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Research Article

The Impact of Activity Based Costing (ABC) on Cost Reduction

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Abstract

This study examines the impact of Activity-Based costing technique (ABC) on cost reduction and competitive price in the number of industrial firms in Erbil city in the Kurdistan Region- Iraq. The objective of the study investigates the impact of activity-based costing technique on cost reduction and competitive price. This study used quantitative method for determine and describe results and a survey questionnaire for collecting data on manufacturing firms in Erbil city, Kurdistan region of Iraq. Also. Randomly distributed 125 questionnaire forms on specific employees and collecting 87 forms. This research study used the Statistical Package for the Social Sciences (SPSS 26) software program to analyze collected data. The study also tested the correlation and simple regression models. The results provided a significant relationships and impact exist between activity-based costing technique with cost reduction and significant relationship and significant impact with competitive price. The model was approved to give a clear reliability test by applying alpha Cronbach test. Moreover, the study model constructs to explain the concern relationship between activity-based costing technique and product value.

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1.Introduction

1.1 Background

The Activity-Based Costing technique (ABC) is a one of the most important cost accounting techniques that identifies cost pools and activity centers in an industrial firm. İn addition, It allocates manufacturing overhead costs to products and services (cost drivers) on the basis of the number of activities or transactions required in the production process of products and providing services as a result.

According to Osisioma & Enahoro (2006) managers can enhance business performance and maximize shareholders' value by adopting activity-based costing. Prime cost (Direct materials and labor) are the only costs in a traditional cost accounting system that can be directly traced back and change with unit production to a specific product. At each product process Activities can be divided into value-added and non-value-added activities using the ABC system. Non-value-added activities can be stopped in order to enhance the system's performance. Therefore, Despite the benefits of precise costing, it requires additional effort and expense to obtain the information needed for the analysis (Lewis, 2015).

The Activity-Based Costing technique (ABC) is a modern cost accounting technique that was developed in the United-States during the 1980s as an alternative technique to traditional costing technique. The traditional cost accounting techniques divides up manufacturing overhead costs among goods according to a particular cost driver, like direct labour hours or machine hours. In addition, ABC defined and promoted the idea that activities are what use resources, not merchandise, and that overhead expenses are distributed according to the activities that go into making a product. Robert Kaplan and Robin Cooper founded ABC for the first time in the middle of the 1980s. Initially, the technique was intended to assist businesses in improving their pricing strategies and cost information. Identifying the cost drivers most closely associated with each product was the plan instead of just allocating overhead according to one cost driver. The 1990s experienced a rise in the adoption of the ABC approach as businesses looked to enhance their cost-management procedures. For businesses with complicated product lines, where traditional costing technique were less successful, it was especially helpful. These industrial firms were able to identify areas for cost reduction and efficiency improvements by using ABC, which gave them a more accurate understanding of their production overhead expenses. All things considered, the ABC approach has greatly influenced the subject of cost accounting and assisted businesses in better understanding and controlling their costs (Cooper and Kaplan, 1988).

In response to the new conditions, the industrial firms try to adopted a new technique to assessing the recent improvement in the industrial environment, such as the technology development after the past half century and the relationship between global industry that leads to arriving globalization, and reduced new definitions and cost accounting techniques for management in general, such as activity-based costing techniques (ABC) and activity-based management. In addition, these modern cost accounting techniques have been widely developed by practitioners and researchers in terms of their accuracy in the recalculation of manufacturing overhead costs. In summary, the ABC performs best in circumstances that are challenging rather than streamlined and have a large number of equipment, products, and technological components. Also, the activity-based costing technique is effective in relation to complex and hard processes that are not easy to resolve. Industrial businesses need to finish a number of prerequisites before applying the ABC technique, including management changes, executive management support, ongoing education and training, and communication skills promotion (Cooper and Kaplan, 1991).

1.2 Objectives of the study

This study investigates to determine the impact of activity-based costing technique (ABC) on the product value of manufacturing firms in Erbil city – Kurdistan Region. Specifically, the study will seek to:

1. Improving product costs by minimizing costs and maximizing profit.
2. Giving the best product value using the ABC system by separating each product's cost per unit.
3. Does the ABC system contribute to empowering industrial firms to optimize expenses and increase profitability?
4. determine the significant variabless and percentages of satysfing and influence on product value.
5. Determine to what extent the application of the ABC method will influence the product value of manufacturing organizations in Erbil City.
6. Determine whether the ABC system has any effect on the revenue income of manufacturing organizations in Erbil city.

1.3 Importance of the research study

The significance of the research study stems from the fact that it addresses a crucial issue for manufacturing firms: the application of contemporary systems to the distribution of manufacturing overhead costs in manufacturing companies. The adoption of scientifically based cost minutes has become more important because to the huge increase in prices coming from the enormous technical advancements observed in the industrial sector worldwide (Abu Nassar, 2017). This modern cost accounting technique allows for the provision of accurate information to managers to support their ability to make logical decisions, particularly with regard to pricing and the exclusion of activities that do not add value to the product, in addition to accurately assembling the manufacturing overhead costs and the share of industrial goods produced (Eman, 2018).

1.4 Problem and Research question

The problem of this study is tried to investigate whether implementing an activity-based costing technique can improve product value by allowed and offered more accurate cost information and allowing for better decision-making related to product design, pricing, and production processes.

1. How does ABC costing impact the accuracy of product costing, and how does this impact the perceived value of a product?
2. To what extent does ABC costing enable companies to identify and reduce costs associated with non-value adding activities, and how does this reduction in costs affect the value proposition of a product?
3. How does ABC costing impact the decision-making process for companies, and how does this impact the perceived value of a product from the perspective of customers?

1.5 Hypothesis of the study

The hypothesis that this study seeks to verify are as stated below:

The role of statistically significant of applying the activity-based costing in improve value of product (competitive price, reducing cost).

H1: (cost reduction)

H1:0: There is not a positive correlation between the activity-based costing technique and cost reduction.

H1:1: There is a positive correlation between the activity-based costing technique and cost reduction.

H1:0: There is not a significant impact of the activity-based costing technique and cost reduction.
H1:1: There is a significant impact of the activity-based costing technique and cost reduction.

H2: (competitive price)

H2:0: There is not a positive correlation between the activity-based costing technique and competitive price.
H2:1: There is a positive correlation between the activity-based costing technique and competitive price.
H2:0: There is not a significant impact of the activity-based costing technique and competitive price.
H2:1: There is a significant impact of the activity-based costing technique and competitive price.

2. Variable Description

2.1 Introduction And Variable Description

Industrial firms and organizations feel obligated to become more flexible, interconnected, and highly automated in order to increase productivity while reducing costs due to the intensifying global competition in the industrial sector. That is why industrial firms have recently developed and implemented activity-based cost techniques to lessen their reliance on conventional accounting systems.

Traditional costing technique frequently assign indirect costs based on simple metrics (like direct labor hours). There is no real connection and linkage between the cost drivers and cost pool, so this method of cost assignment can be very inaccurate. This may result in an inaccurate allocation of indirect costs. At first, managers believed that the ABC method was a more precise way to determine cost of products. However, the ABC technique has proven to be an incredibly helpful management technique that may be used to increase revenues. More precise cost information is made possible by the assignment of costs to activities through the use of activity-based costing (Nitin Kumar & Dalgobind Mahto, 2013).

2.2 activity-based costing technique

The efficiency of ABC technique is component of the cost driver wellness, cost information credibility, cost calculation accuracy, and cost reporting usefulness. In addition, each one of the Cost driver wellness and cost calculation accuracy may assist employees across functions understand different types of costs and calculate more accurate costs (kluemper & Groot, 2009). The ability to analyze costs, lab time, production time, and raw material utilization, as well as the potential to reduce the production of material that does not meet specifications, will be made possible by cost driver wellness and cost information creditability. These actions will increase production process efficiency by removing or reducing inefficiencies such as process bottlenecks, material wait times, and material loss, which will ultimately result in improved production process efficiency (Theeuwes & Andriaanson, 2014).

ABC is not an alternative costing approach for job costing or process costing, Horngren, Foster, and Datar (2000). The ABC method is a technique for creating the cost figures that are utilized in process-costing or job-costing systems rather. ABC technique stands out due to its emphasis on activities as the primary cost objectives. On the other hand, the majority of conventional methods employed in job and process costing systems depend on all-purpose accounting systems that aren't customized for the specific tasks carried out by different companies. Managers may find that information obtained using the ABC technique is more valuable for costing considerations. In addition, to more accurately track costs for specific

products or customers, ABC contributes to improving the precision of cost analysis. This system centers on the tasks carried out in order to generate products. In the conventional method, we trace costs to an organizational unit, like a department or plant, and then to products; in this system, we trace costs to activities first, then to products. A cost driver in this technique is a factor, such as the volume or level of activity, that influences costs. In the ABC system, an activity is a unit of work. Cost drivers are the forces, events, or other variables that affect an activity's cost. According to Rajani (2020) and FATAH & JAF (2023), this system emphasizes the cause-and-effect link in the cost incurrence, which improves accuracy and reliability in product cost assessment.

2.2.1 Benefits of Activity Based Costing technique

1- ABC technique contributes to cost reduction by offering useful data for cost management. It assists in choosing the best plan of action.
2-The ABC approach gives due importance to non-manufacturing costs, which make up a sizable amount of total cost. Therefore, traditionally non-manufacturing costs have been allocated assigned based on volume, which has led to the overvaluation of high-volume items.
3- The ABC approach offers accurate and precise cost data. Total Quality Management (TQM) and business process reengineering are two contemporary productivity enhancement strategies that depend on this cost data.
4- ABC technique assist the management and decision makers in formulating an best pricing policy while fixing prices the market.
5- Cost of each activity is determined with the assist of ABC technique. There is accuracy in indirect cost-allocation to products. This technique is helpful in make or buys decisions and transfer pricing (Rajani Gupta, 2020).

2.2.2 the reasons that leading to implementing ABC techniques

The main benefit of using an ABC technique is that it allows you to more precisely calculate how manufacturing overhead cost is used distribute. By implementing ABC technique, it can obtain more accurate information about the following issues:
Activity costs: ABC is a useful tool for tracking the cost of activities and comparing them to industry standards. If the activity costs are found to be higher than industry standards, ABC can provide feedback to management to help reduce the ongoing costs of specific services (Masadeh, 2023).

Customer profitability: Thought most of the costs incurred by customers are simply manufacturing costs, there is also an overhead cost component, such as unusually high customer service levels, product return handling, customer satisfactions service and cooperative marketing agreements. These extra overhead expenses can be sorted through by an ABC technique, which will also assist it in identifying the clients who are genuinely bringing in a profit. (Khzer & Jaf, 2023). (Rajani, 2020).

Distribution cost: A normal business sells its goods through a range of channels, including mail-order catalogues, distributors, the Internet, retail stores, and online retailers. It can decide to change the way distribution channels are used or even eliminate unprofitable channels if it can reasonably determine which distribution channels are utilizing overhead. Overhead accounts for the majority of the structural cost of sustaining a distribution channel (Sabir, 2020), (Masadeh, 2023).

Minimum price: Product pricing is essentially determined by what the market will bear, but the marketing manager needs to be aware of the product's cost in order to keep clear of offering a product that will result in losses for the business with each sale. When deciding

which overhead expenses to include in this minimum cost, ABC is a great technique (Sabir & Mahmood, 2023), (Nair& Tan, 2028).

Production facility cost: Separating overhead costs at the plant-wide level is typically rather simple, allowing customers to compare the production costs of various facilities (Hamad& Sabir, 2023), (Rajani, 2020).

In general, designing an effective ABC system requires careful planning and consideration of the specific needs of the organization and its decision-makers. With the right design, an ABC system can provide valuable insights and help drive better decision-making across the organization (Rajani, 2020).

2.3 Improve Product value

Many articles and research study have distinguished various aspects of product value (Sheth et al., 1991; Lai, 1995). This part of the study reviews product value, its include dimensions and applications.

Sheth et al. (1991) identified a five product consumption values—functional, social, emotional, epistemic, and conditional—were found to have an impact on customer choosing behaviors. They had the opinion that any or all of the five consumption values could have an impact on a choice. Although it is preferable to maximize all five consumption values, consumers typically accept less of one value in exchange for more of another.

Going beyond Sheth et al.'s classification of product values. Also, eight different product benefits that customers might obtain from owning a product were provided by Lai (1995) as a kind. According to Frog Design's founder Esslinger, consumers purchase value in the form of entertainment, experiences, and self-identity in addition to commodities.

Cooper (1994) merged the price-performance congruency and product advantage determinants, when other researchers examine them independently. Although price-performance congruency can be examined as a component of product advantage, it is actually better understood as a separate determinant since it involves an element related to economic benefit. Price has the potential to have a negative impact on consumer choice since it might negatively impact their budget, but it can also have a positive impact because it may be interpreted as a sign of higher product quality. Owing to these conflicting consequences, it will be important to observe how differently product value is valued (Rao and Monroe, 1988).

2.4.Dimensions of product value

2.4.1. Cost reduction

First and foremost, it is important to understand the distinction between cost reduction and cost control. Cost reduction is an unabated process that involves critical cost evaluation, analysis, and standard-challenging. Mersereau (1994) noted that there are opportunities for cost reduction across the board in the business; in other words, considerations should be made for staff, organization, manufacturing, procedures, and production. In addition, cost reduction is extensively investigated and evaluated in order to increase efficacy and efficiency while lowering expenses (Murphy, 2009).

According to Bruce (1992), it is defined cost reduction as the application of procedures to monitor expenditures and performance against the progress of a project and manufacturing operations with projected completion. This allows for the measurement of deviations from authorized budgets and the appropriate action to be taken to achieve lowest expenses.

According to John et al., (2007), cost reduction can be accomplished in a number of ways. There are, however, a few well-liked strategies, such as manufacturing activity modification

and the elimination of non-essential, non-value-adding activities. In short, the best and least expensive path is chosen for each activity through thorough analysis. In order to reduce costs, McCormick (2010), Karim, et, al., (2020) offered the following ten steps: 1. Decide on a minimal expense reduction objective, 2. Determine if budgeting may assist reach the goal, 3. Integrate cost cutting in the larger business plan. 4. Determine the factors that influence costs economically; 5. Use the value chain to analyses costs; 6. Choose the right instruments from the operational toolbox. 7. Take into account outsourcing non-essential tasks. 8. Reorganize the workforce; 9. Manage the change process carefully. 10. Closely observe the outcomes.

2.4.2 Competitive price

The models given in the competitive pricing literature are limited in their applicability due to the use of simplifying assumptions. When coupled with other real-world situations like capacity limitations, fluctuating demand over time, or a limited selling window, this is particularly true (Gallego and Hu 2014); (Jaf ,2015).

According to empirical research by Armstrong and Green (2007), competitive pricing, particularly when done to increase market share, hurts profitability. Similar to this, some researchers blithely interpret competitor-based pricing as a symptom of subpar management because it denotes a lack of independence in price setting (Jaf, & Xinping, 2011); (Larson 2019). Therefore, it is a common belief among revenue management researchers that the dynamic effects of competition are implicitly captured by monopoly pricing models. The so-called market response hypothesis is the key factors for neglecting the effects of competition altogether (Phillips 2021; Talluri and van Ryzin 2004). Mustafa et al. (2022) suggest that past sales data already includes all important effects, reducing the need to take competition into account.

3. Methodology

3.1. Introduction

This section of the study is crucial as it provides an explanation of the methods, tests, and techniques used in the research, along with the tools used. Furthermore, the study focuses on the research methodology, a crucial aspect that significantly impacts the quality of any study (Anyanwu, 2003). It is also seen as the background through which the results of a study are deregulated, and it helps any reader understand the analysis carried out in the course of the study; moreover, it also helps to clarify the procedures used for the research. As mentioned in this study, investigate specific events or new cost management techniques that may affect asset prices and improve product value.

3.2. Industrial sector in Erbil city

Industry is considered to be one of the most important sectors of economics. The industry sector is constantly growing and expanding due to the increase in the needs of the population because it helps to meet the needs of the population due to the rapid advancement of technology, science, and knowledge in the invention of devices, as well as this large increase in population and their demands in industrial activities as a savior to meet their needs alongside its economic sectors of agriculture, business, transportation, and tourism (Tanju & Helmi, 1991).

this research is of special importance because for the first-time research is done under the title "The Impact of ABC on Improving Product Value" by dimensions cost reduction and competitive price on industrial firms in Erbil, so although there are number industrial companies in the different types of products in the research area whose questionnaire was presented and discussed face-to-face and the questions were answered accurately and correctly in order to achieve a good result.

This study examines the first generation of cost management techniques (activity-based costing) and the effects of this on cost reduction and competitive prices in the number of industrial factories in Erbil city in the Kurdistan region of Iraq

3.3. Data collection and sources

This study used the quantitative method for collecting primary data by randomly distributing questionnaires on the number of industrial factory firms in Erbil city in the Kurdistan region of Iraq to determine the impact of activity-based costing on improving product value by dimensions of cost reduction and competitive price. The population can respond to this questionnaire distributed to industrial firms that are specified, including managers, finance managers, accountants, in general, this study distributed 125 questionnaire forms and collected 87 forms because, in the questionnaire, specifying experience and academic level can be answered and filed out, which is why a lot of industrial factories and firms do not fill out all forms. Furthermore, this study applies the Statistical Package for the Social Sciences software program (SPSS 26) for analyzing data and discussing results.

3.4 Methods used for evaluation and statistical analysis this study

In order to confirm and reach reliable indicator data that supports the objectives and hypotheses of the study. Additionally, in order to evaluate the data and test the study model and its hypotheses, a statistical specialist was consulted for this investigation. The data has been examined in order to make it easier to deal with by computer in a table, and the statistical program SPSS 26 was used to analyze the data and obtain results for all the independent and dependent variables and dimensions of the axes used in the questionnaire. The following statistical tools and test were used:

1- Alpha-Cronbach test has been applied to test the reliability of the data.
2- Percentages and frequencies: to determine the study sample and find out how often the study variables fall into each category
3- Simple correlation coefficient
4- Regression coefficient (simple linear regressions)

A simple model (linear regression) is used that allows the inclusion of any preferred variable. Moreover, simple linear regression model analysis seeks to investigate the relationship and impact between two dependent variables and one independent variable. The regression model was used to analyses the industrial sector of the respondents.

$$PV = \beta_0 + \beta_1 ABC + \varepsilon_i$$

Where β_0 is intercepted; β_1 is the regression slope or coefficient for a given independent variable k, and is the error term for the individual I based on the record of observations. The model includes independent variables covering socio-demographics, reduced costs, and competitive prices.

4. Result And Discussion

4.1 Reliability of questionnaire

Reliability of Questionnaire and Data: It examines the dependability, accuracy, and consistency of the research instrument. The sample size of the questionnaire is 87 individuals for research, which implies that a sample size of 87 respondents is an appropriate sample size for the current research. That is why this study used two methods for inspection of data and confirmation of data for accuracy and reliability:

First: the validity of the questionnaire: for confirmation of the validity of the questionnaire, the questionnaire was first distributed to a number of academic staff in the accounting and management department with scientific titles such as assistant lecturer, lecturer, and assistant

professor to get their opinion on the questions. Therefore, the researcher responded to their opinions and made the necessary corrections, additions, and deletions in light of the proposals submitted by the arbitrators.

Second: Cronbach's alpha, or coefficient alpha, was developed by Lee Cronbach in 1951 and is the most common measure of internal consistency ("reliability"). The alpha-Cronbach test was used in this study to assess the reliability of the questionnaire. On the other hand, the Alpha Cronbach coefficient was used for the purpose of ensuring the stability of the scale used and to determine the accuracy of the answers of the members of the research sample.

The reliability of the Cronbach's alpha coefficient depends on the context and the specific measure being assessed. Generally, a Cronbach's alpha coefficient of 0.70 or above is considered to indicate a reliable measure, while a coefficient of 0.60 or below may indicate poor reliability.

However, it's important to note that the reliability of the Cronbach's alpha coefficient can be influenced by various factors, such as the number of items in the measure, the homogeneity of the items, and the sample size. Therefore, it's always a good practice to interpret the Cronbach's alpha coefficient in conjunction with other relevant information about the measure and the sample.

After applying the alpha-Cronbach test by the SPSS 26 software program, it can be seen from table (4.1). Depending on the results of the analysis from the tables, it is clear that the value of the Alpha Cronbach coefficient at the total level of the variable's study is equal to (0.865), while for the ABC independent variable it is (0.82), and for the CR dependent variable it is (0.82), while for the CP dependent variable it is (0.87), and also for the dimensions of improving product value, it is clear, while the results indicate for the CR and CP dependent variables they are respectively (0.82– 0.87).

As a result, if the reliability coefficient is (0.8) or more according to this equation, it is considered sufficient for research that depends on the questionnaire as a tool (Allen & Yen, 2002). Therefore, from the previous results, it is clear that there is the required stability for the current study questionnaire and through the statements of its variables and dimensions, which is sufficient to adopt the statements of the current questionnaire as a tool for collecting field data.

Table (4.1): The value of the Alpha Cronbach's coefficient. Source: (authors primary data)

Variables and dimensions	Number of questions	Value of Cronbach Alpha
Socio-demographic	3	0.87
Reduce cost	6	0.82
Competitive price	6	0.87
ABC	6	0.82
Total (reliability)	21	0.865

4.2. Data Analysis and Results

The main objective of this part of the study is to examine the study models and verify its hypotheses in order to determine the variance relationships, influences of correlation and regression, and correlations between the study variables. Several statistical methods were used to conduct the statistical analysis on the study variables, as follows:

4.3. Testing the correlation between the study variables

examining the relationship between ABC and improving product value in Erbil City's industrial enterprises by measuring the dimensions of cost reduction and competitive price. In order to confirm the first main hypothesis, which states that there is a statistically significant correlation between ABC and IPV by dimensions of cost reduction and competitive price in industrial firms in Erbil, this section of the study aims to identify the nature of the correlations between ABC and IPV.

Table (4.2) A correlation results between (ABC) and (IPV) by dimensions of (CR, CP). (Authors primary data)

dependent variables	Independent variables (ABC)		
	Correlation	**Sig.**	**Sample**
Cost Reduction	0.501	0.000***	87
Competitive Price	0.183	0.000***	87
Note: *, **and ***indicate significance at the 10%, 5%, and 1% levels, respectively			

First dimension: (cost reduction)

Table (4.2) presents the results, which show that there is a statistically significant positive correlation (less than 0.01) between the ABC and IPV by CR in industrial firms in the Kurdistan region-Erbil city. In other words, a positive and semi-strong correlation between the (ABC and IPV by CR in industrial firms in the Kurdistan region-Erbil city) indicates that the null hypothesis (H0) is to be rejected and the alternative hypothesis (H1) is accepted. This outcome demonstrates that the two variables are correlated. Alternatively put, it denotes rejecting the null hypothesis (H0) and acceptance the alternative hypothesis (H1).

Second dimension: (competitive price)

There is a positive statistically significant correlation between the (ABC and IPV by CP in industrial firms in the Kurdistan region-Erbil city), according to Table (4.2)'s data. In other words, a high and positive correlation between the (ABC and IPV by CP in industrial firms in the Kurdistan area - Erbil city) indicates that the null hypothesis (H0) is rejected and the alternative hypothesis (H1) is accepted. This finding confirms the existence of a link between the two variables, which leads to the conclusion that promoting industrial economic units via the use of this strategy improves the quality of goods available for purchase at a price that is competitive.

4.4.Testing the regression between model of the study

In this part of the study, test the results are determined and the interactions between the study variables are discussed. The key hypotheses that come from these interactions are then tested sequentially in accordance with the hypothetical research plan, as indicated in the research methodology. To determine the nature of the regression model connections between the study's important variables and assess its influence outcomes, inferences with a regression model coefficient consistent with the descriptive data was necessary, as this was what the study data expressed.

Examining the regression by dimensions (CR, CP) between the independent variables of ABC and the dependent variables of IPV

First: There is statistically significant impact of ABC on Improve Value of Product by Cost reduction in industrial firms in Kurdistan region.

The results shown in Table (4.3), have determine a significant effect between ABC and IPV by CR in the industrial firms in Erbil city. In addition, the results of the linear model indicate the effect of ABC on the IPV, by reducing costs. as follow:

The statistical significance of the regression model that was performed is indicated by the F-test findings. In this case, the statistically significant prediction of the outcome variable by the regression model is indicated by the (p-value) of (0.031). Additionally, the dependent variable (IPV by CR in the industrial enterprises in Erbil city) is significantly impacted by the independent variable (ABC).

The regression model's f-test result indicates that the independent variable ABC significantly affects the dependent variable IPV by CR. It suggests that IPV via CR in the industrial firms in Erbil city is impacted by the studied industrial enterprises' reliance on the implementation of ABC. The following are the findings of the macro-level analysis:

The marginal slope coefficient (B1) is (0.561) and significant at the (0.01) level. This means that a one-step change in the ABC technique causes a (0.561) change in IPV by CR in Erbil city's industrial firms. This is a significant change that can be depended upon to explain how the independent variable (ABC) affects the dependent variable (IPV by CR in Erbil city's industrial firms).

The contribution of the results indicated that Implementing ABC can result in cost reductions by providing a more accurate view of the real cost of producing a product or providing a service. By identifying non-value-added activities, improving overhead cost allocation, and targeting cost reduction efforts more effectively, organizations can reduce costs and improve profitability.

In contrast, the value that comes from R2 is (0.32). which shows that the (ABC) technique contributes to approximately (32%) of the change in IPV caused by CR; that is, the independent variable's explanatory value for the responding variable amounts to (32%). This result also shows that other variables account for the remaining effective percentage of (68%) in IPV.

The primary hypothesis (H1), according to which ABC significantly influences IPV by CR, was thus accepted based on all the evidence in table (4.3).

Table (4.3) regression model results between ABC and IPV by dimension CR. (Authors primary data).

Variables	Coefficient	Std. Error	T-value	P-value
constant	9.160	3.738	0.688	0.567
Reduce cost	*** 0.561	1.772	0.389	0.031
$\overline{R}^2$	0.68			
R^2	0.32			
F-test (P-value)	1.42 (0.031)			
Note: *, **and ***indicate significance at the 10%, 5%, and 1% levels, respectively				

Second: There is statistically significant impact of ABC on Improve Value of Product by competitive price.

The findings presented in Table (4.4) demonstrate the significant impact between ABC and IPV by CP in Erbil City's manufacturing firms. Furthermore, the outcomes of the basic linear regression model show how competitive costs affect the relationship between the independent variable, ABC, and the dependent variable, IPV.

The statistical significance of the regression model that was performed is indicated by the F-test results. The statistical significance of the regression model's prediction of the outcome variable is indicated by the p-value of 0.043 in this case. Additionally, the dependent variable (IPV by CP in the industrial firms in Erbil city) is significantly impacted by the independent variable (ABC).

The regression model's f-test result indicates that the independent variable ABC significantly affects the dependent variable IPV by CR. This suggests that IPV through CP in the industrial firms in Erbil city is impacted by the studied industrial enterprises' reliance on the implementation of ABC. The macro-level analysis's findings show what follows.

The marginal slope coefficient (B1) is (0.342) and significant at the level of (0.05), meaning that a one-step change in the ABC technique causes a (0.342) change in IPV by CP in Erbil city's industrial firms. This is a significant change that can be depended upon to explain the relationship between the independent variable (ABC) and the dependent variable (IPV by CP in Erbil Soran city).

However, the value that comes from R2 is 0.29. which shows that the (ABC) technique is responsible for approximately (29%) of the change in IPV that occurs by CP; that is, the explanatory value of the independent variable in what happens to the responding variable amounted to (29%). This result also shows that other variables are responsible for the remaining effective percentage of (71%).

Therefore, all the data results from the table (4.4) indicated that the acceptance of the hypothesis (H1), which stated that ABC has a significant impact on IPV by CP because the correlation between ABC and CP from table (4.2) was insignificant so this study ignores the reasons for liner regression of CP.

Table 4 (4.4) regression model results between ABC and IPV by dimension CP. (Authors primary data).

Variables	Coefficient	Std. Error	T-value	P-value
constant	9.160	3.738	0.688	0.601
Competitive price	*** 0.342	0.407	0.089	0.043
$\overline{R}^2$	0.71			
R^2	0.29			
F-test (P-value)	1.42 (0.043)			

5. Conclusion And Recommendation

5.1. Conclusion

The study aimed to examine the impact of ABC on improving the value of products in industrial firms in Erbil City, Kurdistan Region, Iraq. The research findings indicate that the ABC technique has a significant positive correlation and impact with improving product value by reducing costs. Also. Indicate that significant correlation and positive significant with improve product value by competitive price. This suggests that ABC can be used as an effective tool for industrial firms to improve their product quality and competitiveness by reducing costs and competitive price.

This study used a survey questionnaire for collecting data on manufacturing firms in Erbil city. Also. Randomly distributed 125 questionnaire forms on specific employees and collecting 87 forms.

Overall, the study highlights the importance of using appropriate costing techniques in order to make informed decisions that can lead to improved profitability and cost efficiency for companies. By using ABC, managers can better understand the costs involved in producing their products or providing their services, and can take steps to eliminate non-value-added activities and optimize their cost structure.

4.2. Recommendation for future study

This research study applied simple regression analysis and stability tests to test the model's correlation and regression. The study findings revealed that the ABC technique indicates a

significant impact on manufacturing firms by reducing product costs for better product value. Specifically, the study recommends that future studies focus on a simple product by implementing real manufacturing data (secondary data) for analysis and indicating results. Also, this study recommends using a higher number of questionnaires in a wider range or a bigger city to reach a more accurate result about the impact of implementing ABC on product value.

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کاریگەری تێچوون لەسەر بنەمای چالاکییەکان لەسەر کەمکردنەوەی تێچوون

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پوختە

ئەم توێژینەوەیە لێکۆڵینەوە دەکات لە کاریگەری سیستمی تێچوون لەسەر بنەمای چالاکی لەسەر کەمکردنەوەی تێچوون و نرخی کێبڕکێکار لە ژمارەیەک کۆمپانیای پیشەسازی لە شاری هەولێری- هەرێمی کوردستانی عێراق . ئامانجی ئەم توێژینەوەیە لێکۆڵینەوەیە لە کاریگەرییەکانی چالاکییەکانی بنەمادار بە تێچوون لەسەر کەمکردنەوەی تێچوون و نرخی کێبڕکێکار. ئەم توێژینەوەیە شێوازی چەندایەتی بەکارهێنا بۆ دەستنیشانکردن و وەسفکردنی دەرەنجامەکان و پرسیارنامەیەکی ڕاپرسی بۆ کۆکردنەوەی زانیاری لەسەر کۆمپانیاکانی بەرهەمهێنان لە هەولێری هەرێمی کوردستانی عێراق. هەروەها. بە شێوەیەکی هەڕەمەکی ١٢٥ پرسیارنامەی بەسەر کارمەندانی کەرتی تایبەتدا دابەشکرد و ٨٧ پرسیارنامەی کۆکرایەوە. داتا کۆکراوەکان بە بەکارهێنانی بەرنامەی پاکێجی ئاماری بۆ زانستە کۆمەڵایەتییەکان (SPSS 26) شیکرانەوە کە مۆدێلی پەیوەندی سادەی و پاشەکشەی تاقیکردەوە. ئەنجامەکان پەیوەندی و کاریگەرییەکی بەرچاویان لە نێوان تێچوون لەسەر بنەمای چالاکیی و کەمکردنەوەی تێچوون، و پەیوەندی و کاریگەرییەکی بەرچاو لەگەڵ نرخدانانی کێبڕکێدا ئاشکرا کرد. مۆدێلەکە پشتڕاستکرایەوە بۆ ئەوەی تاقیکردنەوەی متمانەپێکراوی ڕوون بدات بە بەکارهێنانی تاقیکردنەوەی ئەلفا کرۆنباخ. سەرەڕای ئەوەش، مۆدێلی توێژینەوە بۆ ڕوونکردنەوەی پەیوەندی نێوان تێچوون لەسەر بنەمای چالاکیی و بەهای بەرهەم نیگەرانییەکان دەوروژێنێت.

وشە سەرەکییەکان: تێچوون لەسەر بنەمای چالاکییەکان، کەمکردنەوەی تێچوون، نرخی کێبڕکێکار

تأثير نظام التكاليف على أساس النشاط على خفض التكاليف

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المخلص

تبحث هذه الدراسة في تأثير نظام التكاليف على أساس النشاط على خفض التكاليف والتسعير التنافسي في عدد من شركات الصناعية في أربيل، إقليم كردستان العراق. الهدف من هذه الدراسة هو دراسة آثار الأنشطة القائمة على التكلفة على خفض التكاليف والأسعار التنافسية. استخدمت هذه الدراسة الأساليب الكمية لتحديد ووصف النتائج واستبيان مسح لجمع المعلومات عن شركات التصنيع في أربيل، إقليم كردستان العراق. أيضًا. التوزيع العشوائي لـ

125 استمارة استبيان على موظفي القطاع الخاص وجمع 87 استمارة. تم تحليل البيانات التي تم جمعها باستخدام برنامج الحزمة الإحصائية للعلوم الاجتماعية (SPSS 26) الذي اختبر نماذج الارتباط والانحدار البسيط. وقد توصلت النتائج إلى وجود علاقة ارتباط وتأثير معنوي بين التكاليف على أساس النشاط وخفض التكلفة وارتباط وتأثير معنوي مع التسعير التنافسي. تم التحقق من صحة النموذج لإعطاء اختبار ثبات واضح باستخدام اختبار ألفا كرونباخ. بالإضافة إلى ذلك، فإن نموذج البحث لشرح العلاقة بين التكلفة على أساس النشاط وقيمة المنتج يثير المخاوف.

الكلمات المفتاحية: التكلفة على أساس النشاط، تخفيض التكلفة، السعر التنافسي.