

## Activity-based Costing Accounting System and Government Services Efficiency

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### Abstract

The objective of this research is to investigate the Activity-based Costing accounting system and Jordan's efficiency of government services. ABC systems were also influenced to improve and evolve in order to increase the efficiency of government services. The study's sample consists of 182 questionnaires completed by Jordanian government employees. The study revealed that the Activity-based Costing accounting system has a significant impact on the efficiency of Jordan's government services. Furthermore, the study revealed an Activity-based Costing accounting system for all levels as a way to improve government service efficiency and crucial to accomplishing efficiency both in the short and long run, as well as the need to just have accounting systems that abide by international financial reporting standards, which seem to be critical inside any accounting part.

**Keywords:** ABC, Services Efficiency, Government, Jordan.

### Introduction

The origins of the activity-based costing system may be traced back to the early 1980s as a technique for regulating the issues of traditional costing methods in the face of competing for economic conditions (Quesado and Silva, 2021). The Activity-based Costing accounting system includes activities that use resources, such as expenses, rather than products, which solely consume activities. Consequently, the items engage in activities to carefully make them in order to satisfy the wants and expectations of the customers. The system has evolved through time and can now support the company's strategic vision by recognizing its strengths, weaknesses, and feasible prospects that add up or do not add up, therefore reflecting the organizational dynamics that affect costs with greater precision (Hansen et al., 2021; Crouch et al., 2021; Haroun, 2015). Traditional management control systems have come under fire in recent years for failing to fulfill modern social demands and provide services for overall organizational growth. With these unusual circumstances, the development of activity-based costing systems becomes essential. This emphasizes the need

to appropriately manage the resources at an individual's disposal efficiently and effectively (Charter and Tischner, 2017; Cosgrove and Loucks, 2015).

The governments, with appropriate administration, execute the same with the ultimate goal of boosting some success to the general growth in the end. However, the system has recently faced severe issues or concerns regarding the effectiveness of government services, which is critical in any nation or city since both federal and municipal governments require an effective accounting system. Some of the major issues that have been raised and require a solution or the establishment of a gap are the general weighing of the given needs before adopting the given ABC, which is currently used in situations involving overhead and indirect costs, and problems encountered during implementation of the given services, which are always unplanned and treated as emergencies.

The other type of gap or issue that has been encountered and requires adequate investigation is the issue of critical success factors in service delivery and management by relevant government bodies while implementing the given ABC, as well as other necessary steps that the government must take to improve the efficiency of the services being delivered daily (Johnstone, 2021). As a result, the study attempted to establish the given factors influencing the application of the ABC based on the efficiency of government services in developing countries while taking the Jordan government into account, which is also what it takes in the implementation of an ABC.

The research's goal was to determine the impact of using the ABC on the efficiency of government services, using the Jordan government as a case study. Similarly, to demonstrate the benefit of the ABC on the efficiency of government services. Likewise, to identify the unique issue encountered in the implementation of the ABC on the efficiency of government services. Furthermore, to critically evaluate the key success factors required for the implementation of an ABC on the efficiency of government services, in addition, to investigate the process involved in executing the ABC on the efficiency of government services.

The study contribution of the ABC to the effectiveness of government services is critical, especially when it comes to accountability, planning, and openness, all of which are major components of international financial reporting standards. Therefore, the study was crucial in identifying given difficulties, obstacles, and successes that come with the application of the same on the efficiency of government services. The rest of this paper is structured as follows: Section 2 explores the literature; Section 3 gives the research data, population, model, and methods; Section 4 presents the results; and Section 5 concludes the study.

### **Literature Review**

The section highlights the various empirical and theoretical studies about ABC and its efficiency towards effective management, accountability, and planning, which is a key factor in any accounting technique as highlighted in the international financial reporting standard framework. Besides, it also provides a thorough empirical analysis which is a significant step in undertaking any kind of research, both scientific and social research.

Niasti et al (2019) claim that the ABC approach eliminates biases in standard cost accounting systems and gives more representative costing metrics for better decision-making. The ABC method has been dubbed one of the most significant management breakthroughs in the previous century (Attanayake, and Aktan, 2015). It is a cost management method that shifts management focus away from the conventional emphasis on short-term planning, monitoring and making decisions, and product costing and toward a more integrated, strategic, and competitively sensitive approach to corporate cost structures (Quesado and Silva, 2021).

Consequently, the ABC system has evolved into an essential instrument for improving competitiveness in corporate organizations as efforts are made to embrace new methods of allocating overhead expenses when determining the costs of products or other cost items. The ABC system is not a new concept in accounting. This ABC approach is commonly known among accountants (Bozorgmehriana et al, 2012). Many businesses have utilized the ABC approach effectively to adjust their pricing structure or better manage their resources. The advantages of a well-structured ABC system go beyond having a better awareness of expenses. Because the ABC approach primarily focuses on the operations necessary to achieve corporate objectives, it pushes managers to increase activity efficiency and eliminate or reduce operations that do not provide value (Nielsen, 2022). ABC/management distribution (Mahal and Hossain, 2015). The information acquired from the ABC system has been used for product pricing, procuring, new product development, and product profitability analysis (Lu, et al, 2017). product mix selection (Baki and Cheng, 2021; Homburg et al, 2018). Customer profitability analysis (Bataneh, 2018). the expense of quality analysis (Tran, and Tran, 2022). decision on joint goods (Mowen et al., 2022). environmental management (Viranda et al., 2020). Project management (Kusuma and Bima, 2022), software development (Lee et al., 2022), etc.

Studies on the effectiveness of government services have evolved in four major areas. To begin, several studies have focused on measuring and improving efficiency in practical applications, frequently focusing on certain sorts of government services in a single country. Second, government efficiency has been addressed quantitatively, using statistics on government service inputs but not outcomes. Third, several studies have evaluated the efficiency of public services based on outputs rather than inputs. Finally, several examined both inputs and outputs; however, these studies have not consistently compared the efficiency of government services across countries.

Making (2020) analyzed the effectiveness of the ABC on decision-making, using a sample of 38 companies listed in Iraq's Kurdistan region, based on the overall presumption and the requirement to improve the overall dependence on the accounting system while taking into account operation costs, competitiveness, and basic managerial improvement. The research also assumed some level of responsibility in general. According to Kumar and Mahto (2013), implementing an ABC is vital for decision-making and, more significantly, reaching conclusions and making judgments in general. However, the study noted that the ABC and ERP processes overall had certain limitations.

Demdoum et al (2021) recently researched the use of the ABC accounting system and its utility in the environmental accounting approach, which is directed toward the green economy, particularly in the areas of Digital Strategy, Governance, and Organizational Restructuring. Likewise, according to Danish and Antonides (2013), there is a large direct association between the ABC accounting system and the green economy and accountability, which is a big concern. However, the researchers noted that several crucial characteristics are difficult and unfeasible, limiting their efficacy and maybe limiting some degree of efficiency in the government administration of public services and products (Loayza and Pennings, 2020; Igalla et al., 2020).

Tran and Tran (2022) investigated the various factors that affect the application of an Activity-based Costing accounting information system on government efficiency in a transition phase country using a quantitative approach via a logit regression model and a sample of 71 publicly traded pharmaceutical industries in Vietnamese in 2017. Tran and Tran (2022) pointed out that the application of an ABC is significant in determining factors such as indirect costs incurred, price fixation, and diversified various facets in the firm and whether they have a positive impact on the decision-making of the given firm as they do have some appropriate information that can be used for overall decision making among other important factors indeed thereby having an important.

Madwe et al (2020) used a quantitative methodology and data from various institutions to investigate the factors that impact the adoption of an ABC in government training and educational institutions in South Africa. According to Sun, et al, (2019), there is some efficacy in the approach to the inefficiency of government institution management. All of this, however, is dependent on the management's effective adoption and public acceptance, as well as its proper implementation, which is dependent on human resource development. As a result, the study concluded that it always leads to efficiency, but all of this is dependent on numerous management and adoption variables, among other essential aspects in general.

Vetchagool et al (2021) investigated the influence of the ABC accounting system on the general organization's performance in delivering services based on the degree of quality management and excellence in enterprises that used BAC and Non-ABC accounting systems. The findings of Sedevich-Fonts (2018) revealed some favorable benefits of ISO 9000 and the Activity-based Costing accounting methodology. They said that the same has some degree of influence on the overall performance of government and private organizations in terms of service delivery, which is a significant factor, as well as in having some beneficial design for the overall improvement in performance level.

After reviewing the previous studies and the theories related to the subject of this research, and based on the research question and its objectives, this study is based on the following hypothesis:

*H0: There is a statistically significant relationship between the Activity-based Costing accounting system and government services efficiency in Jordan.*

**Research Methodology**

The section highlights the various methodological approaches that the study adopted in evaluating the general effect of applying the ABC on the efficiency of government services in Jordan. Besides, the methodological approach does act as an overview of what the research plan to undertake in the general study, which is also a significant factor (Sybing, 2022). Some of the significant factors that the study did undertake include research design, sampling and sampling technique, data methods, and ethical consideration among other key factors indeed.

The study did undertake a quantitative research design given the study used quantitative data collected using a research survey. The major aim of using the quantitative study was to evaluate the significant relationship that exists between the respective ABC and the efficiency of government services in Jordan. Besides, the study adopted the general positivism research philosophy in establishing the cause-and-effect relationship and enhancing the establishment of the given objectivity, reliability, and thus the general findings used for decision-making and general forecasting, among other key factors (Lehtonen, 2021).

The sampling technique is a key factor in the general study which is a vital factor among other significant factors. The study did adopt the purposive sampling technique which is a non-probabilistic sampling and enables the researcher to rely on objective factors and general conclusion when deciding on the members of the population to be considered to participate in the survey to avoid arriving at some of the biased and spurious results which are insignificant (Kulkarni, 2020). The participants chosen in the survey were chosen to have some specific results which are significant towards the general enhancement of the key factors and general ability to decide on the key factors to be undertaken I general achievement of the objective results at the end and be able to have some significant results in general.

The population of this study consists of employees from government institutions in Jordan. A sample size of more than 30 samples and less than 500 samples is sufficient for most studies (Saidan et al., 2017). Thus, a total of 220 surveys were distributed based on this. (182) Questionnaires were returned only from the distributed questionnaires. A convenient sampling approach was used in this study, which refers to the collection of information from members of the population conveniently available for submission (Sekaran and Buji, 2016). According to the above, the sample size (182) is suitable for conducting statistical analysis. Therefore, the research did undertake the analysis of quantitative data collected using a research survey. The survey did undertake on the data collected from the government institutions in Jordan to establish the efficiency of government services which is a general factor. The data used were primary data that have not been manipulated therefore arriving at some of the significant results and thus being able to arrive at conclusive and significant results which are effective in policy and decision making in general, among other key factors.

**Analysis, Results and Findings**

The information gathered through questionnaires sent to the research population was analyzed using a statistical suite of social science software. After screening and purifying the data, the study utilized Cronbach's alpha to establish reliability based on the cross between the observed variables of the questionnaires (Burns and Burns, 2008). Cronbach's Alpha for all compositions was more than 0.70. Therefore, the formulations in the current investigation

are all trustworthy. Statistical procedures used include descriptive analysis, evaluating a single sample to confirm a substantial difference from the center of the rating scale, and linear regression analysis scales (Abu-Bader, 2021).

Table 1

*Profiles of Respondents*

Category	Frequency	Percentage (%)
<b>Gender</b>		
male	97	53%
female	85	47%
<b>Total</b>	<b>182</b>	<b>100%</b>
<b>Age</b>		
21-30	25	14%
31-40	40	22%
41-50	83	46%
51-60	31	17%
<60	3	2%
<b>Total</b>	<b>182</b>	<b>100%</b>
<b>Education Level</b>		
Bachelor	113	62%
Master	60	33%
PhD	9	5%
<b>Total</b>	<b>182</b>	<b>100%</b>
<b>Experience</b>		
2-4	9	5%
5-7	30	16%
8-10	94	52%
<10	49	27%
<b>Total</b>	<b>182</b>	<b>100%</b>

Table 1 reveals that the majority of respondents (53%) were male, and three-quarters (68%) were between the ages of 31 and 50. Additionally, the majority of respondents (62%) had a Bachelor's degree, while 33% have a Master's degree. The majority of responders (52% had more than 8 years of job experience). As a result, the demographic profile of the respondents demonstrated that they have sufficient knowledge and expertise to participate in the survey and give trustworthy data for this study.

Table 2

*Descriptive statistics and reliability*

Variables	N	Minimum	Maximum	Mean	SD	Skewness		Kurtosis		Cronbach's Alpha
						Statistic	Error	Statistic	Error	
GSE	182	2.92	5.00	3.7769	.37055	.418	.269	1.150	.532	.782
ABC	182	3.05	4.86	4.0054	.38716	-.173	.269	-.181	.532	.888
<b>Valid (listwise)</b>	<b>N 182</b>									

This study's five-point scale was further classified into three categories: high scales, medium scales, and low scales. Scores more than 3.67 are regarded as high; scores less than 2.33 are considered low, and scores between low and high are deemed intermediate (Sasenberg, Matschke, and Scholl, 2011). Table 2 shows the total mean for the hidden variable, which are 3.7769 and 4.0054. Cronbach alpha analysis was also performed to assess the instrument's reliability. If Cronbach's Alpha is less than 0.6, the item is deemed weak and consequently less dependable. Those in the 0.7 range are Doing well, and those over 0.8 are excellent (Sekaran and Rani, 2010). As a consequence of the current study's findings, all of the variables' items are dependable. "A common guideline for skewness is that if the value is within a range ( $\pm 1$ ), this is evidence of a strongly skewed distribution. For kurtosis, the general guideline is that a kurtosis of less than  $-1$  indicates a distribution that is too flat. Likewise, if the number is greater than  $+1$ , the distribution is too peaked. Distributions displaying skewness and/or kurtosis that exceed these guidelines are considered non-normal (Hair et al., 2018).

Chi-square was carried out to determine the effectiveness of the respective factors and whether ABC has a significant effect on service delivery in Jordan which is a critical factor (Nihan, 2020).

Table 3

*Chi-Square ABC and other factors*

	<b>Ratings would give to accounting system percentages</b>	<b>would ABC_ ABC Processes in effective accountability</b>	<b>ABC is advantageous and leads to effective service delivery</b>
<b>Chi-Square</b>	49.500	1.250	3.200
<b>Df</b>	34	1	1
<b>Asymp. Sig.</b>	.042	.026	.074

The given p-values for the aforementioned variables are below the significance level of 0.05, showing that ABC has a substantial influence on government service delivery (Lemeshko, 2015). This clearly shows that ABC is a crucial accounting system that the government and even public corporations must embrace in order to improve service delivery (Asfahani, 2021).

To assess the correlation between the variables, the association between the Activity-based Costing accounting system and government service efficiency, as shown in table 4, suggests that the two variables have a statistically significant relationship. ABC and GSE have Pearson correlation values of  $r = 0.576$ . ( $p < 0.05$ ). The findings show that all factors have a significant connection at ( $p < 0.01$ ,  $p < 0.05$ ).

Table 4

*Correlation analysis*

		GSE	ABC
GSE	<b>Pearson Correlation</b>	1	.576**
	<b>Sig. (2-tailed)</b>		.000
	<b>N</b>	182	182
ABC	<b>Pearson Correlation</b>	.576**	1
	<b>Sig. (2-tailed)</b>	.000	
	<b>N</b>	182	182

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

Table 5 illustrates the linear regression coefficients of tax evasion as an independent variable to the dependent variables. Where (p0.00), all variables are significant. In terms of t-values, ABC's t-value was revealed to be (t-value = 6.223). Furthermore, the Beta for the ABC was determined, where (Beta =.576). This meant that the GSE variable contributed the most to explaining the variable ABC. The testing hypothesis findings showed that the independent variable was highly associated with the dependent variables. Therefore, the basic hypothesis is accepted (see Table 5).

Table 5

*Linear Regression Analysis*

Model	Unstandardized Coefficients		Standardized Coefficients		t	Sig.	Result
	B	Std. Error	Beta				
1	<b>(Constant)</b>	1.569	.356		4.401	.000	
	<b>ABC</b>	.551	.089	.576	6.223	.000	Accepted

a. Dependent Variable: GSE

**Discussion and Conclusion**

The study's purpose is to learn about ABC and the efficiency of Jordan's government services. Furthermore, the Jordanian government has reviewed the current study's approach, underlining the necessity of service efficiency in reaching an exceptional outcome. Jordan's whole government services efficiency can handle and allow all methodologies and instruments, including an ABC, to materialize. As a result, an ABC may not be utilized to increase the efficiency of Jordan's government services. Furthermore, the study's findings might provide light on connections between ABCs and the efficiency of government services. By emphasizing service efficiency as a relationship supervisor in the Jordanian government, the findings of this study can also contribute to results-based treatment.

Using Pearson correlation and linear regression analysis, the main hypothesis resulted in an ABC and improved government service efficiency in Jordan. The findings demonstrate a statistically significant link between the two variables, suggesting a significant relationship between ABCs and government service efficiency. That is, the various levels of ABCs will have a direct influence on the efficiency of Jordan's government services. These findings corroborate earlier studies (Making, 2020; Demdoum et al., 2021; Loayza and Pennings, 2020;



Gallo et al., 2020; Tran and Tran, 2022; Yang et al., 2020; Vetchagool et al., 2021; Sedevich-Fonts, 2018). Therefore, H0 is accepted.

The findings above show broad indicators of individuals who agree or disagree on the benefits of the ABC accounting system for service delivery, which is a significant factor in general, with the majority saying that it does have benefits for service delivery in Jordan. Furthermore, the findings above reflect the relevant indications on whether the ABC accounting system provides any type of challenges to successful service delivery in Jordan, with the majority arguing that it does not cause a lot of obstacles to efficient service delivery. Similarly, the findings above reveal the corresponding measures and general overview of the significance of the ABC accounting system towards service delivery towards public service delivery with the majority powerful agreeing and consenting respectively that it does improve much responsibility towards the services to the public who needs the same as illustrated by Tran and Tran (2022) who did point out that it is more meaningful more so in the public service sector and elaborating on the significance of the ABC accounting system towards the delivery of services towards public service delivery. Furthermore, the findings above show the general opinion of the success of ABC accounting, with the majority agreeing that it plays a key part in the same, highlighting its efficacy. Similarly, the majority of employees are satisfied with the ABC accounting system because of its efficacy, particularly when it comes to resource allocation and the auditor general report, which shows how the corresponding resources are efficiently employed.

Based on the general statistical and empirical analysis, it is evident that the application of an ABC on the efficiency of government services has a significant effect on the public perception and that of the entire accountability of government on the use of resources (Kesuma and Ritonga, 2020). Besides, it enhances the effective allocation of resources more so the given emergencies that do occur in the cause of implementation of service or act outside the entire process (Park & Sungmin, 2017). Therefore, applying ABC accounting techniques is essential to achieving general efficiency both in the long and short run. Besides, for its effective application, there is a need to invest in human capital which plays a significant role in its implementation, among other key factors are also significant (Huang, 2018). On the part of private organizations, also need to have accounting systems that adhere to that international financial reporting standards which are key in any accounting part (Barton, 2011).

The sample methodology and data collection method used in this study are the study's shortcomings. The data gathered from the questionnaires provided to the study population is insufficient to properly and thoroughly explain the phenomena of government service efficiency and the ABC accounting system used. Therefore, future researchers should examine alternative data-collection strategies, such as mixed methods. Consequently, this study only looked at the major parameters connected to the efficiency of government services. The study was bound by a time constraint. Future research should take into consideration more aspects by using other accounting systems and increasing the number of determinants of government service efficiency to include new characteristics that have not been investigated or variables with inconsistent results. Furthermore, future research may incorporate mediating variables to investigate if they affect the efficiency of government services.

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