table****Table No. (3) Cost of internal failure**

Internal failure cost elements	Amounts ( JD )	percentage
Replay defects	15335014880	92%
Defect analysis	333232780	2 %
Laboratory tests	616739770	4 %
Re-examination and testing	283507000	2 %
<b>Total</b>	<b>16568494430</b>	<b>100%</b>

Accordingly, his conclusion cost quality, as shown in Table No. (4) was as follows:

- 1- The whole internal failure has accounted for 82% of the total costs.
- 2- The cost of evaluation has constituted 11% of the total costs.
- 3- The cost of prevention has constituted 7% of the total costs.

**Table No. (4) Summary of quality costs**

Quality costs	Amounts ( JD )	percentage
Prevention	1382226000	7 %
Evaluation	2131040000	11 %
Internal failure	16568494430	82 %
<b>Total</b>	<b>20081760430</b>	<b>100 %</b>

### Second: Allocation and distribution of quality cost elements on petroleum products

**Table (5) The basis for the distribution of quality cost elements on petroleum products**

Elements of specific cost	Distribution basis	The total	Petrol	Liquid gas	White oil	Gas oil	Diesel oil	Fuel oil	Fat	Candles	Grease	asphalt
Specific Engineering	Chemical Retail	100%	0,1	0,05	0,07	0,05	0,05		0,485	0,055	0,08	0,04
Hardware Design & Development	Chemical Retail											
Quality Planning	Chemical Retail											
Quality Training	Chemical Retail											
Other prevention costs	Chemical Retail											
Inspection & Testing	Number of examinations	2969340	890805	356320	149190	147750	145470	89075	452335	213795	2595000	263100
Quality Audit	Number of production units	33294750	8840445	1362625	3456410	3522885	199410	3456415	9305730	365580	764400	1960850
Replay defects	Amount of waste	421960							400860		21100	
Laboratory tests	Customized								5282200			
Re-examination and testing	Customized	42875325							42875325			

As can be seen from the table above, the basis for the distribution of prevention costs is the chemical fractionation of crude oil, as for the cost of evaluation, the basis for the distribution of inspection and testing costs is the number of tests and the basis for the distribution of quality audit costs is the number of production units, while the basis for distributing the costs of re-defect is the amount of waste, and with regard to the cost of laboratory tests and the cost of re-examination and testing, it is considered directly on the fat product.

### Third: Determining the quality costs of petroleum products

Based on the above, the following tables show the specific costs of light and heavy petroleum products.

Table No. (6) Specific costs of light petroleum products

Elements of specific cost	Petrol	Liquid gas	White oil	Gas oil	Diesel oil	Fuel oil	Light Products
Prevention costs	787868880	39394440	5551508220	39394440	39394440	157573780	2678754200
Specific Engineering							
Design and development of qualitative devices	22115680	11057810	14580930	11057810	11057810	4423120	75193160
Quality Planning	23497840	117848920	16448490	117848920	117848920	4699570	79892660
Quality Training	2764450	1382230	1935120	1382230	1382230	558290	9399150
Other prevention costs	11057810	5528900	7740470	5528900	5528900	2211560	37596540
Total prevention costs	847304660	423652300	610529230	423652300	423652300	164460920	2898251710
Prevention cost ratios	0 , 57	0 , 65	0 , 82	0 , 75	0 , 79	0 , 63	0 , 68
Cost of evaluation	502449600	200979840	83741600	83741600	83741600	502449600	1004899200
Inspection & Testing							
Quality Audit	123176160	20529360	45620800	50182880	27372480	45620800	312502480
Total evaluation costs	625625760	221509200	129363400	133924480	111114080	95865760	1317401680
Ratios of evaluation costs ÷ quality costs	0 , 43	0 , 35	0 , 18	0 , 23	0 , 21	0 , 37	0 , 32
Total quality costs	1472930420	645161500	379891630	557576780	534766380	265326680	4215653390

Table No. (7) Specific costs of heavy petroleum products

Elements of specific cost	Fat	Candles	Grease	asphalt	Heavy Products
Prevention costs	382116380	433327890	63029500	315147550	5199934620
Specific Engineering					
Design and development of qualitative devices	107260740	12163590	17692490	8846250	145963070
Quality Planning	113964530	12923810	18798270	9399140	155085750
Quality Training	13407590	1520450	2211560	1105780	18245380
Other prevention costs	53630370	6081790	8846250	4423120	72981530
Total prevention costs	670379610	466017530	110578070	338921840	5592210350
Ratios of prevention costs / quality costs	0 , 39	0 , 95	0 , 1	0 , 96	0 , 25
Cost of evaluation	251224800	16748320	150734880	8374160	427082160
Inspection & Testing					
Quality Audit	127738240	4562080	9124160	2281040	143705520
Total evaluation costs	378963040	21310400	159859040	10655200	570787680
Ratios of evaluation costs ÷ quality costs	0 , 22	0 , 05	0 , 15	0 , 04	0 , 02
Internal failure cost					
Replay defects	14884761010	—	383486650	—	15668247660
Laboratory tests	616739770				
Re-examination and testing	28350700				
Total internal failure costs	15785007780				
Total quality costs	1683435430	487327930	1053923760	349577040	21831245690

Based on what has been mentioned, knowing the size of what the quality cost of oil products represents is an insufficient indicator unless it is compared with other bases such as direct working hours, cost or manufacturing cost, and the basis of the cost of production will be used in the research sample company because it deals with the delivery of its products to companies and consumers at cost and based on the Companies Law No. 22 of 1997 and Table No. (8) below shows that.

**Table No.( 8 ) Ratio of quality costs / production costs**

<b>Products</b>	<b>Quality cost</b>	<b>Production costs</b>	<b>Ratio of quality costs / production costs</b>
Gasoline	1472930420	50967059400	0 , 02
Gas is a liquid	645161500	7803824600	0 , 08
White oil and gas	739891630	19749772700	0 , 03
Gas oil	557576780	19859854800	0 , 02
Diesel oil	534766380	1235624600	0 , 43
Fuel oil	265326680	20050815000	0 , 01
Total	4035653390	119666951100	0 , 01
Fatness	1683435430	54162513400	0 , 03
Wax	487327930	2197696900	0 , 22
Grease	1053923760	4485989100	0 , 23
Asphalt	349577040	11409954900	0 , 03
<b>Total</b>	<b>21831245690</b>	<b>72256154300</b>	<b>0 , 3</b>
<b>Grand total</b>	<b>20081760430</b>	<b>191923105400</b>	<b>0 , 1</b>

As can be seen from the above table, the ratio of quality costs to production costs in the research sample company is (0.1) either in light petroleum products it amounted to (0.01) while the ratio increased in heavy products where it reached (0.3) As previously shown, the reason for the high cost of quality in the company research sample for petroleum products in general and heavy oil products in particular is due to the high cost of internal failure, which required intensifying efforts towards training programs as well as studies And research in the field of quality due to its great role in achieving many savings by reducing the cost of failure and then reducing the total cost of quality.

### **The reality of training and development in the South Refineries Company**

The human element is of great importance in business organizations, which leads the rest of the elements of the project, the most important of which is financial resources, which also represents the main element in bringing about organizational changes and changes necessary to raise efficiency and performance in the organization, the training process has become the decisive element in the efficiency and effectiveness of various types of organizations of different sizes, activities and goals, and the nature of work within different organizations requires that the human resources working in them be highly efficient in the performance of work and not There is doubt that the current education systems, curricula and programs and the slow change, development and modernization make them unable to transfer and follow up the technology of the times and

its variables and thus their inability to provide the needs of the labor market and its changing requirements where the skills and technology necessary to keep pace with this development, and therefore training has a great deal of flexibility and response to these changes, and training has an important role in preparing appropriate human cadres in terms of the ability to absorb science technology, technical skills and technical and scientific and practical practices at faster rates In order to be in line with the continuous and sequential development needs, concepts and dimensions to achieve greater development capabilities.

With regard to the reality of training and development in the company, the research sample organizes the training department in the company training courses in all administrative, engineering and technical fields in order to develop the reality of quantitative and qualitative production through production units implemented within the work sites, which requires the rehabilitation and development of human cadres that stand on the management of the field in all these sites, especially engineering cadres, where the engineer is a leader in the management of the production unit and he must make the correct and accurate decision within the liquidation units Which adopts a very accurate work system, and there is a program for the qualification of new engineers, which aims to provide practical experiences for workers in the South Refinery in order to develop the skills of engineers and follow up on developments in the field of specialization, and the course is completed for the first engineers outside the country.

The following are sample reports proposed for the costs of obtaining human resources and the costs of training and development, distributed according to specializations, with a statement of their impact on the income statement and the statement of financial position

The proposed report of the costs of obtaining human resources distributed according to the competencies at the company level for the period from        to

<b>Cost elements</b>	<b>Engineering Specializations</b>	<b>Administrative specializations</b>	<b>Technical Specializations</b>	<b>Total</b>
<b>Job Advertising Costs</b>				
<b>Recruitment costs</b>				
<b>Test costs</b>				
<b>Rental costs</b>				
<b>Other</b>				
<b>Total</b>				

The proposed report of the costs of training and development distributed according to the terms of reference at the company level for the period from ..... To.....

<b>Cost elements</b>	<b>Engineering Specializations</b>	<b>Administrative specializations</b>	<b>Technical Specializations</b>	<b>Total</b>
<b>Training within the company</b>				
<b>Training outside the company</b>				

**List of income proposed for the year ending in**

Net Sales	xxx
Cost of goods sold	(xxx)
<hr/>	
Total Profit	xxx
Selling and marketing expenses	(xxx)
General and administrative expenses	(xxx)
<hr/>	
Net Operating Profit	xxx
Other expenses (xxx)	
<hr/>	
Net profit before human resources (subtracts)	
HR expenses allocated for future operations	
Advertising Fees	(xxx)
Recruitment Fees	(xxx)
Exam Fees	(xxx)
Training Fees	(xxx)
Transportation Expenses	(xxx)
Housing expenses	(xxx)
Other	
Human resource losses	
Skills obsolescence	(xxx)
Leaving service	(xxx)
Deteriorating health	(xxx)
Depreciations	(xxx)
Net profit	xxx

**Proposed statement of financial position as in.....**

Assets	
<hr/>	
Long-term assets	xxx
<hr/>	
	xxx
<hr/>	
	xxx
<hr/>	
Current assets	
<hr/>	
	xxx
xxx	<hr/>
Intangible assets	
<hr/>	
The fame of the shop	xxx



Patent	xxx	
Human resources	xxx	
Other assets	xxx	
Total assets		xxx
Liabilities		
<hr/>		
Current liabilities		
<hr/>		
Long-term loans	xxx	
Property rights	xxx	
Capital	xxx	
Retained earnings	xxx	

## PART FOUR: CONCLUSIONS AND RECOMMENDATIONS

### • Conclusions

- 1- Most economic units consider spending on human resources as current spending and not investment, and as a result, there are no lists of their own that can be used for different purposes.
- 2- Most of the economic units do not have sufficient knowledge and knowledge of the concept of quality costs and their constituent elements, because most of these costs appear within the operational expenses and as a result, there are no reports on the cost of quality.
- 3- There is no basis in the research sample company to identify and classify the elements of quality costs, which is reflected in the lack of its own measurement method and reports that can be used for different purposes.
- 4- The elements of the cost of quality in the company sample research costs of prevention, evaluation costs, cost of internal failure, but with regard to the cost of external failure, there is no such type of cost due to the nature of oil products and the lack of legal claims on the products currently on the company research sample.
- 5- the ratio of the cost of prevention to the total cost of quality at the company level was (7%), the cost of evaluation was ( 11%) and the cost of internal failure was ( 82%)
- 6- the ratio of the cost of prevention to the total cost of quality of light and heavy oil products is as follows :- gasoline ( 57%), liquid gas ( 65%), white oil ( 82%), gas oil ( 75%), diesel oil ( 79%), fuel oil ( 63%), fat ( 22%), wax ( 5%), grease ( 15%), asphalt ( 4%)
- 7- the ratios of the evaluation cost to the total quality cost of light and heavy oil products are: - gasoline ( 43%), liquid gas ( 35%), white oil ( 18%), Gas Oil ( 25%), diesel oil ( 21%), fuel oil ( 32%), fat ( 22%), grease ( 15%), wax ( 5%), asphalt (4%)
- 8- light oil products do not have internal failure costs, but in heavy oil products, it appeared in the fat and grease products, and it accounted for a large percentage in the fat product, reaching ( 90% ) and with respect to the grease product ( 10%)
- 9- the ratio of quality costs to production costs was as follows :- gasoline ( 2%), liquid gas ( 8%), white oil ( 3%), gas oil ( 2%), diesel oil ( 43%), fuel oil ( 1%), fat ( 3%), wax ( 22%), grease ( 23%), asphalt ( 3%), total heavy products( 3%), company-wide( 1%)

**10-** the company does not spend enough on preventive programs, especially with regard to heavy oil products.

**11-** human resources accounting has a role in achieving many advantages, the most important of which is to take advantage of trained human resources to perform work with the highest degrees of efficiency, quality and speed.

**12-** most of the human resources working in the company, the research sample enters training courses that have nothing to do with their field of specialization in order to change their job title, which leads to the company bearing the cost of providing and investing.

### Recommendations

1 - the development of human resources training programs and attention to them will help in the production of high-quality products.

2 - human resources are the wealth not only of economic units, but of the state itself, and whenever their skills are upgraded, this leads to a contribution to economic progress.

3 - the need to develop training and development systems, curricula and programs in order to keep abreast of technical and technological developments in the research sample company.

4 - strengthening studies and research in the field of human resources accounting and assigning quality in order to identify them first and then conduct the necessary studies to address them, as well as coordination between the research departments, quality control and accounting departments in light of this in the company research sample.

5 - the need to separate the expenses related to human resources in separate lists so that they can be counted and measured accurately, which contributes to making more effective decisions regarding those resources.

6 - the need to work on determining the cost of quality and the statement of its constituent elements and then prepare its own accounting reports in order to make it possible to identify deficiencies in any type of cost of quality and take appropriate solutions in a timely manner.

7 - attention to the costs arising from external failures, which requires identifying the items of the elements that make up these costs and imposing the necessary control over them.

8 - focus on preventive programs ( cost of prevention ) and work on their development because of their great importance in achieving many benefits and reducing mistakes and defects.

9 - the need to develop appropriate training programs for various specializations and follow up on their implementation and evaluation, which makes it possible to invest their own costs in the research sample company.

### Sources

#### First, Arabic sources

##### A- Laws and Instructions:

1. Republic of Iraq, Companies Law No. 22 of 1997, Iraqi Gazette No. 3685 of 1997.
2. The Republic of Iraq, the Ministry of Oil, the General Establishment for Oil Refinery in the Central Region, Dora Refinery, Total Cost Statements of Products for the year 2009.

**B – Books:**

1. Al-Hussein, Muhammad Bedaiwi (Introduction to Production and Sales Management) Dar Al-Manhaj for Publishing and Distribution.
2. Al-Hayali, Walid Naji, (Studies in Contemporary Accounting Problems), Dar Al-Hamid for Publishing and Distribution, Amman, Jordan,
3. Al-Kalaldeh, Taher Mahmoud, (Recent Trends in Human Resources Management) Dar Al-Yazoudi for Publishing and Distribution, Amman,
4. Al-Fadl, Muayad Muhammad, Muhammad Hakim Mohsen, (Production and Operations Management: A Quantitative Approach with a Current Study), Dar Zahran for Publishing and Distribution, Amman,
5. Al-Qadi, Hussein Hamdan, Mamoun (Accounting Theory) First Edition, Amman, International Scientific House for Publishing and Distribution, Dar Al-Thaqafa for Publishing and Distribution,
6. Hanan, Radwan Helweh, (Alternatives to Contemporary Accounting Measurement) First Edition, Dar Wael Publishing, Amman, Jordan,
7. Abbas, Anas Abdul Basit, (Human Resources Management), Dar Al-Maysar for Publishing, Distribution and Printing, Amman, Jordan,
8. Filmholz, Eric, (Accounting for Human Resources) translated by Dr. Mohamed Essam El-Din Zayed, Mars Publishing House, Athlete,
9. Hor Negren, Charles, Datar, Srikant, Foster & George, ( Cost Accounting ) Translated by Ahmed Hamid Hajjaj, Al-Marikh Publishing House, Al-Riyadi,

**C - Research and periodicals:**

1. Al-Shaabani, Saleh Ibrahim Younis and Al-Kasab, Ali Ibrahim Hussein and Al-Hayali, Saddam Muhammad Mahmoud (The importance of accounting information about human resources costs and their impact on the development of those resources) Tikrit Journal of Administrative and Economic Sciences, Volume III, Issue Five,
2. Al-Dhahabi, Jalila Aidan, Al-Zubaidi, Intisar Ahmed Obaid, (The Effect of Quality Cost Analysis Based on Activities in Achieving Competitive Advantage), Journal of Administrative and Economic Sciences,
3. Hamada, Rasha, (Measurement and Accounting Disclosure of Human Resources and its Impact on Financial Statements) Damascus University Journal, Volume Eighteen, First Issue,

**D - University theses:**

Al-Zubaidi, Intisar Ahmed Obaid, (Measuring the Quality Control Costs of the Oil Refining Industry) Master's Thesis in Accounting, College of Administration and Economics, University of Baghdad.

**E – Internet:**

1. Aishouni, Muhammad, Quality Cost Analysis  
[www.Financailmanager.wordpress.com](http://www.Financailmanager.wordpress.com) 2005

2. Amara, Nawal, Masoud, Siddiqui, (Human Resources Accounting) The first international forum on human development and opportunities for integration into the knowledge economy and human competencies,

[www.kantakji.com/Figh/Filis//207](http://www.kantakji.com/Figh/Filis//207), 2004

3. Business College [www.cksu.com](http://www.cksu.com)

[www.iasj.net.las.Fanc](http://www.iasj.net.las.Fanc) - Full text & ald – 52794

Second - foreign sources

### A- books

1 - Aquila no, N.j,chase,R.B(Fundamentals of operation Management ) 2nd Edition , Lrwin , Inc .....

2 - Dilworth,j.b (( operations Management )) , Mc Graw Hill, .....

3 - HEiZER , JAY & RenDER , Barry (( operations/ management )) Theory : An integrated Approach.5 )) edition ( u . S . a : hoghtan Milflin co.....

4 - Hill, charles,w , L , jones , gareth R . / strategic ( u . s . a , hoghton Mifflin co.....

5 - Hilton , Ronaldw , Management Accounting , 4 ed , Irwin , McGraw – Hilt , .....

6 - Homgren , c . t , Foster , G , Gpater , S . M . ( cost Accounting Managerial Empehasis , 13 edition , prentice - hall intemational Ltd,.....

7 - Jackson , steve & sawyers , Roby Mangenal Accounting Roby AFocus on Dec is ian Making cfirst , Harcouit Publishers , Inc .....

8 - Kotter , P , (( Marketing management , analysis Planning impl ementation and Control , qediton Prentice - hall , Inc .....

9 - Krajewski , leej , Ritzman , Larry P , operations Management . Strategy and Analysis ' 5 edition ( u . s . a , Addison - wesley Publishing Company .....

10 - Maher . W . Michael , Stickney , p , Clyde , weilr , L , roman , ( Managerial Accounting , 10 , ed South – We stem, .....

11 - Russell , R , s , Taylor , b , w ( production and operations management Focusing on quality and Competitiveness Prentice hall , inc..... ,

12 - Stack , N , Chambers , S , Hurland , C , Harrison , A , & Johns ton , R , ( operations Management , 2 Edition , pit man Publishing , .....

### B - Period i calsandrese arches :-

yuan , Chung , Chee & Ching , s , ( cost Effective Based per formance Evaluation For suppleiivs and operations Quality Management Joumat , Vol , ( a ) , no ( 4 ) , 2002 . pp ( 1-23)

### C - Research From internet :-

[WWW.arabicstat . Com / Forums](http://WWW.arabicstat . Com / Forums).