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The efficiency of Using Attribute and Performance- Based Activity Methods to Raise the Level of Control Deviation A field study in Jaber Bin Hayyan Factory

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Abstract

Cost is the essence of any production process for it is one of the requirements for the continuity of activities so as to increase the profitability of the economic unit and to support the competitive situation in the market. Therefore, there should be an overall control to reduce the cost without compromising the product quality; to achieve this, the management should have detailed credible and reliable information about the cost to be measured, collected, understood and to analyze the causes for the spread of deviations and obstacles the management faces, and to search for the factors that trigger the emergence of these deviations and obstacles.

Key word: Using Attribute and Performance , Control Deviation .

Introduction

This research tackles the lack in the information resulting from traditional accounting by linking the two cost methods: the attribute- based costing, and the performance-focused activity based costing so as to get detailed information about the cost and quality of each production line activity from which the control authorities benefit to get the highest level of surveillance, which is reflected on performance, quality, and specifying deviations as they occur, to treat them and avoid their occurrence in the future, the thing that is reflected on the level of performance and attributes that satisfy the customer.

The research has come up with a collection of theoretical and practical conclusions, including raising the control deviation (monitoring level) in the factory by dividing the product and the production line into activities that help controlling the quality and cost of the product, which led to an increase of 0.2 in the control deviation level, whereby it was found that the cost accounting by using the traditional methods is amounted to 25000, and when referring to the table of defects and deviations, it was found that it falls between 3.4-3.5. As for the cost by using the two costing methods based on attributes and performance, it is amounted to 18750 falling between 3.6-3.7 in the table. Also, it was found that the time required to produce a single suit is amounted to 0.2944 hours for each suit, i.e., the total number of hours required to produce 40 suits is 11.776, i.e., approximately 12 hours (one and a half day), while the actual time for producing a single suit is 0.8 hours, which is equivalent to 32 hours (four days), and by using the cost-based method on the basis of activities relying on performance, then attributes reduce the rate of damaged units and provide the amount of deviation for each attribute increasing the level of quality of performance, and this of course confirms the control level.

The information provided by using the traditional cost accounting gives costing information in total about the production line, which is insufficient to show where? when? deviation occurs, so using modern costing methods of which is the attribute- based costing method (ABCII) and the performance focused activity based costing (PFABC) can provide detailed information for each of the activities of the production line concerning the cost and the quality from which the regulatory authorities get benefit to achieve the highest level of control that is reflected on performance and quality together and specifying deviations the moment they occur as well as treating and avoiding their occurrence in the future.

Here emerges the following inquiry:

Is the use of the two methods: the attribute-based costing method and the performance focused activity based costing would achieve a higher control level (observatory deviation) reflecting on performance quality?

The management needs subtle information about the production line and performance levels, and this why the research is important in providing accurate information that helps the management to control performance by providing information about each activity in the production line and about the level of performance quality of the manufacturing process via using two methods: The attribute-based costing and the performance focused activity based costing, which provide precise information about each activity and each attribute, and with the completion of information increases the controlling level and corrects the

course of the production line out of any deviation, whether an increase in cost and decrease in quality level.

The information provided by the use of the attribute-based costing method and the performance focused activity based costing would achieve the highest controlling level via detecting the activity deviations related to performance and attributes and to treat and avoid their occurrence in the future.

Concerning the choice of the hypothesis, the research methodology adopts two approaches: the inductive approach by using the description style through reviewing theses, periodicals and Arabic and foreign books related to the topic, and the second one is the field approach through interviews and field visits and collecting reports, lists and records, which can be seen in the accounts of the factory under research.

Paper type Categorise your paper under one of these classifications: Case study.

Keywords: Attribute-Based Costing , Performance focused activity based costing , Control Deviation , The Concept of Control , Control .

1.Costing methods based on activities (Attributes-Performance)

Attribute-Based Costing (ABCII)

The cost thinking has focused to a great extent on employing all methods and administrative systems towards a strategy to decrease cost by controlling performance and quality, so this research has begun to move towards using a method aiming at reducing costs by analyzing the initial specifications and attributes (the features of the product) and estimating the cost of the product; so of the most important specifications of the Attribute-Based Costing is that there is a clear link between the manufacturing choices and their effects as to cost and what is incurred on that as the increase in the ability to correct and improve the design and ease of application in comparison with other methods together with simplifying the collecting of the data necessary to calculate the product cost (El-Geyushi, 2019, 68).

The Attribute-Based Costing method is based on the idea of analyzing all cost aspects building on the product attributes so that to avoid increase of the economic unit in the storage of primary materials and complete production to reach at the best design of the product with the minimum cost and highest possible quality. Here lies the importance of the attribute in that it is after the ends rather than the means; what the economic unit uses of means to achieve the limited requirements according to the attributes differs according to the type of the product and the demands of the customers (the market) with the available capabilities and abilities and the determining of the product cost by distributing the product on the attribute group that holds various levels of achievements, then calculating the costs of completing the related attributes and benefits aiming at presenting detailed information that is useful in the planning and control operation. To work in this manner would lead to a product with no defects; thus, many economic units would avoid lots of costs related to treating the defective units, reducing management cost and reducing the time between the customer's demand and the handing of the product by getting rid of the value non-added activities (Ditts & Grabski, 1996,51), (Robert & Shepen, 1998,7), by cost reports and revealing the capacity of the economic unit to achieve quality standards and the speed and flexibility to respond to the changes in demands of customers, also

to balance between the production cost and value from the customer's view point. Added to that is the helping to arrange the production costs in an ascending order and by determining the level cost of completing each of the product attributes and then determining the cost of all attributes, and the cost total represents the overall product cost at each completion level and revealing it (AlSeid, 460, 2019).

The mechanism of applying the attribute- based costing starts as a basis for calculating costs by determining the needed attributes then the activities and process to implement attributes and the following step is to determine required materials to implement activities and process and then to determine achievement level costs and finally to analyze the relation between costs and benefits (Alsagheer, 81, 2011).

Performance focused activity based costing (PFABC):

This system is the point linking two systems, the ABC and ABM, it merges the determining of indirect costs on products and services, and the measuring of the performance of departments independently of each other as well as finding the deviations of the rate, efficiency and production volume. It is a costing method that is characterized by accuracy when calculating the costs of the produced unit, providing accurate information for controlling purposes, measuring and administrating performance, improving many decisions and presenting a real image of all the works and activities of the economic unit, as this method is related to all processes of the economic unit and its operational activities.

The performance focused activity based costing involves features of ABC in its analysis of activities; the numerous cost causes, the accuracy of determining the product cost and the cost of unexploited energy in an integrated system would achieve the accurate costing calculating, so this method is the corner stone in providing subtle information about the costs of the product or service and provides the necessary information for control and performance assessment. The information of the (PFABC) helps in operations of continuous development and improvement for being an active tool for strategic decision making and increasing the production efficiency by reducing process costs and optimal utilization of resources.

It determines actual costs for each activity separately and with high accuracy, as it takes into account the suitable costing vector whereby it provides flexibility because some activities have vectors other than time (megabytes, kilograms, etc.) besides being a specifying and performance assessment tool. (Hatif. Abd, 7, 2018).

Performance assessment is the ability and efficiency of the economic unit to administer its activities in its various administrative, productive, technical, marketing and planning aspects within a specific period of time and the extent of its skills to transform inputs or resources into outputs with the sought for quality and showing the extent of its capability to develop its efficiency year after year as well as improving and identifying the points of strength, weakness and deviations together with causes and those in charge and to overcome the difficulties it faces searching for the most productive and advanced methods in its work sphere.

Starting from the fact that performance represents the main motive for any existence or non-existence of any economic unit, it is considered the most contributing factor in achieving the main goal, which is survival and continuity, to show its ability to bring about results and match them with the intended plans and objectives sought for by the optimal employment of the allocated resources by the realized results.

In order to calculate cost by using the performance focused activity based costing, the main activities are calculated, then the employed resources for each activity are determined, followed by determining of the actual average of the resource for each activity to determine the cost of each activity, then the standard rate for each activity is calculated to measure deviation (which shows whether deviation is preferred or not), then the implemented activity costs are calculated and finally the productivity of each activity is calculated.

2. Control Deviation

The Concept of Control

For (Ivancevich, et al), control is a process employed to assess actual performance and compare it with objectives then taking the correcting course of action when there is some difference between performance and objectives (Abd, Handhal, 47, 2012). Therefore, it is known to assess and correct economic unit process within a framework of internal and external standard levels; successful monitoring eliminates chaos and provides stability inside the unit to enable it to achieve goals by showing the weak points and revealing errors in the work, and thus, fixing them and trying to avoid them in the future. It is a kind of work that should be done in every aspect of the unit (production, marketing and human resources (https://mawdoo3.com). The importance of control stems from its close association with the administrative process for a joint interaction among these activities and in a way that achieves the goals sought by the economic unit by measuring and correcting performance to ensure the achievement of the objectives and that the plans have been set for application in the right manner, to make sure that the work is done in accordance with the policies and plans set forth, and to verify the implementation of the goals intended for the economic unit. It monitors the execution of administrative and productive processes as well as the executors, assessing their work step by step to reach at the sought for goal in the best way and within the shortest time, the greatest accuracy and with the least error and cost (Al-Harbi, 35, 2003). Effective monitoring system enables managers to control and detect errors and the resulting consequences such as extravagance in using material resources, time loss and reduction in productivity. The importance of monitoring is evident through its close association with the administrative process towards mutual interaction among these activities in order to achieve the goals that the economic unit seeks to achieve (Blume, 32, 2008- adapted by the researchers).

So, control is one of the most important administrative tasks that managers do at any level of administrative work; it is the integrated logical administrative accounting tool for collecting and preparing data and assessing performance. Any failure or disorder in performance can be perceived and known through control; thus, it contributes to ensuring effective performance at the unit level by ensuring that the plan is in its right path, in addition to knowing the efficiency of implementation of tasks and duties, discovering errors the

moment they occur or errors that are expected to occur and dealing with them immediately or taking the necessary course of action to prevent their occurrence. It also aims at bringing about compatibility with environmental variables and helping in re-planning and determining the execution stages, following up the progress inside the unit and bringing about cooperation between departments that participate in the execution.

Control is needed at all levels; errors or deviations may occur in the course of practicing processes in the activities inside the economic unit, which would affect the time of completion, or new technical problems may happen in execution, which are treated and avoided in the future. The task of control does not include knowing the problem, rather the monitoring process extends to follows up the correcting procedures to measure their effectiveness by correcting the state of affair, knowing to what extent the performance is accurate, the effectiveness of planning and its compatibility to reality through participating in controlling its activities effectively and ensuring efficiency in employing the available resources on the one hand and taking into consideration the risks affecting it, including operational ones (which seek a thorough examination of the operational activities or the unit as a whole) in order to assess the various systems, administrative control and the operational performance according to a specific measuring method within the administrative objectives, in order to verify its economic efficiency, its operational and financial operations on the other hand (Al-Baghdadi, Odeh, 182, 2016, adapted by the researchers).

Steps of the Control Process:

These steps do not differ according to what is being monitored; they are the same with regard to work procedures, product quality, or anything else. The control process includes the following steps: (Sulaiman, 8-9, 2007)

A- Setting standards (time, product, cost, quality and manner).

B - Performance assessment (assessment on the basis of previous performance, assessment on the basis of comparison with others in similar tasks and assessment on the basis of performance standards and planning budgets) (Al-Garawi, 128, 2012).

C – Taking the correcting steps

Control Deviation or sigma (δ) is one of the Greek letters used by statisticians to refer to standard deviation in order to measure change or deviation in any process, whereby the performance of the unit is measured by the sigma level (δ) as to its commercial processes to statistically measure defects in the completion process and the defect rate is only 3.4 per million chance (Brue, 2, 2006), and it is considered an administrative system and a statistical scale aiming at making the production perfect (Pande & Holpp, 33, 2002) focusing on increasing customers' satisfaction, decreasing the necessary time circle, reducing defects and increasing profit margin.

Deviation is basically designed to suit industrial units because most of the production of these units is shaped by modularity; assembling of parts of a certain product in one of the industrial units is often done in the same pattern. Thus, once the error or defect is specified in a certain production line (activities) for the industrial unit, the necessary measures are taken to correct that error; consequently, the products of that activity would be less defective, and that can be applied by focusing on the process while doing its processes, and by so, potential

errors are detected together with making the necessary improvements while ensuring that they are not repeated (Saad and Hussein, 374-380, 2019 adapted by the researchers).

Control Deviation depends in achieving its objectives on dividing work and monitoring, so that the work of each activity is subject to control and its reliance on the information provided by the attribute-based costing and the performance focused activity-based costing of the economic unit activity.

The question presented by the current research is that why has the sigma six been merged with control?

So as to specify the position of the product in comparison with competitors and to present a model for reform or innovation, or both. It tackles the standard deviations specified in advance. Control deviation is not a haphazard or chaotic process or one occurring accidentally, rather every amount of deviation or defect has a rank or degree within the six-fold scale and the units compete to the highest degree in control and the least deviation in the monitoring process up to 0.0000034 parts per million monitoring process indicating the concept of control six-sigma deviation. Achieving customer satisfaction with production processes, reducing deviations in diagnosis and treatment, focusing on the time of the work circle and determining the appropriate production site within the six-fold scale would lead to increasing market share and reducing costs.

3.The Practical Part

Jaber Bin Hayyan Factory has been selected in this study which belongs to the general company for military industries of the Ministry of Industry and Minerals, which adopts, in production, the unified accounting system and the traditional production systems, as it regained its activity in mid-2018 thanks to the efforts of the factory's engineering, technical and administrative staff and started producing its current products, such as (rubber, sewing, carpentry, plastics, metal industries, molds ...) meeting the demands and the production orders related to the work, after it experienced the events of 2014 that the Nineveh governorate endured, which led to the collapse and destruction of the factory with all its buildings, machinery and equipment). The production line of sewing has been selected by the two researchers due to the demands and the related production orders.

The two researchers will calculate the cost depending on the attributes of the production line (sewing) as follows:

Step one:

Determining the needs and demands of customers. (1- reliability, whereby the product is durable and can endure different conditions of usage. 2- Safety, the product provides protection to the worker 3- Suitability, it is intended for the worker as to ease of movement and speed of wearing in addition to the aesthetic appearance expressing the work of its users).

Table (1) illustrates determining the main attributes of the product (the relative importance of each attribute of the attributes of the product).

Table (1) the relative importance of the attributes of the product

	Attribute	The relative importance of the attribute
1-	Reliability	50%
2-	Safety	45%
3-	Suitability	5%
	Total	100%

The source: Prepared by the two researchers depending on the beneficiary of the productive order.

First: Materials

Cost is divided depending on the attributes by the following rates (reliability 50%, safety 45%, suitability 5%) and because the suits are special for extinguishing fire, the materials are divided with the same attributes for all the materials supplied by the beneficiary and according to the attributes of the suits. An agreement has been made between the factory under research and the party demanding the material to use a certain type of cloth, which is agreed upon; the factory has been equipped with cloth by the beneficiary party.

Second: Wages

To calculate the cost of wages, the two researchers have calculated the actual time and needed time (according to the stopwatch and the planning manager) in the factory under research to complete the product unit, as is shown in table (2).

Table (2): calculating the available actual time and the needed time (according to the stopwatch) to complete the product unit.

	time		time / hour	preparation	needed time, time, work + preparation / hour
	S	m			
Chest	56		0.01556	0.00278	0.01833
Back	34		0.00944	0.00278	0.01222
Sleeve	40		0.01111	0.00278	0.01389
Trousers	10	1	0.01944	0.00278	0.02222
Pocket	20		0.00556	0.00278	0.00833
Collar	20		0.00556	0.00278	0.00833
Tailoring					
Total	4m				
Chest	30	1	1.50000	0.03333	1.53333
joining the back with the chest	30	1	1.50000	0.03333	1.53333
fitting the sleeves with sewing	30	1	1.50000	0.03333	1.53333
Trousers		2	2.00000	0.03333	2.03333
chest pocket	10		0.16667	0.03333	0.20000
Collar		2	2.00000	0.03333	2.03333
pen pocket	20		0.33333	0.03333	0.36667
Total Sewing	9				
Ironing		3	0.05000	0.0028	0.05278
Packing		1	0.01667	0.0000	0.01667
total/minute	17		0.28333	0.06667	0.35000

The table has been prepared by the two researchers depending on the information taken from the planning manager and the stopwatch.

Whereby, the time required is calculated according to the stopwatch to accomplish each activity by second, and extra time is added for preparing the machines, and then the second is converted into hour, as follows:

Time required for chest tailoring 56 seconds ÷ 3600 (60 seconds x 60 minutes = 3600) = 0.0156 hours

Wage Cost

After determining the time required for the production of the product unit, the cost of the productive hour wage is calculated by the two researchers by determining the workers' wages in addition to the salaries of the production observers and for every activity in the production line to charge the activity by the observers' wages, instead of charging the total wages of the production observers for the production line as a whole.

Then distributing the production line share of the workers' wages for each activity divided by the number of hours needed to produce the product as follows:

Calculating the cost of wages by the total wages (salaries) of workers in the production line divided by 240 (the number of the days of work (30) days x 8 work hours per day) as follows:

- Counting the workers' wages for each activity to calculate the cost of wages depending on the financial records, lists of salary and the human resources manager as follows:

- Monthly wages for all workers for each activity in the production line.

- Then dividing the cost of each activity by the actual number of hours in order to get at the one-hour share of work with wage costs.

2383215 ÷ 240 (8 hours x 30 days) = 9,930.06 dinars / hour, cost of activity.

- When determining the one-hour cost of wages it is then multiplied by (x) the actual number of hours for each activity to show the share of the production order of the wage costs in that activity.

- Then dividing the cost of each activity by the actual number of hours to get the one-hour share of work with the wage costs.

2383215 240 = 9930.06 dinar / hour cost of activity and as is shown in table (3).

Table (3): Determining the wage costs for each activity in the production line.

Activity	total cost	the one-hour share of wages
Tailoring	2383215	9930.06
Sewing	9961458	41506.08
Ironing	638168	2659.03
Packing	617228	2571.78

The table is prepared by the two researchers depending on the financial records and wage lists (salaries).

When determining the cost of each hour of wages, it is multiplied by (x) the actual number of hours for each activity to show the share of the production order of the cost of wages in that activity.

(9930.06) x the time required for the activity x (0.0183) = (182.05) dinars / hour the cost of the activity of the production order and so is the case for the rest of the activities.

Table (4): attribute share of the time cost

Activities	Cost | (Time Work+ Preparation/hour)	Activity Cost	Reliability 50%	Safety 45%	Suitability 5%
The chest	0.0183	182.05	91.03	81.92	9.10
The back	0.0122	121.37	60.68	54.62	6.07
the sleeve	0.0139	137.92	68.96	62.06	6.90
the trousers	0.0222	220.67	110.33	99.30	11.03
the pocket	0.0083	82.75	41.38	37.24	4.14
The collar	0.0083	82.75	41.38	37.24	4.14
the tailoring		827.51	413.75	372.38	41.38
the chest	1.5048	62456.77	31228.38	28105.55	3122.84
joining the back with the chest	1.5048	62456.77	31228.38	28105.55	3122.84
fitting the sleeve with its sewing	1.5048	62456.77	31228.38	28105.55	3122.84
the trousers	2.0048	83209.81	41604.90	37444.41	4160.49
the chest pocket	0.1714	7115.33	3557.66	3201.90	355.77
the collar	2.0048	83209.81	41604.90	37444.41	4160.49
the pen pocket	0.3381	14033.01	7016.50	6314.85	701.65
the sewing			187469.10	168722.22	18746.92
the ironing	0.0528	478626.00	239313.00	215381.70	23931.30
the packing	0.0167	154307.00	77153.50	69438.15	7715.35

The table is prepared by the two researchers depending on the Planning Division and the stopwatch.

Table (5): Calculating the activity cost and the share of each attribute.

Activities	Time-Work+ Preparation/hour	Cost	Cost/Hour	Activity Cost	Reliability50%	Safety45%	Suitability 5%
the chest	0.0322	2383215	9930.06	319.97	159.98	143.99	16.00
the back	0.0261	2383215	9930.06	259.28	129.64	116.68	12.96
the sleeve	0.0278	2383215	9930.06	275.84	137.92	124.13	13.79
the trousers	0.0361	2383215	9930.06	358.59	179.29	161.36	17.93
the pocket	0.0222	2383215	9930.06	220.67	110.33	99.30	11.03
the collar	0.0222	2383215	9930.06	220.67	110.33	99.30	11.03
the total	0.1667			1655.01	827.51	744.75	82.75
the sewing							
the chest	0.0583	9961458	41506.08	2421.19	1210.59	1089.53	121.06
joining the back with the chest	0.0583	9961458	41506.08	2421.19	1210.59	1089.53	121.06

fitting the sleeve with sewing	0.0583	9961458	41506.08	2421.19	1210.59	1089.53	121.06
the trousers	0.0667	9961458	41506.08	2767.07	1383.54	1245.18	138.35
the chest pocket	0.0361	9961458	41506.08	1498.83	749.42	674.47	74.94
the collar	0.0667	9961458	41506.08	2767.07	1383.54	1245.18	138.35
the pen pocket	0.0389	9961458	41506.08	1614.13	807.06	726.36	80.71
the total	0.3833			13489.47	6744.74	6070.26	674.47
the ironing	0.0583	638168	2659.03	221.59	110.79	99.71	11.08
the packing	0.0500	617228	2571.78	128.59	64.29	57.87	6.43
the total				15494.66	7747.33	6972.60	774.73

The table is prepared by the two researchers depending on the salary records of the staff and the time.

Table (6): the total attribute share of the wage costs.

	Reliability	Safety	Suitability
The tailoring	827.51	744.75	82.75
the sewing	6744.74	6070.26	674.47
the ironing	110.79	99.71	11.08
the packing	64.29	57.87	6.43
the total	7747.33	6972.59	774.73

The table is prepared by the two researchers.

Three: Indirect Industrial Costs:

To calculate the indirect industrial cost, the selection of a specific basis for each activity depended upon the calculation of cost as is illustrated in table (7).

Table (7): Calculating the standard indirect industrial costs

Activities	Estimated Basis	Standard Basis to produce one unit	Standard Basis for the total production	Standard Cost	Standard Average	Determining Basis /Actual Cost = Actual basis | actual costs	Equation of finding actual average(actual costs+ actual hours	Equation of finding actual average(actual costs ÷ actual hours	Standard Average * actual costs	Cost of each activity = required standard basis * loading average	The cost of each activity=required normative basis*download rate
tailoring	work hours	0.083	0.083	200	2400	220	236	1.073		220	200
sewing	metre	140	5600	1000	0.18	140	1045	7.464	7.464	146300	1000
ironing	suit	40	1600	225	0.14	40	230	5.750	5.750	9200	225
packing	suit	40	1600	40	0.03	40	44	1.100	1.100	1760	40
the total				1465			1555				1465

The table is prepared by the two researchers depending on the factory records and the planning manager.

Table (8): calculating the actual indirect industrial costs.

Activities	Standard time	Estimated time	Standard basis for producing one unit	Standard basis for the total production	Determining estimated basis		Equation of finding actual average (actual costs ÷ actual hours)	Standard average = standard costs ÷ standard basis ÷ estimated basis	Cost of each activity = standard hours required * loading average	Standard average * actual costs
					Available actual basis	Actual costs				
Tailoring	5	work hours	0.083	0.083	220	735	3.341	24000	2000	17640000
sewing	11	metre	140	5600	140	11500	82.143	1.79	10000	20536
ironing	4	Suit	40	1600	40	2305	57.625	1.25	2000	2881
packing	1	Suit	40	1600	40	650	16.250	0.23	375	152
total	21					15190			14375	17663569

The table is prepared by the two researchers.

Table (9): comparing the actual cost with the standard cost at the level of activities under the attributes.

Activities	Standard cost	Actual costs	Reliability 50%		Safety 45%		Suitability 5%		Deviation amount of attributes		
			Standard	Actual	Suitability	Actual	Standard	Actual	Reliability (Suitability- Actual)	Safety (Suitability- Actual)	Suitability (Suitability- Actual)
Tailoring	200	735	100	367.5	90.0	330.75	10.0	36.75	-267.5	-241	-27
Sewing	1000	11500	500	5750.00	450.0	5175.00	50.0	575.00	-5250.0	-4725	-525
Ironing	225	2305	112.5	1152.5	101.3	1037.25	11.3	115.25	-1040.0	-936.0	-1.0
Packing	40	650	20	325.0	18.0	292.50	2.0	32.50	-305.0	-274.5	-30.5
Total		15190		7595.0		6835.50		759.50			

Table (9) illustrates the extent of cost deviation for each activity and this is what monitoring providers of information for the management so as to correct and avoid it in the future.

The table is prepared by the two researchers.

Table (10): shows the share of the production order of the marketing and administrative costs.

	Cost	Production and administrative department	Share of the production line	Number of production orders	Share of the production orders	production line- sewing		
						Reliability 50%	Safety 45%	Suitability 5%
Marketing costs	90544	15	6036.267	6	1006.0444	503.0222	452.72	50.30222
Administrative costs	100297	20	5014.85	6	835.80833	417.9042	376.1138	41.79042

The table is prepared by the two researchers depending on the financial records.

Table (11): list of costs according to the two activity methods based on attributes and performance.

Type of activity				
	Reliability	Safety	Suitability	Total
Cost elements				
Materials	Materials are equipped by the beneficiary			
wages	7747.33	6972.59	774.73	15494.65
Industrial indirect costs	7595	6835.5	75950	15190
Total industrial costs	30582.40	25352.73	2643.95	58579.09
Marketing costs	503.02	452.72	50.30	1006.04
Administrative costs	835.81	417.90	376.11	1629.83
Total	14818.56	13420.29	2234.08	91899.61
The actual cost of the production order according to the traditional methods				111311.42
Difference to total production order				-19411.81
The difference per unit of activity-based costs is less than the actual cost				-485.295

Wages, indirect industrial costs, total industrial costs, marketing costs, administrative costs, the total, the actual cost of the production order according to traditional methods, cost variance of the production order (total) and the share of the one unit of the product (suit) of the costs on the basis of activities.

The table is prepared by the two researchers depending on financial records.

Table (11) shows that there is an increase in the cost by adopting the performance and attribute-based activities for the one unit of product (suit) estimated to (485,295) dinars for the actual cost (administrative, marketing and indirect industrial wages and costs, except for materials).

Table (12): Quality index for determining the deviation level.

	Using the traditional method	Using the performance and operation-based activities
Defect rate=defect amount ÷ quantity of productive units	0.30 (12 ÷ 40)	0.15 (6 ÷ 40)
Accuracy rate= 1- defect rate	0.70 (1-0.30)	0.85 (1- 0.15)
defect rate per million chance defect quantity ÷ (production quantity * number of defect types	8 ÷ (40*8) = 0.025	6 ÷ (40*8) = 0.187
Defect per million chance	25000	18750

The table is prepared by the two researchers depending on results.

Referring to the table of defects and the sigma six, it can be noticed that cost by using traditional cost accounting is (25000) and that it is between (3.5-3.4), whilst the (18750) is between (3.7-3.6) for the order (40) pieces when employing the performance and attribute based costing methods. That is, there is an increase in the observatory deviation level with deviation amount for each attribute.

4.Conclusions

The research has come up with a collection of theoretical conclusions:

1- Increasing the observatory deviation (the monitoring level) in the factory via dividing the product and the production line into activities that help controlling the efficiency, quality and cost of the product.

2 - Working on improving the quality of cost information and finding ways to develop means to support decisions to measure the performance of the different economic resources.

Practical conclusions

1- The increase in observatory deviation level is (0.2), whereby it has been found that the cost by using cost accounting with the traditional methods has reached (25,000), and by referring to the defects and deviations table, it has been found that it falls between (3.4-3.5), whereas, the (18750) falls between (3.6-3.7) for the order of (40) pieces when using the performance and attribute based costing methods, and the amount of deviation is given for each attribute.

2- The integration of the performance and attribute based costing methods reduces these deviations occurring in the economic unit.

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مدى امكانية استخدام اساليب الانشطة المبنية على المواصفات والاداء لرفع مستوى الجيود الرقابي دراسة ميدانية في مصنع جابر بن حيان

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مستخلص البحث

ان الكلفة هي جوهر العملية الانتاجية كونها من متطلبات استمرارية النشاط من اجل زيادة ربحية الوحدة الاقتصادية ودعم الموقف التنافسي في السوق فلا بد من رقابة شاملة لخفض الكلفة دون المساس بجودة المنتج، ولتحقيق ذلك لابد من توفر معلومات كلفوية للإدارة مفصلة وذات مصداقية وموثوقية لإمكانية قياسها وتجميعها وفهمها وتحليل اسباب نمو الانحرافات والعقبات التي تواجهها وبيان معرفة العوامل التي تسببت في ظهورها .

نوع البحث : دراسة حالة

المصطلحات الرئيسة للبحث: اسلوب التكلفة على اساس المواصفات، اسلوب التكلفة على اساس الانشطة المعتمدة على الاداء، الرقابة، الجيود الرقابي