

**THE IMPACT OF ACTIVITY-BASED COSTING SYSTEMS ON COST REDUCTION DURING PANDEMIC. AN EXAMPLE OF AN INDUSTRIAL COMPANY LISTED ON THE AMMAN STOCK EXCHANGE**

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ARTICLE INFO	ABSTRACT
<p><b>Article history:</b></p> <p><b>Received</b> 20 February 2023</p> <p><b>Accepted</b> 08 May 2023</p>	<p><b>Objective:</b> The purpose of this study is to examine the impact of an activity-based costing system on cost reduction during the COVID-19 pandemic. An example of ASE.</p> <p><b>Theoretical framework:</b> a 42-item work-related cost scale and a 10-item cost reduction scale were applied to a random sample of 261 workers working in ASE.</p> <p><b>Design/methodology/approach:</b> The results show a positive impact and correlation between an activity-based costing system and cost reductions during the COVID-19 pandemic.</p> <p><b>Results and recommendations:</b> The study recommends enhancing the professional qualifications of financial managers, heads of accounting departments and accountants in Jordanian industrial companies by attending various professional courses.</p>
<p><b>Keywords:</b></p> <p>Activity-Based Costing Systems; Cost Reduction; Corona Pandemic; Industrial Company; Ase; Spss; Jordan.</p> <div data-bbox="172 1122 480 1368" style="text-align: center;">  </div>	<p>Doi: <a href="https://doi.org/10.26668/businessreview/2023.v8i5.2015">https://doi.org/10.26668/businessreview/2023.v8i5.2015</a></p>

**O IMPACTO DOS SISTEMAS DE CUSTOS BASEADOS EM ATIVIDADES NA REDUÇÃO DE CUSTOS DURANTE A PANDEMIA. UM EXEMPLO DE EMPRESA INDUSTRIAL LISTADA NA BOLSA DE VALORES DE AMMAN**

**RESUMO**

**Objetivo:** O objetivo deste estudo é examinar o impacto de um sistema de custeio baseado em atividades na redução de custos durante a pandemia de COVID-19. Um exemplo de ASE.

**Referencial teórico:** Uma escala de custos relacionados ao trabalho de 42 itens e uma escala de redução de custos de 10 itens foram aplicadas a uma amostra aleatória de 261 trabalhadores que trabalham na ASE.

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**Desenho/metodologia/abordagem:** Os resultados mostram um impacto positivo e correlação entre um sistema de custeio baseado em atividades e reduções de custos durante a pandemia de COVID-19.

**Resultados e recomendações:** O estudo recomenda o aprimoramento das qualificações profissionais de gerentes financeiros, chefes de departamentos de contabilidade e contadores em empresas industriais jordanianas por meio da frequência de vários cursos profissionais.

**Palavras-chave:** Sistemas de Custeio Baseados em Atividades, Redução de Custos, Pandemia de Corona, Empresa Industrial, Ase, Spss, Jordânia.

## EL IMPACTO DE LOS SISTEMAS DE COSTOS BASADOS EN ACTIVIDADES EN LA REDUCCIÓN DE COSTOS DURANTE LA PANDEMIA. UN EJEMPLO DE UNA EMPRESA INDUSTRIAL QUE COTIZA EN LA BOLSA DE VALORES DE AMMAN

### RESUMEN

**Objetivo:** El propósito de este estudio es examinar el impacto de un sistema de costeo basado en actividades en la reducción de costos durante la pandemia de COVID-19. Un ejemplo de ASE.

**Marco teórico:** Se aplicó una escala de costos relacionados con el trabajo de 42 ítems y una escala de reducción de costos de 10 ítems a una muestra aleatoria de 261 trabajadores que laboran en la ASE.

**Diseño/metodología/enfoque:** Los resultados muestran un impacto positivo y una correlación entre un sistema de costeo basado en actividades y las reducciones de costos durante la pandemia de COVID-19.

**Hallazgos y recomendaciones:** El estudio recomienda mejorar las calificaciones profesionales de los gerentes financieros, los jefes de los departamentos de contabilidad y los contadores en las empresas industriales jordanas asistiendo a varios cursos profesionales.

**Palabras clave:** Sistemas de Costeo Basados en Actividades, Reducción de Costos, Corona Pandemia, Empresa Industrial, Ase, Spss, Jordan.

### INTRODUCTION

The new technology of indirect cost allocation systems has led to the development of activity based systems. These systems allow companies to define costs more clearly for specific projects and services. Besides, new calculations have been created to determine costs thanks to these systems. Because of this new technology, these systems help companies calculate the costs of new products and services. In the initial stage of development, the activity based costing system was conceptualized by Cooper and Kaplan in 1987. This idea was derived from their research which proposed allocating overheads to product costs. Subsequently it inspired several other studies on indirect expenses, one of which the researchers consider to be the first. The same system helps organizations allocate indirect expenses to direct expenses

The ABC system was developed to overcome the shortcomings of traditional costing systems. This is because traditional systems were imprecise and ineffective in reducing costs per unit produced. Another reason is that they were missing information on the cost drivers that affected the cost of the product or service. Instead, the ABC system focuses only on those activities that add value to a product or service. This way organizations can accurately track cost, focusing only on activities that improve the value of products and services. This is because

traditional systems fail to provide accurate and effective control over indirect costs (Johnson & Kaplan, 2007,

ABC system is a concept of cost accounting based on the fact that all products, in order to be produced, require the existence of an organization, and the activities carried out by that organization require the costs incurred by that organization and the costs incurred by those products, which requires the allocation of costs to these product activities (Turney & Stratton, 2009, this study deals with indirect costs as one of the problems facing cost accounting in allocating indirect costs and determining the share of production units. Its results and degree of reliability and validity are generally accepted and agreed upon. There is a lack of product variety, and indirect costs represent a small proportion of total unit costs. However, due to the use of industrial automation and advanced computers in managing production processes, changes in working conditions and the high percentage of this factor highlight the inefficiency and ineffectiveness of decision-making for these systems in meeting the requirements of control and rationalization, so it is necessary to search for a system to help solve This problem, the solution is to switch to a system application (ABC)

Therefore, the question in this study is the use and application of the activity-based costing system and the role of applying this system in terms of cost rationalization in light of the Corona epidemic among the industrial companies listed on the Amman Stock Exchange, because the use of the activity-based costing system helps the difficult Jordanian company to continue In achieving this in a highly competitive product manufacturing environment, thus increasing profitability, which is reflected in increasing market share and increasing competitiveness, and based on the activities of these companies applied as an indication of the availability of the basic elements of the costing system.

## LITERATURE REVIEW AND HYPOTHESES

Previous studies have generally addressed the impact of ABC on the CR, and ASE accounting

Al-Natour (2011) research titled: "Using a time-driven activity-based costing model to develop cost management." The purpose of this study is to show the effect of untapped resources in a time-bound activity-based estimation cost model on the development and continuity of using the cost management system and to determine its effect on reducing product costs through the application of the time equation. For the purposes of the research, (iv) in addition to the field interviews, four inventory-based case studies were used to illustrate the

process of converting an activity-based model and a new resource cost allocation method; Researchers: A field study was conducted by selecting a representative sample of industrial companies in Amman and Zarqa, and the data necessary to apply the new methodology were collected, and the cost assigned to each resource was calculated by tracking the cost from the supplier directly to the source. cost site. As for the results of the study there are shortcomings in the current cost accounting system for Jordanian industrial establishments. Since most of these systems are designed in an environment different from the current situation, focus on maximizing the role of cost management for effective cost management and ensuring facility costs are minimized to ensure survival in a highly competitive market. And the importance of developing the activity-based costing method to activate its role in administrative use and assist management in making operational decisions. In the study, the researchers recommended further research into new ways of allocating resource costs across all industrial and service facilities, and suggested that there is a need for training courses for utility staff to keep abreast of scientific developments. Cost and management systems in the modern manufacturing environment and Tarawneh (2015) study entitled: The strategic role of applying the activity-based costing system: a field study for a pharmaceutical company operating in Jordan. This study aims to determine the strategic role of applying the activity-based costing system by conducting a field study of the pharmaceutical companies operating in Jordan; If the researchers used descriptive and analytical methods, and the study population included all pharmaceutical companies operating in Jordan, as there are (14) companies operating in the pharmaceutical industry in Jordan and registered with the Pharmacists Union, whether they are public or limited liability. To achieve the objectives of the research, a questionnaire was designed and distributed to the research sample, numbering (114) respondents. The results of the study show that the activity-based costing approach(ABC) focuses on activities as the main objective of costing, where the costs of these activities are used as small units which are aggregated to form a complete cost product. Fundamental to the design of a production system for any facility is the identification and analysis of the activities within each department. Likewise, cost factors in an activity-based costing (ABC) system provide more accurate results than a traditional allocation basis because each activity has an assigned cost center, unlike traditional systems that rely on a single center. The applied system (ABC), which allocates and defines costs, has proven to be more effective than traditional systems in achieving cost accounting objectives in measuring product costs, planning, controlling and making decisions. also (Sailaja et al., 2013) titled: Activity-Based Cost Management: An Effective Tool for Measuring Manufacturing Quality

Performance The activity cost accounting system is one of the modern manufacturing cost measurement management systems. This study sheds light on the activity-based costing system as one of the modern management systems. And its role in measuring, allocating and controlling the cost of quality properly, as most industries in many countries of the world are facing severe pressures from globalization and entry. Competition in many global markets forces these manufacturers to rely on a more flexible, automated and integrated approach to increase production while keeping costs as low as possible without compromising manufacturing quality to achieve maximum customer satisfaction. The results of this study show that the costing system plays a role based on activities in the process of allocating indirect costs and correctly linking them to products, and therefore, accurately allocating costs to these products, rather than being exorbitant and losing part of these costs. It means accurate pricing of products and being more competitive in the global market without compromising the quality of these products. In addition, this study shows that there is a role for the activity-based costing system compared to the traditional costing system as an effective system and tool for measuring, controlling and allocating quality costs accurately, and the activity-based costing system is an alternative system to overcome the shortcomings of the traditional costing method.

A study (Thomas 2014) entitled: Analyzing Health Care Business Using the ABCs of Analyzing Health Care Operations Using Activity-Based Costing. Its ability to provide appropriate information relating to the Services. Provided cost, which is helpful in the decision-making process. Internal decisions, especially with regard to service pricing decisions. On the other hand, this study also aims to clarify and define the role played by activity-based costing fair information from which costs can be determined. The true nature of the services provided, and costing model into a time-bound costing the resulting pricing correctness, allows for more accurate decision-making with the information provided by the system, which the researchers achieved through the application to the hospital, using the application prescribing method. For the purposes of this study Patients were divided into three sections representing target cost, namely emergency, non-emergency, and auditor. The activity-based costing system is applied at all stages, starting with the process of determining the cost of the main activities and ending with determining the cost of the services provided. One of the results achieved is that the activity-based costing system integrates all accounting procedures with all operations of the facility. Activity based costing systems provide more accurate information for decision making. It was also found that users will gain a greater understanding of the different programs, which will allow them to make proactive adjustments that will increase performance effectiveness.

Activity-based costing systems enable managers to stand on the real and accurate cost of various services and various activities, which helps to manage these activities more effectively and motivates them to exert more effort and focus on the effective use of resources. Study (Newman 2014) entitled: Managing the cost of information technology activities and services using ABC Cost management with activity-based costing and information technology services. This study aims to apply the activity-based costing system as an alternative to the traditional system to find and develop new ways to manage and control costs. Other industries such as transportation, insurance...etc. The study resulted in a series of results, the most important of which is that the activity-based costing system is an accurate tool for managing costs and measuring costs with high efficiency and accuracy, especially in the context of globalization and the background of modern economic trends. In a very competitive market.. One of the most important recommendations of the study is the need to focus on applying this new system that helps to redesign the activities of any type of institution in a new way, by eliminating and excluding unnecessary activities and preserving the necessary activities, and thus contributing to the fair and accurate allocation of resources for products and company services.

Study (Tam 2014) entitled: Hajj Manufacturing in Calculating Activity-Based Costing Manufacturing Supply and Activity-Based Costing. This study discusses the activity-based costing system and explains the components and requirements of its application and method of operation, and then compares it with the current and applicable systems after identifying its shortcomings. Factory visits and interviews with each manager and accountant to design an activity-based costing system, after which indirect costs can be allocated by the business team describing and classifying the activities in each plant and then creating cost summaries. Allocation of indirect costs from traditional methods to the actual application of the system of activities on the basis of the sequence in which costs flow from resources to activities to products without increasing the number of activities. The study (David, et al, 2015) entitled: More effective management with activity-based costing. More efficient management with activity-based costing system. The purpose of this study is to identify the application of cost accounting systems according to the activities of government agencies and non-profit organizations. Since the decisions made at the academic department level are those that affect the total cost of the university from a research perspective, in order to show and define how an activity-based costing system can provide process-related information to improve decision-making, especially because one of the goals of these institutions is to determine cost of output and improving its quality. Through their study, the researchers identified cost pools at the level

of the departments where the research is being conducted, that is, the graduate schools. In addition to allocating costs in the cost pool at the undergraduate level and in major educational activities such as education, research and public services, there is a need to identify appropriate cost drivers through which the researcher can allocate indirect costs to the sectors under study, i.e. PhD programs and Masters programs. The cost of each project is reduced separately as per activity based cost allocation system. Therefore, the study raises the following main hypotheses,

Ho: applying the activity-based costing system and its components (appropriately planned, adequately analyzed, adequately accepted and approved, sufficiently trained, widely used) at the significance level ( $0.05 \geq \alpha$ ) had no statistically significant effect on cost rationalization. Given that the Corona epidemic is affecting Jordanian industries, hence the following sub-assumptions:

Ho1: there was no statistically significant effect at the significance level ( $0.05 \geq \alpha$ ) on the application of the activity-based costing system for the appropriate planning component to rationalize costs in view of the Corona pandemic in industrial companies in Jordan

Ho2 :at the level of significance ( $0.05 \geq \alpha$ ), the sufficient elements of the analysis do not have any statistically significant effect on rationalizing the cost of applying the activity-based costing system in the Corona pandemic in industrial companies in Jordan

Ho3: elements of acceptance and approval do not have a statistically significant effect at the significance level ( $0.05 \geq \alpha$ ), which is sufficient to adopt and apply the activity-based costing system in the context of the Corona epidemic in industrial companies in Jordan. to rationalize the cost

Ho4: At the level of significance ( $0.05 \geq \alpha$ ), the appropriate training component did not have any statistically significant effect on the cost rationalization of applying the activity-based costing system during the Corona pandemic in Jordanian industrial companies

HO5: Considering the impact of the corona pandemic on industrial companies in Jordan, the effect of widespread use of activity-based costing systems on cost rationalization was not statistically significant at the significance level ( $0.05\alpha$ )

## RESEARCH METHOD

Specifically, the research methodology includes research design, target audience, sampling design and procedures, data collection tools, validity and reliability of research tools, and data analysis. Design The study was conducted using a quantitative cross-sectional descriptive design to assess the impact of an activity-based costing system on cost reduction during the coronavirus epidemic in Jordan, a survey of industrial companies listed on the Amman Stock Exchange.

### Settings

The study was conducted in Jordan and covered industrial companies listed on the Amman Stock Exchange in 2023.

### Sampling

The object of this study is the employees of industrial companies listed on the Amman Stock Exchange. This study uses a reasonable sampling method to collect data. It is a special type of non-probability sampling based on collecting data from a population that is convenient to participate in the study at the time of data collection and inviting each participant to participate in the study. The research sample consisted of 261 employees working in industrial companies listed on the Amman Stock Exchange in Jordan. A total of 297 questionnaires were collected, of which 261 were valid for analysis.

### Study Resources

The researchers used primary sources: numerous journals, articles, reports, theses, dissertations and books devoted to the theoretical part of this study. And Secondary Data: In this study, an instrument (questionnaire) was used to collect data from the research sample.

### Instruments of the Study

A questionnaire was developed to collect data from the intended sample. The questionnaire was divided into three sections;

- (i) Demographic section which include the respondent's Demographic information (Gender, Age, Experience, Educational level).

- Independent variable dimensions representing five dimensions: **Adequate Planning (AP)**, **Adequate Analysis (AA)**, **Acceptance and approval (A & A)**, **Adequate Training (AT)**, **Wide Use (WU)**.

(iii) Dependent variable, includes: **REDUCING COSTS (RC)**

Researcher has used five likert scales as a methodology in order to answer the study items: Strongly Agree (5 point), Agree (4 point), Neutral (3 point), Disagree (2 point), and Strongly Disagree (1 point).

### Validity

The questionnaire was developed and tested by a committee of experts in the competency area as it was distributed to nine experts after the researchers developed the questionnaire and distributed to universities in Jordan. A committee reviewed the questionnaire and provided an opinion on its suitability for the research objectives and the extent to which items were relevant to the dimension the researcher was dealing with, where items were added, removed or modified, and the researcher then returned and made these observations and produced a final copy, and then test its validity from where those observations were made.

### Reliability

Cronbach Alpha test has been conducted in order to test the reliability of the questionnaire. Table 1 indicates that alpha value ranged between (0.79 – 0.85), which indicates that the questionnaire is suitable for scientific research purposes, because alpha value is more than (0.6) (Zikmund, 2013).

Table 1 Reliability test

Variable	Cronbach's Alpha
Adequate Planning (AP)	0.77
Adequate Analysis(AA)	0.79
Acceptance and approval (A & A)	0.82
Adequate Training (AT)	0.85
Wide Use (WU)	0.80
<b>REDUCING COSTS (RC)</b>	<b>0.88</b>

### Multicollinearity

To evaluate multiple regression analyses, tests for multicollinearity must be considered. Multicollinearity is considered a statistical phenomenon in multiple regression analysis. This occurs when one or more independent variables are highly correlated with one

or more other independent variables. Multicollinearity occurs when two or more independent variables are highly correlated (positively or negatively). In this study, variance inflation factor (VIF) and tolerance metrics were used to test for collinearity, as they are the most commonly used metrics for assessing multicollinearity.

As shown in Table 2, the tolerance of all independent variables is greater than 0.10 and the VIF value is less than 2.5. It is concluded that multicollinearity in the regression analysis within the collected data is not a problem (Kaiser, 1981).

Table 2 Multi-Collinearity test

Variables	Tolerance	VIF
Adequate Planning (AP)	0.749	1.335
Adequate Analysis(AA)	0.670	1.493
Acceptance and approval (A & A)	0.616	1.623
Adequate Training (AT)	0.444	2.252
Wide Use (WU)	0.503	1.988

## Descriptive Analysis

This section shows the analysis of sample demographic variables as follows:

Table 3 Demographic Variables: N=261

Variable		Frequency	Percentage %
<b>Gender</b>	<b>Female</b>	101	38.7
	<b>Male</b>	160	61.3
	Total	261	100.0
<b>Experience</b>	Less than 5 years	65	24.9
	5 – less than 10 years	61	23.4
	10 years and more	135	51.7
	Total	261	100.0
<b>Educational level</b>	Bachelor	154	59.0
	High education	107	41.0
	Total	261	100.0

## Data Analysis Procedure

The Statistical Package for the Social Sciences (SPSS-IBM) was used to run descriptive and inferential statistics. Diagnostic tests (normality, reliability, and multicollinearity) were used to test the validity of research data and instruments (surveys). Descriptive analysis is used to describe continuous variables in terms of mean and standard deviation. Frequency distributions and percentage values are used for discrete variables. In addition, with the P value fixed ( $P \leq 0.05$ ), multiple regression analysis (stepwise) was performed to examine the effect. The results are presented using tables and text in the results below.

## Results

The purpose of this chapter is to analyze the data collected through a questionnaire; the questionnaire was aimed at employees of industrial companies listed on the Amman Stock Exchange in Jordan. Subjects in the sample were asked to answer questionnaire items related to their views and experiences. First, obtain the means and standard deviations associated with the sample responses for all variable items. Then, multiple regression analysis (stepwise) was performed to determine the effect of the independent variable on the dependent variable.

Table 4 Means and standard deviations were calculated for all questionnaire items (independent variable)

No.	items	Mean	Std. Deviation	Rank	Level
A6	The company sets download rates to implement activity-based costing.	4.15	0.79	1	High
A5	The company sets clear and accurate plans for the nature of the work, and supervises the application of the activity-based costing system.	4.13	0.80	2	High
A1	The company develops clear and precise strategies for the planning process; To apply the activity-based costing system.	4.08	0.84	3	High
A7	The company considers the causal relationship between those costs and the activities that cause them in charging the indirect cost components and multiple charging rates.	4.08	0.82	4	High
A9	The company follows the best and effective method. To ensure the quality and speed of progress in completing tasks related to the implementation of the activity-based costing system.	4.06	0.86	5	High
A4	The company is guided by the causal relationship between the indirect cost elements and the activities that caused them to eliminate the activities that do not add value.	4.05	0.84	6	High
A2	The company conducts a comprehensive survey of the activity-based costing system before preparing the field work implementation plan.	3.99	0.77	7	High
A3	The company focuses on the use of advanced technical means and modern methods in the planning process to implement the costing system based on activities	3.92	0.84	8	High
A8	The company determines the price of materials according to supply and demand factors, and not based on their cost when applying the activity-based costing system.	3.90	0.85	9	High
	<b>Adequate Planning (AP)</b>	<b>4.04</b>	<b>0.55</b>		<b>High</b>
A11	The company conducts a comprehensive survey of the activity-based costing system before preparing the field work implementation plan.	4.07	0.81	1	High
A10	The company develops clear and precise strategies for the planning process; To apply the activity-based costing system.	4.02	0.79	2	High
A17	The company determines the price of materials according to supply and demand factors, and not based on their cost when applying the activity-based costing system.	3.97	0.85	3	High
A15	The company sets download rates to implement activity-based costing.	3.95	0.81	4	High
A16	The company considers the causal relationship between those costs and the activities that cause them in charging the indirect cost components and multiple charging rates.	3.93	0.85	5	High

No.	items	Mean	Std. Deviation	Rank	Level
A14	The company sets clear and accurate plans for the nature of the work, and supervises the application of the activity-based costing system.	3.90	0.94	6	High
A12	The company focuses on the use of advanced technical means and modern methods in the planning process to implement the costing system based on activities	3.68	0.88	7	High
A13	The company is guided by the causal relationship between the indirect cost elements and the activities that caused them to eliminate the activities that do not add value.	3.48	1.02	8	High
	<b>Adequate Analysis(AA)</b>	<b>3.87</b>	<b>0.63</b>		<b>High</b>
A21	The company trains employees to study and evaluate the internal control system in a detailed and comprehensive manner.	4.30	0.70	1	High
A22	The company's employees have the ability to determine the type of tests needed when applying the activity-based costing system	4.30	0.69	1	High
A20	The company encourages employees to use modern technical means and methods of work in order to understand and evaluate the internal control system.	4.23	0.69	3	High
A23	Workers have the ability to use modern technical means and methods in the activity-based costing system.	4.16	0.81	4	High
A24	The company uses decision tables and graphic methods to arrive at the decision in a logical manner to document and understand the internal control system	4.16	0.78	4	High
A25	The employees have the ability to keep abreast of developments and developments, and the requirements imposed by international standards for the application of the activity-based costing system.	4.16	0.83	4	High
A19	The company is keen to diversify the methods of studying and evaluating the internal control system in order to benefit from the advantages of the various methods and reduce their defects.	4.01	0.81	7	High
A18	The company compares the results reached with the planned ones when applying the activity-based costing system	4.00	0.74	8	High
	<b>Acceptance and approval (A &amp; A)</b>	<b>4.17</b>	<b>0.56</b>		<b>High</b>
A27	The company uses the professional specialization strategy in applying the activity-based costing system.	4.39	0.79	1	High
A31	The company requires the availability of the appropriate educational qualification and professional experience for the employees to implement the activity-based costing system.	4.28	0.96	2	High
A26	The company selects qualified individuals, who have the necessary professional qualities and process..	4.25	0.79	3	High
A33	The company provides regular courses (internal or external) to improve the performance of employees, and develop their abilities to apply the activity-based costing system.	4.25	0.80	3	High
A28	The company motivates and encourages employees to obtain specialized professional certificates.	4.08	0.93	5	High
A29	he company sends some employees to attend conferences and seminars related to the application of the activity-based costing system.	3.93	0.99	6	High
A30	The company is keen on the availability of appropriate professional competence and technical and cognitive skills among employees to implement the costing system based on activities	3.85	1.05	7	High
A34	The company links incentives and promotions to the keenness of employees to develop and develop their knowledge and	3.64	1.03	8	High

No.	items	Mean	Std. Deviation	Rank	Level
	professional abilities to apply the costing system based on activities.				
A35	The company encourages establishing relationships with international companies to exchange experience and knowledge.	3.58	1.08	9	High
A32	The company works to provide sufficient experience for employees to apply the activity-based costing system.	3.57	1.21	10	High
	<b>Adequate Training (AT)</b>	<b>3.98</b>	<b>0.67</b>		<b>High</b>
A41	he company requires employees to fill out a declaration and certain forms periodically about their knowledge of the policies and procedures for applying the activity-based costing system.	4.19	0.82	1	High
A40	The company relies on providing various personal experiences and skills related to the application of the activity-based costing system.	4.17	0.84	2	High
A39	The company is committed to obtaining written decisions from management about material matters for the financial statements	4.10	0.77	3	High
A42	The company exercises appropriate supervision from the beginning of planning until the completion of the control work of the activity-based costing system, and the preparation of reports on it.	3.98	0.89	4	High
A37	The company uses an activity-based costing system to implement total quality systems.	3.15	1.17	5	Medium
A36	The company uses an activity-based costing system to implement advanced management systems..	3.04	1.19	6	Medium
A38	The company uses computers to help implement the activity-based costing system.	2.96	1.21	7	Medium
	<b>Wide Use (WU)</b>	<b>3.65</b>	<b>0.66</b>		<b>High</b>

Table 4 shows that means of subjects' responses regarding the items that measure **(activity-based costing system)** were ranged from (2.96-4.15), and the grand mean was (3.95) with standard deviation (0.50).

Table 5 Sample's Responses Regarding the Reducing Costs (RC)

No.	items	Mean	Std. Deviation	Rank	Level
A46	The application of the activity-based costing system reduces the time for providing services and adapts what is possible according to market demand	4.40	0.79	1	High
A43	The application of the activity-based costing system contributes to the reduction of the previous actual cost or the standard cost	4.08	0.83	2	High
A44	The application of the activity-based costing system contributes to reducing the cost of services provided.	4.02	0.84	3	High
A47	The application of the activity-based costing system contributes to a better use of financial allocations.	3.92	0.94	4	High
A52	The application of the activity-based costing system contributes to controlling the time of providing the service in its final form to customers	3.92	0.89	5	High
A50	The application of the activity-based costing system contributes to not exceeding the planned costs in the company's budget and maintaining costs within the limits set for them	3.87	1.00	6	High

No.	items	Mean	Std. Deviation	Rank	Level
A45	The application of the activity-based costing system provides information that helps the company in making economic decisions.	3.85	0.92	7	High
A51	The application of the activity-based costing system helps to allocate the estimated revenues in the company's planning budget.	3.85	0.95	8	High
A49	The application of the activity-based costing system contributes to improving the efficiency of the company's investment and operational policies.	3.42	1.13	9	High
A48	The application of the costing system based on activities increases the achievement of a high financial return on the equity of the shareholders in the company.	3.16	1.16	10	Medium
	<b>Reduction Cost</b>	<b>3.85</b>	<b>0.64</b>		<b>High</b>

Table 5 shows that the subjects' responses to the measured items (Reduction Cost ) have a mean score range of (3.16 - 4.40), an overall mean of (3.85), and a standard deviation of (0, 64).

### Pearson Correlation

Pearson's correlation coefficients are used to determine the correlations between study independents variables. The results obtained in the table of correlation matrix shows positive and significant correlation between all independent variables (AP, AA, A & A, AT, WU).

Table (6): Correlation among independents variables

Variables	AP	AA	A & A	AT	WU	RC
AP	1	.755**	.650**	.501**	.468**	.476**
AA		1	.717**	.563**	.476**	.523**
A & A			1	.620**	.388**	.485**
AT				1	.698**	.759**
WU					1	.710**

\*\* . Correlation is significant at the 0.01 level (2-tailed).

### Hypotheses Test

Table 7 Stepwise Multiple Linear Regression

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df 1	df 2	Sig. F Change	
AT	.759 <sub>a</sub>	0.576	0.574	0.41870	0.576	351.305	1	259	0.000	
WU	.799 <sub>b</sub>	0.639	0.636	0.38692	0.063	45.295	1	258	0.000	

AA	.804 <sub>c</sub>	0.646	0.641	0.38410	0.007	4.799	1	25 7	0.029	1.802
Model	Unstandardized Coefficients			Standardized Coefficients		t	Sig.			
	B	Std. Error	Beta							
3	(Constant)	0.481	0.168			2.859	0.005			
	AT	0.449	0.053	0.469		8.410	0.000			
	WU	0.325	0.051	0.335		6.407	0.000			
	AA	0.101	0.046	0.099		2.191	0.029			

- **H0:** Activity costing methods (AP, AA, A&A, AT, WU) have no significant impact on the level of activity costing methods for employees of industrial companies listed on the Amman Stock Exchange in Jordan ( $\alpha \leq 0.05$ ).

A stepwise multiple linear regression was performed to test the main research hypothesis (H0) as it is considered a method that helps predict the value of the dependent variable or the outcome of the independent variable.

Dependent Variable: RC

Table 8 shows the R value = (0.804), which refers to the correlation of the independent activity-based costing system (AA, AT, WU) and the dependent activity-based costing system. The table shows that the relationship between these variables is significantly positive.

- This calculates the goodness of fit of the model. R-squared, known as R-squared, is defined as the percentage of the variance of the dependent variable that is explained by changes in the independent variables. The  $R^2$  (determination ratio) is (0.646), which means that 64.6% of the variance in the activity-based costing system variables can be explained and predicted by the activity-based costing system (AA, AT, WU).
- The results also showed that the data had an F ratio of 42.9, which was significant at  $p < 0.05$ . However, from the above table we can see that the significance value is equal to (0.00), and therefore less than 0.05, indicating that the main hypothesis (null hypothesis) is rejected, and the activity-related effects of the significant cost accounting system (AA, AT, WU) to Activity-related costing system levels ( $\alpha \leq 0.05$ ) for employees of Jordanian industrial companies listed on the Amman Stock Exchange.
- **H0.2:** Adequate Analysis (AA) has no significant impact on the operating cost accounting system of industrial enterprises listed on the Amman Stock Exchange in Jordan ( $\alpha \leq 0.05$ ).
- The preceding multiple regression shows that the beta coefficient of (AA) is equal to (0.101), which means that 10.1% of the variance in the Activity Based Costing

system variable can be explained and predicted by (AA). The results also showed a t-ratio of (AA) of 2.191, which was significant at  $p < 0.05$ . However, we can see from the above table that the significance value of (AP) is equal to (0.000), which is less than 0.05, which means that the second sub-hypothesis is rejected (null hypothesis), and there is a significant impact (AA) on the Systematic effects ( $\alpha \leq 0.05$ ) on activity-related costs of employees of Jordanian industrial companies listed on the Amman Stock Exchange.

- **H0.4:** Adequate training (AT) has no significant effect on the activity costing system level ( $\alpha \leq 0.05$ ) of employees of Jordanian industrial companies listed on the Amman Stock Exchange.

- The preceding multiple regression shows that the beta coefficient of (AT) is equal to (0.449), which means that 44.9% of the variance in the Activity Based Costing system variable can be explained and predicted by (AT). The results also showed a t-ratio of (AT) of 8.410, which was significant at  $p < 0.05$ . However, we can see from the above table that the significance value of (AT) is equal to (0.000), which is less than 0.05, indicating that the fourth sub-hypothesis is rejected (null hypothesis), which has a significant impact on (AT) on Amman Securities Trading Systematic impact ( $\alpha \leq 0.05$ ) on activity-related costs of employees of listed Jordanian industrial companies.

- **H0.5:** Wide Use (WU) has no significant impact on the activity-related cost system of industrial enterprises listed on Amman Stock Exchange in Jordan at this level ( $\alpha \leq 0.05$ ).

- The preceding multiple regression shows that the beta coefficient of (WU) is equal to (0.325), which means that 32.5% of the variance in the Activity Based Costing system variable can be explained and predicted by (WU). The results also showed a t-ratio of (WU) of 6.407, which was significant at  $p < 0.05$ . However, from the above table we can see that the significance value of EPA is equal to (0.000), **thus less than 0.05, which means that the fifth sub-hypothesis is rejected (null hypothesis) and has a significant effect (WU) on the Effects of activity-related cost regimes ( $\alpha \leq 0.05$ ) on employees of listed Jordanian industrial companies.**

## RESULTS AND DISCUSSION

The results showed that the relationship between the independent variables and the dependent variable is positive, through the results of the study shown in the process of

discussing the results, R-squared, is defined as the percentage of the variance of the dependent variable that is explained by changes in the independent variables. The R<sup>2</sup> (determination ratio) is (0.646), which means that 64.6% of the variance in the activity-based costing system variables can be explained and predicted by the activity-based costing system. The results also showed that the data had an F ratio of 42.9, which was significant at  $p < 0.05$ . From the above table we can see that the significance value is equal to (0.00), and therefore less than 0.05, indicating that the main hypothesis (null hypothesis) is rejected. The activity-related effects of the significant cost accounting system (AA, AT, WU) to Activity-related costing system levels ( $\alpha \leq 0.05$ ) for Jordanian industrial companies listed on the Amman Stock Exchange.

Adequate Analysis (AA) has no significant impact on the operating cost accounting system of industrial enterprises listed on the Amman Stock Exchange in Jordan. The results also showed a t-ratio of (AA) of 2.191, which was significant at  $p < 0.05$ . The results also showed a t-ratio of (AA) of 2.191, which was significant at  $p < 0.05$ . adequate training (AT) has no significant effect on the activity costing system level ( $\alpha \leq 0.05$ ) of employees of Jordanian industrial companies listed on the Amman Stock Exchange. The results also showed a t-ratio of (AT) of 8.410, which was significant at  $p < 0.05$ . The results also showed a t-ratio of (AT) of 8.410, which was significant at  $p < 0.05$ . Wide Use (WU) has no significant impact on the activity-related cost system of industrial enterprises listed on Amman Stock Exchange in Jordan at this level. The preceding multiple regression shows that the beta coefficient of (WU) is equal to (0.325), which means that 32.5% of the variance in the Activity Based Costing system variable can be explained and predicted by (WU). All previous studies (Al-Natour (2011), (Tarawneh (2015) (Sailaja et al., 2013), (Sailaja et al., 2013), (Newman 2014) addressed the same subject, with the exception of the sectors studied and assessed and the time of study.

## RECOMMENDATIONS

In light of the present findings, the researchers made several recommendations to Jordanian industrial companies, which are:

1. Jordanian industrial enterprises conducted a comprehensive study on activity-based costing before formulating an implementation plan for field visits.
2. Highlight Jordanian industrial companies by identifying the burden rate of applying the activity-related calculation system and the direction of causality between indirect cost elements and activities that lead to their separation from non-value-added activities

3. Jordan Industries had a clear and precise strategy during the planning process. Application of performance-related cost systems.
4. . Up skilling Jordanian industrial company workers to determine the type of testing required when are applying an activity-based costing system.
5. Strive to provide workers with the appropriate professional competencies and technical and cognitive skills to apply an activity-based costing system.
6. To enhance the professional qualifications of financial managers, heads of accounting departments and accountants of Jordanian industrial companies by engaging them in various professional courses.

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