



Technical costing based on specification (ABCII) and its role in reducing costs: An applied study in the Leather Factory/ Advanced Civilian Shoes Factory No.7

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Abstract

Given the inadequacy of the traditional cost systems applied in the economic entities, which do not take into account the non-financial variables, which are the essential core for pushing the economic entity towards success and leadership to keep pace with developments in the field of technology and the modern industrial and administrative business environment and in line with the constantly renewed requirements of customers due to flooding the market with various goods and services. Therefore, the research aimed to study and analyze the role of costing technology based on specifications (ABCII). In order to reduce production costs, the costing technology was applied to one of the products of Factory No. (7). One of the factories, the Leather Factory of the General Company for Textile and Leather Industries, is based on field experience, conducting personal interviews, and analyzing data. The research reached several conclusions. The most important of which is that the application of (ABCII) technology in the research sample (leather factory / advanced civil shoes factory No. 7) contributed to reducing costs by the amount and capacity of (17251108). Moreover, it was only seventeen million two hundred and fifty-one thousand one hundred and eight Iraqi dinars for sales (1484 pairs) in 2018. Furthermore, it is dispensing with activities that do not add value, considering maintaining the required level of product quality and maximizing customer benefit.

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Introduction

The global and local economic, administrative, social, and technological business environment globally and locally prompted economic entities to keep pace with these developments. In order to survive and compete, it has to achieve profits, reduce costs, and achieve a competitive advantage that contributes to making its products and services a target for customers to satisfy their needs and desires at the lowest cost and the highest quality that can be obtained. Therefore, the role of costing technology based on specifications (ABCII) was highlighted in reducing production costs through the use of possible alternatives and meeting the requirements of customers to create a marketing cost mix that contributes to the production and marketing of what can be sold, and not selling what can be produced to address the problem of low levels of production. The research was divided into four sections in the Leather Factory / Advanced Civilian Shoes Factory No. 7. It addressed the deficiencies in the traditional cost systems applied in the factory through this technology and its role in reducing costs. The third section dealt with the

practical side by studying and analyzing the role of (ABCII) technology in reducing production costs. Finally, the research concluded with the fourth section, which dealt with the researcher's most significant conclusions and recommendations.

❖ Study Methodology

- 1.study problem:** The study problem centers around highlighting the low production levels in the economic entities due to the high production costs and the unwillingness of customers to buy local products due to the intense competition from foreign products. Therefore, the research problem is represented by the following question: Does applying costing technology based on specifications in the economic entity contribute to achieving customer requirements and reducing production costs?
- 2.The importance of the study:** The importance of the study is evident in the focus on developing the reality of the traditional costing system applied in public sector companies in general and the Leather Factory / Advanced Civilian Factory No7. In a way that makes it

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easy to know the aspects that are most important to customers and can contribute to reducing costs without affecting the level of quality .

3. Study Objectives:

- Explain the knowledge foundations of costing technology based on specifications.
- Study and analyze the role of costing technology based on specifications in achieving customer requirements and reducing production costs.

4. study hypothesis: - Based on the study problem, the researcher will try to prove or refute the following hypothesis: that applying costing technology based on specifications in the economic entity contributes to achieving customers' requirements and reducing production costs.

5. a: The spatial limits of the study: - One of the leather factory factories, which is the advanced civilian shoe factory No. 7.

b: The temporal limits of the study: - The data of the Advanced Civilian Shoes Factory No. 7 of March 2018 were relied upon to represent the temporal limits of the study.

6. sources of data and information collection and study methodology: - The study was carried out by relying on data and information collected from the following sources:

- Sources of the theoretical side: - The deductive approach of the study relied upon books, research, periodicals, letters, dissertations, and Arabic and foreign articles that the researcher could obtain from libraries and the global information network (Internet).
- Sources of the practical side: - The inductive approach of the study was relied upon through the field visits that the researcher made to the subject of the study and personal interviews with managers and stakeholders in the subject of the research, documents, and records for the year (2018) for the subject of the study.

Theoretical Framework

First: costing technology based on specifications (ABCII), its origin, and concept

The characteristics of the modern economic business environment have contributed to transforming economic entities into market orientation. It focuses on producing what can be sold instead of selling what can be produced to contribute and support competitiveness through continuous and joint cooperation between its departments to provide better customer value than competitors. Orientation towards the market to the concept of product value is a source of profitability by relying on customers' vision and evaluation of product specifications. Also, for the economic entity to reach this value, it has to exploit all the strengths that distinguish it from its competitors to develop new products that contribute to meeting customers' expectations at a specific level, from cost to not affecting prices and profitability. Based on this interest in the needs and desires of customers and the inability of traditional costing systems to provide this type of information, research efforts resulted in introducing a technique called costing technology based on specifications (ABCII). It is an acronym for the term (Attributes Based Costing). The symbol (II) represents the number two in the Latin language to distinguish it from the term (Activity Based Costing), the activity-based costing technique (ABC) (Latifa ,2017: 117-118).

The first appearance of the ABCII technique dates back to the nineties of the twentieth century when (Brmwich) tried in 1990 to develop management and strategic accounting by carefully considering the benefits provided by the product to customers. Also, the extent of those benefits contributes to achieving a competitive advantage and comparing the costs related to product specifications with what customers pay. On the other hand, (Brmwich) concluded that management accountants can play a crucial role in measuring the cost of specifications supplied to customers and preparing regular reports on that. Competitive costing (Drury, 2008: 574) and (Walker) stated that (ABCII) technology is a development of activity-based costing (ABC) technology. This technology supports administrative decisions to improve performance effectiveness and achieve cost efficiency (Walker, 1998:2). There have been many and varied definitions of the (ABCII) technique by writers and researchers, and Table (1) below shows the definitions of this technique:

Table (1) Definitions of (ABCII) Technology

seq	Researcher name	the definition
1	(Barfield & al, 2003: 146)	It is a development and extension of ABC technology that relies mainly on cost-benefit analysis to identify the needs and desires of customers represented by product specifications such as reliability, durability, etc., and analyze information related to the costs of additional improvements

necessary to obtain these specifications.

<p>2 (Jones, et.al., 2012: 267)</p>	<p>It is one of the strategic cost management techniques that work on controlling production costs because the product consists of an interconnected series of specifications that represent value to the customer, as these specifications include specific features in design, quality, and after-sales services.</p>
<p>3 (Al-Ardawi, 2020: 98)</p>	<p>It is a system based on two perspectives, the first focusing on product specifications and characteristics and the second focusing on customers' expectations, desires, and competition factors, which contributes to enabling the economic entity to maximize profitability and gain customers, thus achieving economic value for it compared to its competitors.</p>

From those mentioned earlier, the researcher believes that the ABCII technique is a modern strategic cost management technique that measures production costs based on the specifications on which the product is designed. This technique analyzes the relationship between costs and benefits (value) customers obtain from products. Determine the specifications that are the basis for achieving customer satisfaction and value without exceeding the target cost and then use these specifications to measure production costs. **Second: Steps to apply the costing technique based on specifications (ABCII): -**

The customer represents the first starting point for effective supply chain operations and the end of these operations through his use of the products and services of the economic entity. In order to achieve this, the economic entity should follow the following steps to apply this technology:

1. Determine the needs and desires of customers

When applying this step, the following is achieved: (Jangi, 2016: 32)

- -Assistance in defining all primary product or service specifications in the design phase.
- -Contribute to knowing and identifying shortcomings in meeting the customers' aesthetic and usability needs of the product or service and considering them when designing the product or service.
- Assistance in drawing up the unit's production and marketing policies.
- Contribute to following up on competitors' performance and finding out the reasons for the distinction of their products or services provided to know the expected market share of the economic unit and its competitive position when implementing the specifications desired by customers.

Contribute to planning programs for developing and improving products and services to balance market needs and the use of available resources for the economic unit in an ideal manner.

2. identifying the basic specifications of the product

According to this step, the basic specifications of the product are determined based on the needs and desires of customers that were identified in the previous step, and to define these specifications, there are several approaches including (Sorour, 2017: 110-111):

-The value engineering method improves operations and reduces costs by relying on information collected about product design and production stages, as all design specifications are tested to identify areas that require improvements (Hilton, 2008:232) .

-The joint analysis approach is an approach by which the structure of customers' preferences is analyzed and estimated by estimating preference factors such as relative importance, part value, and ideal points. Also, it gives overall evaluations for a group of predetermined alternatives according to different levels of specifications, and the price is usually among the specifications (Green & Srinivasan, 1990: 4).

3. identifying the activities and processes necessary to implement the specifications

Under this step, the activities are counted and defined in order to know the inputs and outputs of each process and to study the various performance measures that pertain to these processes and the extent to which they add value in order to determine the value-adding activities and the non-value-adding activities in order to exclude the unnecessary activities from them and improve the necessary activities, including them being effective (Al-Sayed, 2019: 462).

4. Calculate the costs of the activities necessary to implement the standard

Under this step, the resources used up for the completion of each product specification and all the activities necessary for its production are determined, as the necessary procedures are taken to calculate the costs of each level of achievement and for each specification through the following: (Al-Saghir, 2011: 82).

-Calculating the costs of activities that add value to levels of achievement and the costs of necessary activities that do not add value to levels of achievement.

-Choosing the best homogeneous group of achievement levels that achieve the best benefits for the economic entity based on the specifications that meet customers' needs.

5. Identifying the cost of the product

Each level of achievement for each product specification is considered an independent product. Accordingly, the cost of the product for a specific level of achievement is represented by the sum of the cost of activities that add value to the level of achievement and the cost of necessary activities that do not add value, which make up the product specifications at this level of achievement (Al-Mahmoud, 2007: 187).

Third: ABCII technology and cost reduction

The concept of cost reduction is one of the most important goals that economic entities seek to achieve in order to maintain a competitive advantage and stay in the market for a long time. For the required use (Al-Kaabi, 2009: 14), since the focus of economic entities on reducing costs should be at the design stage to reduce costs through a market study to know the types of new products that competitors intend to offer and the desires and tastes of expected customers and their requirements and willingness to obtain products or services in exchange for their sacrifice of cost (Bragg, 2007:229). Reducing costs according to applying (ABCII) technology is achieved in several steps. The most prominent of which is the second step by defining product specifications (Bragg), indicates that the value engineering that is relied upon in this step focuses on additional improvements while reducing costs by dealing with suitable suppliers that are committed to providing raw materials with advanced technology or by relying on advanced engineering designs developed by the engineers of the economic entity that will reduce costs, improve performance, and reduce defective production (Bragg, 2007: 233).

The third topic/application of (ABCII) technology and its role in reducing costs in the leather factory / advanced civilian shoes factory No. 7.

In this topic, the practical aspect of the research, which was applied in the Leather Factory / Advanced Civilian Shoes Factory No. 7, one of the factories of the General

Company for Textile and Leather Industries, will be addressed. It is one of the formations of the Iraqi Ministry of Industry and Minerals, as the data for the year 2018 were approved for the Advanced Civilian Shoes Factory No. 7 (search location)

1. An introductory overview of the Advanced Civilian Shoes Factory No. 7 (research sample).

It is one of the laboratories affiliated with the Leather Factory. It is located in Baghdad Governorate (Eastern Karrada), representing the primary location of the former General Company for Leather Industries and the current General Company for Textile and Leather Industries. This factory produces men's shoes in various models, whether laced or closed, in multiple colors and sizes as planned, as the researcher will apply (ABCII) technology and demonstrate its role in reducing production costs. Also, it will be applied to the men's shoe model 70218, one of the products of the Advanced Civilian Shoes Factory NO 7 (subject to research).

2. Calculating product costs according to (ABCII) technology In this research, the (ABCII) technique will be applied in the Advanced Civilian Shoes Factory No. 7 to calculate the costs of the product, men's shoes Model 70218, according to the following steps :

a: - identifying the needs and desires of customers

The needs and desires of customers represent the main axis that the economic entity should take care of in order to obtain the customer's loyalty. Thus, compete and stay in the market for a more extended period. The needs and desires of customers are represented by a set of specifications that should be available in the product. Questionnaire forms for 2016, 2017, and 2018 were used to determine the specifications for the men's shoe Model 70218 product. The reasons for requesting this product and the suggestions of customers.

b: - identifying the basic specifications and the relative importance of each specification in the product.

By relying on the research and market studies conducted in the previous step, the basic specifications of the product were determined as follows:

- Durability: means that the product has durability; that is, it can withstand various conditions of use.
- Safety: to protect the customer's feet.
- Aesthetic (modernity): it represents the external appearance of the men's shoe, Model 70218.
- Color: It is represented by the alternatives in which the men's shoes, Model 70218, are available, including the color to meet customers' desires.

After defining the basic specifications, the relative importance of each specification was determined by the

leather factory by relying on research and previous market studies, as shown in Table (2) below:

Table (2) The relative importance of each of the specifications of men's shoe model 70218

Seq	Specification name	Relative importance
1	Durability	45%
2	Safety	30%
3	Modernity	15%
4	the color	10%
the total		100%

Source / Prepared by the researcher based on the research and market studies carried out by the leather factory.

Fourth: Determine the materials included in the product and relate each of them to the specifications

After the basic specifications and the relative importance of each specification have been determined in

the previous steps. In this step, the materials included in the product will be identified and related to each specification, as Mr. For Table (3) below:

Table (3): The materials used in the production of men's shoes, model 70218, and the percentage of each specification benefiting from them

seq	The name of the raw material	Durability	Safety	Aesthetic	Color
1	genuine leather (Jordanian)	45%	30 %	15%	10 %
2	Face liner	65%	35 %		
3	Synthetic lining	65%	35 %		
4	Cuff Texon 2.5 mm	100%			
5	Cuff Texon 1.5 mm	100%			
6	Palm lines		60 %	25 %	15 %
7	EVA padding		100%		
8	nylon thread	50 %		50 %	
9	Fort 1.4 mm	40 %	35 %	25 %	
10	Cellulose bulb	40 %	35 %	25 %	
11	Gamble	60 %	40 %		
12	PU glue	100%			
13	7 cm elastic	60 %		40 %	
14	neoprene glue	100%			
15	Latex	100%			
16	Thinner	100%			
17	Spirito	100%			
18	Finch			30 %	70 %
19	Label			100%	
20	jagged nail	50 %	50 %		

21	Soft nail	50 %	50 %		
22	New sole	45 %	30%	15 %	10 %

Source / Prepared by the researcher, based on the interview with Mr. Ahmed, who is in charge of production operations in the factory, and his assistant, Mr. Alaa.

Fifth: Calculating costs associated with volume

According to this step, the cost of raw materials involved in the production of men's shoes, model 70218,

will be calculated for each of the product's specifications, as in the following tables (4, 5, 6, 7):

Table (4) the costs associated with the production volume for the durability specification

Subject Name	specification ratio of material	The cost of the material per unit of the product / Iraqi dinars	Share specifications/ Iraqi dinars
genuine leather (Jordanian)	45%	412.353	185.558
Face liner	65%	153.484	99.764
Synthetic lining	65%	367.615	238.949
Cuff Texon 2.5 mm	100%	245.979	245.979
Cuff Texon 1.5 mm	100%	80.041	80.041
nylon thread	50%	39.199	19.599
Fort 1.4 mm	40%	31.940	12.776
Cellulose bulb	40%	67.819	27.127
Gamble	60%	214.770	214.770
PU glue	100%	103.685	103.685
7 cm elastic	60%	204.820	122.892
neoprene glue	100%	209.988	209.988
Latex	100%	48.700	48.700
Thinner	100%	132.157	132.157
Spirito	100%	434.856	434.856
jagged nail	50%	11.685	5.842
Soft nail	50%	28.951	14.475
New sole	45%	5016.545	2257.445
The sum of volume costs associated with a specification			4368.695

Source / Prepared by the researcher based on data from the Cost and Pricing Division and the Materials Disbursement Division and Table (3).

Table (5) costs associated with the production volume of the safety standard

Subject Name	specification ratio of material	The cost of the material per unit of the product / Iraqi dinars	Share specifications/ Iraqi dinars
genuine leather (Jordanian)	30%	412.353	123.705
Face liner	35%	153.484	53.719
Synthetic lining	35%	367.615	128.665
Palm lines	60%	168.646	101.187
EVA padding	100%	23.522	23.522
Fort 1.4 mm	35%	31.940	11.179
Cellulose bulb	35%	67.819	23.736
Gamble	40%	214.770	85.908
jagged nail	50%	11.685	5.842
Soft nail	50%	28.951	14.475
New sole	30%	5016.545	1504.963
The sum of volume costs associated with a specification			2076.901

Source / Prepared by the researcher based on data from the Cost and Pricing Division and the Materials Disbursement Division and Table (3).

Table (6) Costs associated with the volume of production for the aesthetic standard

Subject Name	specification ratio of material	The cost of the material per unit of the product / Iraqi dinars	Share specifications/ Iraqi dinars
genuine leather (Jordanian)	15%	412.353	61.852
Palm lines	25%	168.646	42.161
nylon thread	50%	39.199	19.599
Fort 1.4 mm	25%	31.940	7.985
Cellulose bulb	25%	67.819	16.954
7 cm elastic	40%	204.820	81.928
Finch	30%	140.215	42.064
Label	100%	273.159	273.159
New sole	15%	5016.545	752.481
The sum of volume costs associated with a specification			1298.183

Source / Prepared by the researcher based on data from the Cost and Pricing Division and the Materials Disbursement Division and Table (3).

Table (7) costs associated with the production volume of the color specification

Subject Name	specification ratio of material	The cost of the material per unit of the product / Iraqi dinars	Share specifications/ Iraqi dinars
genuine leather (Jordanian)	10%	412.353	41.235
Palm lines	15%	168.646	25.296
Finch	70%	140.215	98.150
New sole	10%	5016.545	5016.545
The sum of volume costs associated with a specification			666.335

Source / Prepared by the researcher based on data from the Cost and Pricing Division and the Materials Disbursement Division and Table (3).

Furthermore, after determining the costs of raw materials for each of the product specifications in the previous tables, Table (8) below shows each specification and its share of the costs of raw materials (production volume costs):

Table (8) production volume costs for each product specification

Seq	Specification name	Share specifications/ Iraqi dinars
1	Durability	4368.695
2	Safety	2076.901
3	Aesthetic	1298.183
4	the color	666.335
The sum of volume costs associated with a specification		8410.114

Source / prepared by the researcher based on tables (4, 5, 6, 7).

Sixth/calculating activity costs

These costs are represented by the costs of the labor component and the component of indirect industrial costs, except for depreciation. According to this step, the costs of the production departments will be calculated for the two components above and each specification according to the following:

1- Calculating production times in each of the production departments. The time spent for each activity will be calculated within each of the production departments represented by the separation department, the sewing department, and the mold traction department:

A - Calculating the time spent on the activities of the chapter department as in the Table below:

Table (9): The time spent on the activities of the separation department

Seq	activity name	time spent	
		minute	Seconds
1	Cut genuine leather	10	3
2	line arthrosis	50	0
3	Cut the plastic	40	0
4	Cut linen and then line an artificial palm	54	0
5	Louis	20	1
The sum of volume costs associated with a specification		54	6

Source / prepared by the researcher based on the records of the Time Study Division.

B- Calculating the time spent on sewing activities, as shown in the Table below:

Table (10) The time spent on the activities of the sewing department

Seq	activity name	time spent	
		minute	Seconds
1	Outline the boundaries of the mark with a pencil	40	0
2	Face stitching	0	1
3	Glue and then fold it loosely	50	1
4	Bashna stitching	40	0
5	Dyer stitching	50	1
6	Paste lines	15	3
7	Suturing the elastic and the tongue	48	1
8	Bind the bashna on the face	25	2
9	Connect the bashnah with the elastic	19	2
10	Qawara Al-Bashna	40	1
11	Bambeh caulking and appendages, and then burning the thread	19	1
Total		46	18

Source / prepared by the researcher based on the records of the Time Study Division.

C- Calculation of the time spent on the mold-pulling activities as shown in the Table below:

Table (11) The time spent on the activities of the mold-pulling department

Seq	activity name	time spent	
		Minute	Seconds
1	Formation of the palm template	20	0
2	Palm glue	35	0
3	Gardening molding	0	1
4	Pull all sides of the garden	40	2
5	Lathing procedure	25	0
6	Horticulture inspection	20	0
7	Bastaya sander	30	0
8	Gluing the sole and bastia	40	0
9	heat press	10	3
10	Cleaning	20	1
11	Take out the template	40	0
12	Shoe inking	20	1
13	Shoe dye	30	0
Total		30	13

Source / prepared by the researcher based on the records of the Time Study Division

2 -Calculating the costs of the activities associated with each specification

After the time spent for each activity within each of the production departments has been determined in the

previous steps, the costs of the activity and each specification will be calculated in this step according to the following tables:

Table (12) The time required to complete each product specification

Activity	Durability		Security		Aesthetics		the color					
	Section	time required		Section	time required		Section	time required				
		second	minute		minute	minute		Minute	minute	Minute	Minute	
Cut genuine leather	Arthrosis	20	1	arthrosis	5	1		30	0	Arthrosis	15	0
line arthrosis				arthrosis	31	0		14	0	Arthrosis	5	0
Cut the plastic	Arthrosis	20	0				arthrosis	20	0			
Cut linen and then line an artificial palm	Arthrosis	10	0	arthrosis	25	0	arthrosis	12	0	Arthrosis	7	0
Lewis	Arthrosis	40	0	arthrosis	30	0	arthrosis	10	0			
Outline the boundaries of the mark with a pencil							arthrosis	40	0			
Face stitching	Sewing	30	0	Sewing	15	0	arthrosis	5	0	Sewing	10	0
Glue and then fold it loosely	Sewing	10	1				Sewing	40	0	Arthrosis		
Bashna stitching	Sewing	40	0				Sewing			Arthrosis		
Dyer stitching	Sewing	10	1				Sewing	40	0			
Paste lines	Sewing	45	1	Sewing	30	1		30	0	Arthrosis		
Plastic sewing	Sewing	30	0	Sewing	48	0	Sewing	50	0			
Bind the bashna on the face	Sewing	35	1				Sewing	19	1			
Connect the bashnah with the elastic	Sewing	0	1				Sewing			Sewing		
Qawara Al-Bashna	Sewing	30	0	Sewing	10	0	Sewing	30	0	Arthrosis		
Bambeh caulking and appendages, and then burning the thread		19										
Formation of	Drag the	20	0									

the palm template	template										
Palm glue	Drag the template	20	0	Drag the template	15	0	sewing	10	0	Arthrosis	
Gardening molding	Drag the template	30	0	Drag the template	20	0		10	1		
Pull all sides of the garden				Drag the template	30	1					
Lathing procedure	Drag the template	25	0				Drag the template			Sewing	
Horticulture inspection	Drag the template	20	0				Drag the template			Arthrosis	
Bastaya sander	Drag the template	20	0	Drag the template	10	0				Arthrosis	
Gluing the sole and bastia	Drag the template	40	0								
heat press	Drag the template	10	2	Drag the template	0	1				Arthrosis	
Cleaning	Drag the template	20	1	arthrosis							
Take out the template	Drag the template	40	0	arthrosis							
Shoe inking	Section							20	1	Sewing	
Shoe dye				arthrosis				19	0	Arthrosis	11 0
	Arthrosis	44	18	arthrosis	59	9	Drag the template	39	9	Arthrosis	48 0

Source / prepared by the researcher based on tables (9, 10, 11)

Table (13) below shows the percentage of time for each product specification:

Table (13) The time required to complete each specification

Seq	Specification name	time required for each specification		Percentage of time required for each specification
		Seconds	Minutes	
1	Durability	44	18	48.65%
2	Safety	59	9	25.3%
3	Aesthetic	39	9	24.78%
4	the color	48	0	1.27%
	Total	10	39	100%

Source / prepared by the researcher based on Table (12)

After the time required to complete each specification and the percentage of this time has been determined, the cost of work and the indirect industrial costs, except for

depreciation. It will be calculated by relying on the records of the factory's Salaries and Wages Division and the Cost and Pricing Division, as in the following two tables.

Table (14) Labor cost for each specification

Seq	Specification name	time required for each specification		pay rate/min Iraqi dinars	Labor cost per specification per unit of) (product Iraqi dinars
		Seconds	Minutes		
1	Durability	44	18	52.616	970.239
2	Safety	59	9	52.616	504.587
3	Aesthetic	39	9	52.616	494.064
4	the color	48	0	52.616	25.255
Total		10	39		1994.145

Source / Prepared by the researcher based on the records of the Salaries and Wages Division and Table (12)

Table (15) Indirect industrial costs, excluding depreciation, for each specification

Seq	Specification name	Industrial indirect costs ((IQD per unit	Percentage of time required for each specification	T.S.G.M. except for extinction per specification (per unit of product)
1	Durability	972.888	48.65%	473.310
2	Safety	972.888	25.3%	246.140
3	Aesthetic	972.888	23.78%	241.082
4	the color	972.888	1.27%	12.356
Total			100%	972.888

Source / Prepared by the researcher based on the records of the Cost and Pricing Division and Table (13).

Seventh: Calculating energy costs

According to this step, energy costs will be calculated by multiplying the perishable cost per unit by the

percentage of time and for each of the product specifications, as in Table (16) below:

Table (16) energy costs for each product specification

Seq	Specification name	Depreciation (cost (per unit	Percentage of time required for each specification	Energy costs per product specification (per unit of product)
1	Durability	202.915	48.65%	98.718
2	Safety	202.915	25.3%	51.338
3	Aesthetic	202.915	24.78%	50.282
4	the color	202.915	1.27%	2.577
Total			100%	202.915

Source / Prepared by the researcher based on the records of the Cost and Pricing Division and Table (13).

associated with the decision. Sixth: Costs

It includes administrative costs that bear 12% of direct wages (1994.145 dinars x 12% = 239.297 dinars) as well as marketing costs that bear 61% of direct wages and T.S.M. (1994.145 dinars + 972.888 dinars + 202.915) x 61 % =

1933.668 dinars, and therefore the total costs associated with the decision per unit area (239.297 dinars + 1933.668 dinars = 2172.965 dinars) that will be distributed according to the product specifications and according to the Table below:

Table (17) Decision costs for each product specification

Seq	Specification name	Administrative and marketing costs	The relative importance of each product specification	Decision costs for each product specification
1	Durability	2172.965	45%	977.834
2	Safety	2172.965	30%	651.890
3	Aesthetic	2172.965	15%	325.945
4	the color	2172.965	10%	217.296
Total			100%	2172.965

Source / Prepared by the researcher based on the records of the Cost and Pricing Division and Table (2).

Furthermore, after the costs of each product specification have been calculated. The cost of one unit of the product will be calculated according to these specifications and as shown in Table (18) below:

Table (18) Calculating the cost of one unit of a product for men's shoes, Model 70218, for the year 2018

seq	Specification name	production volume costs	activity costs	energy costs	Resolution costs	The total costs of each product specification
1	Durability	4368.695	1443.549	98.718	977.834	6888.796
2	Safety	2076.901	750.727	51.338	651.890	3530.856
3	Aesthetic	1298.183	735.146	50.282	325.945	2409.556
4	the color	666.335	37.611	2.577	217.296	923.819
Total		8410.114	2967.33	202.915	2172.965	3753.027

Source/ prepared by the researcher based on tables (8, 14, 15, 16, 17).

After applying the ABCII technique, as in the above tables, the cost of one unit of the advanced civilian shoe, Model 70218, was determined, amounting to 13,753,027 dinars. When comparing this cost with the cost of one unit for the same product according to the pricing lists in the sales exhibitions, which amounted to 25,377,763 dinars, the difference is 11,624,736 dinars. It represents the amount of reduction achieved for one unit of the product. Accordingly, the total amount of reduction achieved as a result of applying (ABCII) technology is (11624.736 dinars x 1484 units sold = (17251108.224 dinars). It is reducing production costs.

❖ Conclusions

1.The (ABCII) technique aims to measure the actual costs for each level of achievement, which represent the total costs of resources spent on necessary and value-adding activities,

excluding the costs of resources spent on non-value-adding and unnecessary activities.

- 2.Applying (ABCII) technology contributes significantly to improving product specifications and achieving financial savings for the economic entity by reducing production costs.
- 3.The application of (ABCII) technology in the research sample (leather factory / advanced civil shoes factory No. 7) contributed to reducing costs by an amount of (17251108.224) only seventeen million two hundred and fifty-one thousand one hundred and eight dinars and two hundred and twenty-four fils) for the amount of sales (1484 pairs) during the year

2018. Also, dispensing with activities that do not add value, taking into account maintaining the required level of product quality and maximizing the level of customer benefit.

❖ **Recommendations:**

Based on the conclusions reached, the research reached a set of recommendations, the most important of which are:

1. Based on the developments in the current business environment, the economic entity in general, and the Leather Factory / Advanced Civilian Shoes Factory No. 7, in particular, should apply modern cost technologies that contribute to reducing production costs and fulfilling the desires and needs of customers. One of these technologies is (ABCII) technology.
2. The management of the Leather Factory / Advanced Civilian Shoes Factory No. 7 (research sample) should study the causes of high production costs and strive to reduce them through optimal utilization of available resources and prevent waste in order to maximize achievement.
3. The management of the Leather Factory / Advanced Civilian Shoes Factory No. 7 (research sample) should develop its technical and administrative cadres by putting them in developmental and training courses to contribute to improving their skills. It will reflect positively on achieving the goals of the Leather Factory / Advanced Civilian Shoes Factory No. 7 (sample Research), most notably reducing production costs through modern cost and marketing techniques.

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