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The Effect of Applying Activity Based Costing System on Net Cash Flow in Manufacturing Companies in Jordan

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Abstract
Activity based costing system is considered of the most important costing topic at the time due to its impact on the decision being taken by decision makers in the manufacturing companies which represent the biggest portion on the Jordanian sector.
There are too many studies have showed the importance and usefulness for applying this system.
This study aimed to show the effect of applying activity based costing system on the net cash flow (operating, investing and financing) in manufacturing companies in Jordan
To active the objective of this study, descriptive analytical method has been conducted. Study population was the employees in the manufacturing companies were in total of 87 male and female. Surveys have been distributed to 8 manufacturing companies and sample unit is (finance managers, chief accountants, and accountants), survey collected back was 100 surveys. Alongside with that, financial statements have been analyses for the years 2011-2015 in order to test hypothesis and descript the relationship between variables using the statistical software SPSS. The results revealed that:
According to results of the tests that there is statistically significant result ($\alpha = 0.05$) for the effect of the activity based costing system (ABC) on the net cash flow (operating cash flow activities, investing cash flowactivities and financing cash flow activities) in manufacturing companies in Jordan.

- According to results of the tests that there is no statistically significant result ($\alpha = 0.05$) for the effect of the activity based costing system (ABC) on the net operating cash flow in manufacturing companies in Jordan.
- According to results of the tests that there is statistically significant result ($\alpha = 0.05$) for the effect of the activity based costing system (ABC) on the net investing cash flow in manufacturing companies in Jordan.
- According to results of the tests that there is no statistically significant result ($\alpha = 0.05$) for the effect of the activity based costing system (ABC) on the net financing cash flow in manufacturing companies in Jordan.

Based on research finding the researcher gave several recommendations: 1) encourage decision makers in manufacturing companies in Jordan to improve the new standards that serves the activity based costing system that helps the management to take the proper decision. 2) Train and prepare the people who are dealing with activity based costing system and develop their skills to have the maximum use of applying activity based costing system.
Keywords: ABC , net cash flows , manufacturing companies , Jordan.

1. Introduction

Activity based costing (ABC), is a new technique being used and adopted as an alternative for the traditional costing models in industrial companies around the world. The main reasons for having such newly techniques are the rapid technological changes, intense competition, and information processing revolution that requires adequate and accurate information to help managers to take correct strategic decisions (Haddadi & Seyednezhad, 2015). In order to fulfil all organizational goals such as increasing customer's satisfaction, profitability, pricing, controlling products quality and lowering costs, ABC can help managers at all levels of Organization.

Cash flows are the main issue for any organization (operating, investing and financing activates); it represents the moving of cash and cash equivalent, in and out, of the business. Thus, positive cash flows indicate that the company is solvent, reinvest in business and pay shareholders. On the other hand, negative cash flows indicate that company's liquid assets decreasing that should raise the red flag for that.

Management's concern about cash is on net income as well as cash net income, which provide predictions about the organization's future operations and expand or dissolved day-to-day business performance.

Industrial companies are concerned with achieving cost optimization and proper cost allocation for their products which are going to affect the cash flows.

2. Research Problem:

Industrial companies aim to reach proper cost allocation for the product that is going to help managers in making

the right decisions either related to product itself or the company as whole.

During reading previous studies the researcher found that most of the studies have focused on the effect of applying activity based costing system on the financial statements as a whole, financial performance and cost optimization without having into consideration the cash flows itself in the industrial company's sector. This sector is occupying the largest portion of the Jordanian economy and considered as a significant contributor to the Gross Domestic Product (GDP) (Hardan & Shatnawi, 2013).

The researcher also believes that applying ABC in this sector leads to improve the financial performance for these companies that are participated in, which in return will improve management of decisions making that will affect the sector as whole. So, it's necessary to follow all the new developments that are going to affect this sector.

The research problem characterized in studying the effect of applying the activity based costing system on the cash flow in the industrial companies in Jordan. Whereas the researcher is looking for clarifying the ABC as the independent variable and its impact on the cash flows which considered the dependent variable.

Accordingly, the purpose of this study is clarifying the impact of applying the activity based costing system (ABC) on the cash flow in the industrial companies.

3 Significance of the Study:

The practical importance of this study identified in the impact of applying the activity based costing system (ABC) on the net cash flow in industrial companies. As known "cash is the king!" due to its importance, we must study the major effecting factors on the elements of cash flows based on the costing system that will lead to proper allocation of costs thought value chain technique.

Accordingly, the importance of this study is performing analytical analysis study for applying activity based costing system as independent variable and its impact on the net cash flows (net cash flow from operating activities, net cash flow from investing activities & net cash flow from financing activities) as dependent variable.

4. Theoretical Framework & Previous studies

Theoretical Framework

There are too many definitions for the activity based costing system by those who studied it. (Hardan & Shantaw, 2013) stated that activity based costing ABC is a system based on activities that links organizational spending on resources to the products and services produced and delivered to customers.

Activity-based costing (ABC) refines a costing system by identifying individual activities as the fundamental cost objects those activities may include task, event or unit of work with specified purpose (Horngren, 2012).

Activity based costing ABC is defined according to (Abd Almaseeh, 2007) as a group of principles, definitions, techniques and costing systems that being used to collect, analyze and record the data related to elements of cost object in order to be used by all types of organizations (manufacturing, commercial or services) for planning, controlling and decision making to have the proper and accurate cost allocation for the products which in return will lead to accurate profit and losses figures for certain financial costing period.

(Ismaeel Hejazi, Ma'alem Suad, 2013) stated that activity based costing ABC is method will improve the traditional costing system through focusing on the activities as a main factor for costing process whereas, indirect manufacturing costs will be allocated to the cost driver or the service that used those activities per their level of use.

Activity based costing system has been defined per (Abdullah, Mansour, 2015) as implementation for group of principles, procedures and accounting methods, that will collect the data related to product cost and explain it for the decision makers for decision making and comparisons purposes.

From researcher point of view, activity based costing system is the methodology of analyzing the activities required to produce the product service which is included in the value chain and assign the indirect manufacturing costs associated of those activities to the cost object to have the proper and accurate product cost that will help management for decision making process and increase profitability which is one of the main goals for the organization.

Cash flow Statement:

Cash flow statement has been defined by too many parties, either by researchers or international community where as it has been defined as "statement shows the sources of the incoming cash flow and the uses for the outgoing cash flow for the economic entity for specified fiscal period. (Paramasivan & Subramanian 2009)

Also, it has been defined as "statement that shows the incoming cash and disbursements cash and net change in the cashflow which occurs from three main activities: Operating activities, investing activities and financing activities for economic entity for a specified period in in term that this shows the changes happened between begging and ending of the fiscal period (Hejazi, Abbas 1998).

Other definition for the statement of the cash flow by, is presentation for all incoming and outgoing cash flow transactions (Zubaidy, Mahmoud, 2004)

Eventually we can get a definition for statement of cash flow as financial tool shows the real financial position for any organization and originating source for its profit or loss and root cause of that.

The materiality of Statement of cash flow SCF:

Statement of cashflow is one of the three main financial statements that must be presented under US GAAP for any company profit, non- profit, private and public. (Hock, 2010).

Statement of cash flow must be presented alongside with each income statement year even in absence of balance sheet for those companies that present only income statements.

According to (Hammad, Tariq 2002) the materiality of the statement of cash flow cash can be described as following:

- Statement of cash flow and provide a prescription of the financial structure for the organization as liquidity and solvency matters.
- Statement of cash flow can provide extra information about the assets, liabilities and owners' equity of the organization.
- Statement of cash flow can be used as benchmark for predicting the future cash flow and same time assessing the accuracy in planning that used for predicting future cash flow.
- Statement of cash flow provides information about the operational activities and the ability for the organization for generating positive future cash flow to pay off the liabilities and increase the volume of the operational activities.
- Statement of cash flow gives indicator about company's investing policy either its expanding or conservative policy. Whereas if the net outgoing cashflow for investing activates exceeds the outgoing cashflow from operating activities it indicates that the company has expanding policy for its investment activities.
- Statement of cash flow reveals the financing of economic entity either it depends on external or internal funding source.

Previous Studies

Diab (2011), A Framework to Align Strategic Efficiency and Performance Improvement Using the Integration of Activity Based Costing and Non-Financial Performance Measurements.

The subject of this study is to explain the framework to align strategic efficiency and performance improvement using the integration of activity based costing and non-financial performance measurements whereas the sample been studied service business units (banks) and industrial firms (food). Sample size was 138 (69 for each sector). Main results for this study that the ABC system positively influences the BSC approach. Further, it was found that ABC and BSC have a role in improving the performance of the organization. Also, unlike ABC, BSC can enhance business efficiency. One of the main recommendations for the study when the researcher found that most companies in Egypt are not applying the modern management tools or they are not following the scientific approach in applying such systems. It is suggested that these companies from committee composed of some of its management team and few university professors and their assistants to help the company understand and apply such modern management accounting tools in an attempt to improve its performance and to improve the quality of the work environment.

The usefulness of Diab (2011) study, know the advantages of ABC integrated with non-financial performance on efficiency and performance improvements whereas it differs from my study that measuring the effect of applying ABC on cash flows in industrial companies in Jordan.

Hardan, Shantawi, (2013), Impact of Applying the ABC on Improving the Financial Performance in Telecom Companies.

The subject of this study is revealing the impact of applying ABC on improving the financial performance. Studied population (Zain, orange &Umniah). The main results a positive relationship between applying the ABC and the telecom company's financial performance, and the needed infrastructure to implement the ABC is available in telecom company's operations, but there are obstacles prevent telecom companies to apply the ABC in their operation to control cost and optimize expenses, which requires more studies. The main recommendations that there is significant positive relationship between applying telecom companies the ABC and reducing their expenses, which will lead to profitability enhancement. In addition, we found that the needed infrastructure to implement the ABC is available in telecom company's operations, but there are obstacles that prevent telecom companies to apply the ABC in their operation. Consequently, more studies are required to overcome such obstacles. The Usefulness of Hardan, Shantawi, (2013) study, reveal the impact of applying ABC on financial performance. whereas it differs from my study that measuring the effect of applying ABC on cash flows in industrial companies in Jordan.

Mansour, Ali (2014), Implementation of Activity Based Costing Method (ABC) and it is impact on Products cost measuring in the factories of Sudanese Sugar Company.

This aimed to study the impact of Implementation of Activity Based Costing Method (ABC) and it is impact on Products cost. The sample was designing a questionnaire that distributed for a sample of 125 employees at the financial departments in Sudanese Sugar Company. Main results for this study that applying activity based costing system in Sudanese Sugar Company is fairly allocating the industrial overhead costs to the cost object that is going to reflect the actual product cost. Also, applying the ABC system will assist in linking up the used resources with the related activities and monitor it closely. The study main recommendations include the need for adopting and implementing (ABC) method in factories of Sudanese Sugar Company; and the call for universities and higher education institutes to disseminate the culture of modern costing systems and techniques.

Usefulness of Mansour, Ali (2014) study, explains the impact of ABC application on the product cost and the related components. whereas it differs from my study that measuring the effect of applying ABC on cash flows in industrial companies in Jordan.

Mansour, Mohammad (2014), Activity Based Costing System and The Accounting for Used Resources and Their Impact on Cost Optimization in Industrial companies.

The aim for this study is to study the impact of Activity based costing system combined with accounting for used resources on cost optimization in industrial companies. Sample was sugar industrial sector in Sudan. The study main findings indicated that the application of activity- based costing method in sugar industry in Sudan contribute to increase efficiency of the performance of activities. The application of this method helps the administration to control and reduce operating costs. Furthermore, the application of resource consumption accounting method provides direct visualization to the administration for the energies of resources and their costs, hence leading to exclude the cost of resources that is not required for production. Also, its application provides an outlook on the optimal utilization of the activities resources, which increases the efficiency of the performance of activities in sugar industry in Sudan. Study recommended for designing a clear strategy to utilize the idle business resources, besides urging the administration of business firms to control the operating costs through the application of modern costs methods.

Usefulness of Mansour, Mohammad (2014) study, clarifying the impact of ABC application on cost optimization. Whereas it differs from my study that measuring the effect of applying ABC on cash flows in industrial companies in Jordan.

Haddadi, Seyednezhad, (2015), Comparative Study of Traditional and Activity-Based Costing in Forging Companies of Iran Tractor.

The subject of this study is comparing Traditional and Activity-Based Costing systems. Sample size 240 quoted companies in Iranian forging companies of Iran tractor industrial for the year 2014. Main results for this study there is no significant difference between cost of every unit according to TC and ABC system and there is no significant difference between gross profit of every unit according to TC and ABC system. Main recommendations for the study Therefor the results of the study I using of activity-based costing system may enables the Iranian forging companies to come up with a better understanding of the profitability of their products. Besides, this understanding we found that Activity Based Costing System, in companies that overhead cost consists the high percent of total production costs, ABC system must be applied, in particular, when operational staff and production managers do not trust on current system about costing the product.

Usefulness of Haddadi, Seyednezhad, (2015) study, conducting a comparative study between ABC and traditional costing and related advantages and limitation. Whereas it differs from my study that measuring the effect of applying ABC on cash flows in industrial companies in Jordan.

Abullah, Mansour (2015), The Integration of Target Costing Technique (TC) and Activity Based Costing Technique (ABC) As A Tools for Strategic Cost Management For Determining The Cost of Electricity Production.

The study aimed to determine the electricity production cost at the Sudanese Thermal Power Generation Company Ltd using Integration of Target Costing Technique (TC) and Activity Based Costing Technique (ABC). The research main results indicated that the Sudanese Thermal Power Generation Company Ltd used the traditional cost methods, which do not provide accurate measurements to determine Electricity production cost; and the Integration of Target Costing and Activity Based Costing provide accurate Electricity Production cost. The study main recommendation call for the company to adopt modern costing techniques such as the Integration of Target Costing and Activity Based Costing methods.

Usefulness of Abullah, Mansour (2015) study, the results of integration between target costing and ABC in order to determine the electricity cost whereas adopting ABC leads to cost optimization for electricity. Whereas it differ from my study that measuring the effect of applying ABC on cash flows in industrial companies in Jordan.

Hussain, AbdAl'zeem (2016), The Role of Activity Based Costing System in Measuring the Cost of Banking Services.

This Study Aimed examining the impact of using the activity based cost system in measuring the cost of banking services. The sample for this study is Sudanese banking Sector. The research main findings indicated the appropriateness of applying the activity based cost system in Sudanese banking sector; in addition to its effectiveness in determining the proper cost of banking services, and calculating the actual profitability of the bank. The study recommended that further studies to be conducted on appropriateness of the system to other sectors; besides calling for gradual application of activity based cost system on several successive periods, especially in institutions where it is difficult to fully apply the system.

Usefulness of Hussain, Abd Al'zeem (2016) study, clarifying the role of ABC in measuring bank service costs as adoption of ABC will reduce the bank service costs. Whereas it differs from my study that measuring the effect of applying ABC on cash flows in industrial companies in Jordan.

Research Questions

Research questions based on the following main question:

Is there an effect for applying the activity based costing system on the net cash flow in the industrial companies in Jordan?

Sub-Questions are follows:

Q.1-1 Sub-Question one: Is there an effect for applying the activity based costing system on the net operating cash flow?

Q.1-2 Sub-Question two: Is there an effect for applying the activity based costing system on the net investing cash flow?

Q.1-3 Sub-Question three: Is there an effect for applying the activity based costing system on the net financing cash flow?

Research Hypothesis

Main Hypothesis:

Ho.1: There is no statistically significant result ($\alpha = 0.05$) for the effect of the activity based costing system (ABC) on the net cash flow in industrial companies in Jordan.

The sub-Hypotheses are:

First Sub-Hypothesis:

Ho.1.1: There is no statistically significant result ($\alpha = 0.05$) for the effect of the activity based costing system (ABC) on the net operating cash flow in industrial companies in Jordan.

Second Sub-Hypothesis:

Ho.1.2: There is no statistically significant result ($\alpha = 0.05$) for the effect of the activity based costing system on the net investing cash flow in industrial companies in Jordan.

Third Sub-Hypothesis:

Ho.1.3: There is no statistically significant result ($\alpha = 0.05$) for the effect of the activity based costing system (ABC) on the net financing cash flow in industrial companies in Jordan.

1-6 Research Module:

Based on the effect of applying activity based costing system on the net cash flows (net cash flows from operating activities, net cash flows from investing activities and net cash flows from financing activities) in the industrial companies in Jordan, the researcher suggests the following research model as presented in figure (1).

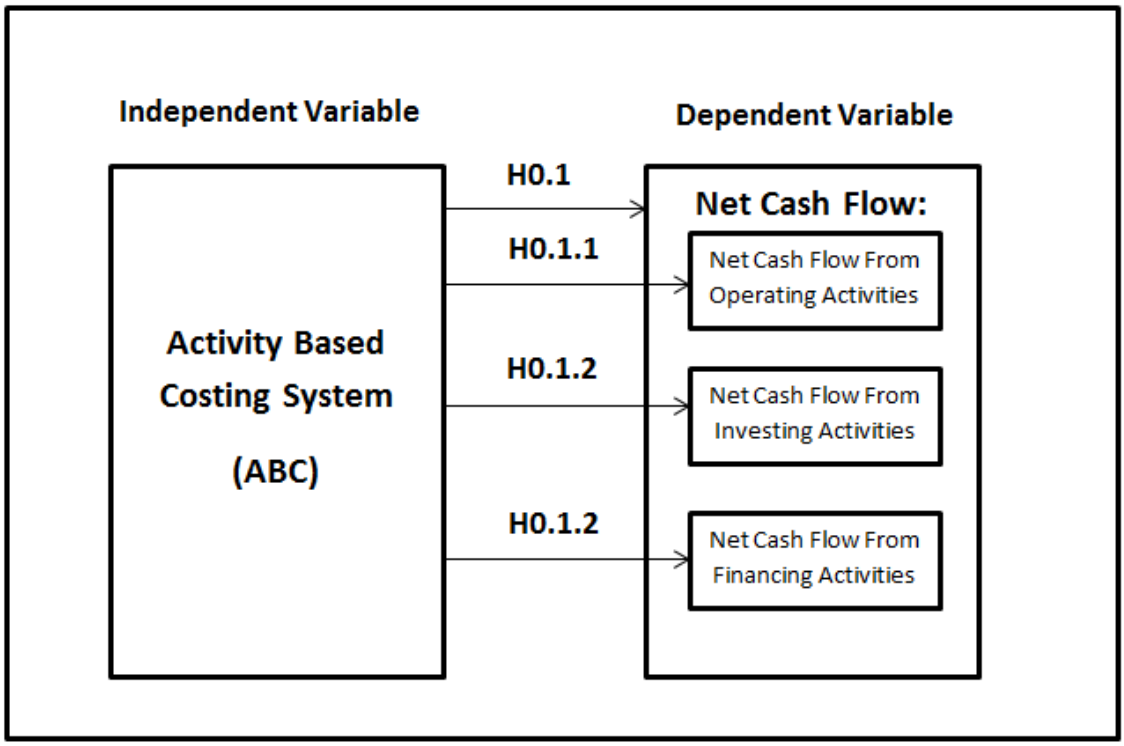

Figure (1): Research Module

Source:
Charles T. Horngren (2012)
Floyd A. Beams (2012)

6. Research Methodology

6.1 Study's Sample:

Study sample is made of random sample consists of 8 manufacturing companies and the targeted staff is financial managers, chief accountants and accountants in manufacturing sector as stated below:

Table (2): Study's Sample

SN	Company	Sample	Surveys collected
1	UNION TOBACCO & CIGARETTES INDUSTRIES	15	12
2	PHILADELPHIA PHARMACEUTICALS	11	9
3	DAR A DAWA DEVELOPMENTS & INVESTEMENTE	19	15
4	JORDAN STEEL	14	11
5	CENTRAL ELECTRICITY GENERATING	20	15
6	JORDAN ELECTRIC POWER	17	12
7	UNITED CABLES INDUSTRIES	10	7
8	THE JORDAN WORSTED MILLS	8	6
	Total	114	87

Survey has been distributed as 114 survey on basis of random on the manufacturing companies and the got a reply for 100 survey out of 114 and 13 survey have been excluded due to incompleteness. Accordingly, the sample is finally made on basis of 87 survey.

6.2 Study Tools:

There are two tools have been used in order to collect data, survey which is related to the independed variable (activity based costing system) and financial statements which is related to net cash flow (operating, investing and financing activities) as shown in the amendments list.

Surveys have been distributed on study sample in order to collect data for research purpose and analyses the financial statements, which is declared for the manufacturing companies in Jordan for the year (2011-2015).

7. Statistical Analysis and Hypothesis Testing

7.1 Demographic variables for study sample:

Demographic analysis has covered the personal data for the people who have conducted the survey (Gender, age,

education, position and years of experience). Accordingly, study sample has been tested using frequencies and percentages for it. Table (3) listed next page represents the distribution for the study sample members through the answers on the survey:

Table (3): Demographic variables for study sample

Demographic Variable	Structure	Freq.	%
Gender	Male	71	% 81.6
	Female	16	% 18.4
	Total	**87**	**% 100.0**
Age	25-29	6	%6.9
	30-34	37	% 42.53
	35-39	30	% 34.48
	Older Than 39	14	% 16.09
	Total	**87**	**% 100.0**
Education	High School	2	% 2.29
	BA	60	% 68.96
	High Diploma	6	% 6.89
	Master	17	19.57 %
	PHD	2	% 2.29
	Total	**87**	**% 100.0**
Position	Finance Manager	11	% 12.66
	Chief Accountant	62	% 71.26
	Senior accountants	4	% 4.59
	Others	10	% 11.49
	Total	**87**	**% 100.0**
Experience	Less than 2 Years	0	% 0
	2-4 years	7	% 8.04
	5-7 years	51	% 58.62
	More than 7 years	29	% 33.34
	Total	**87**	**%100.0**

According to the above table, descriptive analysis for the study members reveals that (81.6%) are males and (18.4%) are females. From researcher point of view, gender diversification is totally important for anyone – with respect to his gender – can work in financial department and use the activity based costing system according to his qualification and competency.

For age, as per listed results, Ages between (25-29) represents (6.1%) and for (30-34) represents (42.53 %). Also, diversifying in ages gives a chance to everyone from any age range to give their opinions without any bias.

Education as per survey, employees who has high school represents only (2.29%) which is ignorable percentage for the study sample not as BA certificate holders who represents (68.96%) which is high percentage that shows the study sample are highly educated in general. For Master certificate holders, they represent (19.57%) for study sample which indicates that manufacturing company's managements are keen to choose the best highly educated employees in order to achieve the best of employees who performs ABC.

For PHD certificate holders, the percentage represents only (2.29%) which is very low comparing to other education levels.

Positions as per listed table, results have revealed that (12.66%) are finance managers, (71.26 %) are chief accountants and (4.59%) are seniors. Researcher point of view that the diversification for the positions give the chance to all who works at the accounting department to give their opinion about activity based costing system without bias.

Descriptive analysis for experiences, years of experience for those who is less than 2 years represents is 0 percent. come with percent of (8.04%) for those who has experience for (2-4 year), for (5-7 years) with (58.62%) and finally (33.34%) for those who have more than 7 years of experience.

researcher believes that the high percentage for those who has experience of (5-7 years) is due to the working at manufacturing companies take time to reach and have those high positions. Depending on that, that most of the study sample have enough experience working at manufacturing companies, this indicates they competent and have enough knowledge with the requirements for applying and the requirements as well for activity based costing system and its impact on the net cash flow in the manufacturing companies in Jordan.

7.2 Arithmetic means and standard deviation for independent variable (ABC) paragraphs related to management:

Table (5): paragraphs related to independent variable concerning management

Paragraph	Mean	SD	Rank	Direction
Management are convinced with the value added by adapting ABC system.	3.44	0.950	6	Hight
Sorting out the value-added activities that have no value-added leads to set the proper price for the customers.	3.29	0.959	7	Neutral
Specifying the cost drivers helps management for controlling the operating costs.	3.27	0.989	8	Neutral
Management are considering setting setup team for implementing the activity based costing system.	3.26	1.043	9	Neutral
All activities are analysed which is related to the company.	3.66	0.945	5	High
Costs are estimated for applying the system in the company	4.09	0.854	3	High
Activity based costing system improving the costing policy.	4.14	0.842	2	High
One of the reasons for applying the activity based costing system that it helps improving the manufacturing process.	4.26	0.825	1	Very High
One of the reasons for adapting activity based costing system that is improve the competitive advantage for the company.	4.08	0.734	4	High
Overall	**3.80**			**High**

As seen in table (5) the direction for approval is High with mean (3.80) on scale. For scaling the paragraphs, the highest approval was on paragraph (8) which states that "One of the reasons for applying the activity based costing system that it helps improving the manufacturing process" with mean of (4.26) and SD of (0.734). The lowest approvals are paragraph (4) states "Management are considering setting setup team for implementing the activity based costing system." With mean of (3.26) and SD of (1.043). That indicates that management is aware of the importance of applying activity based costing system and its impact of improving the manufacturing process also, management is considering hiring the qualified teams for implementing it which reflects the importance of ABC.

Arithmetic means and standard deviation for the paragraphs related to staff who works activity based costing system:

Table (6): paragraphs related to independent variable concerning staff who uses activity based costing system

Paragraph	Mean	SD	Rank	Direction
Management is considering training on ABC system.	4.12	0.792	3	High
There is proper accounting system that provides detailed information for implementing and applying the activity based costing system.	4.24	0.791	2	Very High
Activity based costing system provides information that reflects related products information (Size, type, etc.,) which in return improve the production and pricing needs for management.	4.25	0.795	1	Very High
Using ABC easily helps to specify the cost drivers which can be traced to the product or the order.	4.03	0.841	5	High
One of the constraints for applying the ABC is the inefficiency for the used accounting system.	4.09	0.768	4	High
Overall	**4.14**			**High**

As seen in table (6) the direction for approval is High with mean (4.14) on scale. For scaling the paragraphs, the highest approval was on paragraph (3) which states that "Activity based costing system provides information that reflects related products information (Size, type, etc.,) which in return improve the production and pricing needs for management." with mean of (4.25) and SD of (0.795). The lowest approvals are paragraph (4) states "One of the constraints for applying the ABC is the inefficiency for the used accounting system." With mean of (4.09) and SD of (0.768). This indicates the importance of the information that are provided by activity based costing system which help the rest of value chain activities which is must be supported by efficient accounting system that provides detailed information which is going to support the effectiveness of activity based costing system.

Arithmetic means and standard deviation for the paragraphs related to activity based costing system:

Table (7): paragraphs related to independent variable concerning ABC

Paragraph	Mean	SD	Rank	Direction
Activity based costing system leads to maximize profit through getting rid of the activates that have no value added.	4.11	0.832	3	High
Benefits for applying the activity based costing system is less than the costs for applying it.	4.10	0.792	4	High
Applying activity based costing system precisely allocating the indirect manufacturing costs.	4.00	0.888	6	High
Applying activity based costing system leads to minimize the costs for the primary products.	4.06	0.795	5	High
There are difficulties in specifying the cost drivers.	4.15	0.764	1	High
High costs for applying the activity based costing system is considered as constraint. against applying it.	4.13	0.684	2	High
Overall	**4.09**			**High**

As shown in table (7), the direction for approval is high with mean (4.09) on scale. For scaling the paragraphs, the highest approval was on paragraph (5) which states that "There are difficulties in specifying the cost drivers." with mean of (4.15) and SD of (0.764). The lowest approvals are paragraph (3) states "Applying activity based costing system precisely allocating the indirect manufacturing costs." With mean of (4.00) and SD of (0.888). This indicates that applying activity based costing system is complicated to implement which requires highly trained and experienced persons who can achieve the goal of the activity based costing system which is reducing or refining the overhead costs that leads to proper costing module.

7.3 Arithmetic means and standard deviation for net cash flow variables:

Table (8) Arithmetic means and standard deviations for the operating cash flow variable (OCF)

Company	Mean	SD	Rank
JORDAN STEEL	9.11	9.55	1
DAR A DAWA DEVELOPMENTS & INVESTEMENTE	5.89	8.13	4
JORDAN ELECTRIC POWER	4.70	2.43	5
CENTRAL ELECTRICITY GENERATING COMPANY	8.81	1.78	2
PHILADELPHIA PHARMACEUTICALS	5.99	10.82	3
UNION TOBACCO & CIGARETTES INDUSTRIES	1.02	8.35	8
THE JORDAN WORSTED MILLS	3.87	2.36	6
UNITED CABLES INDUSTRIES	3.78	4.74	7
Overall	**5.39**		

As shown in table (8) the mean for all companies is (5.39) for net cash flow from operating activities. Company level, its clearly seen that the highest net operating cash flow for "Jordan steel company" with mean of (9.11) and SD of (9.55). The lowest net operating cash flow for "UNION TOBACCO & CIGARETTES INDUSTRIES" with mean of (1.02) and SD of (8.35). Table (8) shows that the selected companies having net operating cash flow which is the economic health indicator for any organization.

Table (9) Arithmetic means and standard deviations for the investing cash flow variable (ICF)

Company	Mean	SD	Rank
JORDAN STEEL	-1.57	2.20	4
DAR A DAWA DEVELOPMENTS & INVESTEMENTE	-3.86	5.09	5
JORDAN ELECTRIC POWER	-4.07	1.59	6
CENTRAL ELECTRICITY GENERATING COMPANY	-0.003	0.42	2
PHILADELPHIA PHARMACEUTICALS	-4.38	4.61	8
UNION TOBACCO & CIGARETTES INDUSTRIES	-4.21	6.68	7
THE JORDAN WORSTED MILLS	-1.99	2.14	1
UNITED CABLES INDUSTRIES	-0.21	0.10	3
Overall	**-2.03**		

As shown table (9) the mean for all companies is (-2.03) for net cash flow from investing activities. Company level, its clearly seen that the highest net investing cash flow for "THE JORDAN WORSTED MILLS" with mean of (-1.99) and SD of (2.14). The lowest net investing cash flow for "PHILADELPHIA PHARMACEUTICALS" with mean of (-4.38) and SD of (4.61). Table (9) shows that the selected companies having net investing cash flows which is the aggregate changes in company cash position resulting from any gain or losses from investments in the financial markets also the change resulting from the amount spent on the investments in capital assets.

Table (10) Arithmetic means and standard deviations for the financing cash flow variable (FCF)

Company	Mean	SD	Rank
JORDAN STEEL	-8.40	8.64	8
DAR A DAWA DEVELOPMENTS & INVESTEMENTE	-2.15	3.45	3
JORDAN ELECTRIC POWER	-3.78	1.90	5
CENTRAL ELECTRICITY GENERATING COMPANY	-7.45	6.74	7
PHILADELPHIA PHARMACEUTICALS	-1.33	4.42	2
UNION TOBACCO & CIGARETTES INDUSTRIES	-0.64	6.95	1
THE JORDAN WORSTED MILLS	-4.81	1.15	6
UNITED CABLES INDUSTRIES	-3.68	11.83	4
Overall	**-4.03**		

As Shown per table (10) the mean for all companies is (-4.03) for net cash flow from financing activities. Company level, its clearly seen that the highest net financing cash flow for "UNION TOBACCO & CIGARETTES INDUSTRIES" with mean of (-0.64) and SD of (6.95). The lowest net investing cash flow for "JORDAN STEEL" with mean of (-8.40) and SD of (8.64). This table shows that the selected companies having net financing cash flows that accounts for external activities that allows a firm to raise capital and repay investors like cash dividends, etc... Which is eventually shows investors company's financial strength.

7.3 Research Hypothesis Testing

Main Hypothesis:

Ho.1: There is no statistically significant result ($\alpha = 0.05$) for the effect of the (ABC) on the net cash flow in manufacturing companies in Jordan.

Variance analysis has been calculated for ABC system on the net cash flow (operating cash flow activities, investing cash flow activities and financing cash flow activities) in the manufacturing companies in Jordan as listed below:

Table (11): variance analysis for framework correctives

Model	Sum of Squares	DF	Mean Square	F	Sig.
Regression	2.187	1	2.187	32.879	.001*
Residual	.399	6	.067		
Total	2.586	7			

*statistically significant result ($\alpha = 0.05$)

Based table (11) , it reveals that there is statistically significant result ($\alpha = 0.05$) for the effect of the activity based costing system (ABC) on the net cash flow in manufacturing companies in Jordan. So, that we reject the null hypothesis and accept the alternative hypothesis.

H1.1: there is statistically significant result ($\alpha = 0.05$) for the effect of the activity based costing system (ABC) on the net cash flow (operating cash flow activities, investing cash flow activities and financing cash flow activities) in manufacturing companies in Jordan.

Table (12): Regression analysis for testing the effect of ABC on net cash flow

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
ABC	1.278	.223	.920	5.734	.001*

*statistically significant result ($\alpha = 0.05$)

Regression analysis shows that there is statistically significant result ($\alpha = 0.05$) for the effect of the activity based costing system (ABC) on the net cash flow (operating cash flow activities, investing cash flow activities and financing cash flow activities) in manufacturing companies in Jordan.

First Sub-Hypothesis:

Ho.1.1: There is no statistically significant result ($\alpha = 0.05$) for the effect of the activity based costing system (ABC) on the net operating cash flow in manufacturing companies in Jordan.

Variance analysis has been calculated for activity based costing system on the operating cash flow activities in the manufacturing companies in Jordan as listed below:

Table (13): variance analysis for framework correctives

Model	Sum of Squares	DF	Mean Square	F	Sig.
Regression	3.572	1	3.572	.685	.440*
Residual	31.291	6	5.215		
Total	34.863	7			

*statistically significant result ($\alpha = 0.05$)

Based on table (13) , it reveals that there is no statistically significant result ($\alpha = 0.05$) for the effect of the activity based costing system (ABC) on the net operating cash flow in manufacturing companies in Jordan. So, that we accept the null hypothesis whereas F calculated 0.685 and related significance 0.440.

Table (14): Regression analysis for testing the effect of ABC on net operating cash flow

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
ABC	1.633	1.973	.320	.828	.440

*statistically significant result ($\alpha = 0.05$)

Regression analysis shows that there is no statistically significant result ($\alpha = 0.05$) for the effect of the activity based costing system (ABC) on the net operating cash flow in manufacturing companies in Jordan.

Second Sub-Hypothesis:

Ho.1.2: There is no statistically significant result ($\alpha = 0.05$) for the effect of the activity based costing system on the net investing cash flow in manufacturing companies in Jordan.

Variance analysis has been calculated for activity based costing system on the net investing cash flow in the manufacturing companies in Jordan as listed below:

Table (15): variance analysis for framework correctives

Model	Sum of Squares	DF	Mean Square	F	Sig.
Regression	19.915	1	19.915	6.366	.045*
Residual	18.769	6	3.128		
Total	38.684	7			

*statistically significant result ($\alpha = 0.05$)

Based table (15), it reveals that there is statistically significant result ($\alpha = 0.05$) for the effect of the activity based costing system (ABC) on the net investing cash flow in manufacturing companies in Jordan. where F calculated is 6.366 and related significance is 0.045, So, that we reject the null hypothesis and accept the alternative hypothesis.

H1.1.2: there is statistically significant result ($\alpha = 0.05$) for the effect of the activity based costing system (ABC) on the net investing cash flow in manufacturing companies in Jordan.

Table (16): Regression analysis for testing the effect of ABC on net investing cash flow

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
ABC	3.856	1.528	0.718	2.523	0.045*

*statistically significant result ($\alpha = 0.05$)

Regression analysis shows that there is statistically significant result ($\alpha = 0.05$) for the effect of the activity based costing system (ABC) on the net investment cash flow in manufacturing companies in Jordan.

Third Sub-Hypothesis:

Ho.1.3: There is no statistically significant result ($\alpha = 0.05$) for the effect of the activity based costing system (ABC) on the net financing cash flow in manufacturing companies in Jordan.

Variance analysis has been calculated for activity based costing system on the financing cash flow activities in the manufacturing companies in Jordan as listed below:

Table (17): variance analysis for framework correctives

Model		Sum of Squares	DF	Mean Square	F	Sig.
	Regression	3.684	1	3.684	.465	.521*
	Residual	47.571	6	7.929		
	Total	51.255	7			

*statistically significant result ($\alpha = 0.05$)

Based on the above table, its shown that the variance analysis there is no statistically significant result ($\alpha = 0.05$) for the effect of the activity based costing system (ABC) on the net financing cash flow in manufacturing companies in Jordan. So, that we accept the null hypothesis whereas F calculated .0.465 and related significance 0.521.

Table (18): Regression analysis for testing the effect of ABC on net financing cash flow

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
ABC	-1.658	2.433	-.268	-.682	.521

Regression analysis shows that there is no statistically significant result ($\alpha = 0.05$) for the effect of the activity based costing system (ABC) on the net financing cash flow in manufacturing companies in Jordan.

8. Hypothesis testing results:

Main hypothesis:

According to results of the tests that there is statistically significant result ($\alpha = 0.05$) for the effect of the activity based costing system (ABC) on the net cash flow (operating cash flow activities, investing cash flow activities and financing cash flow activities) in manufacturing companies in Jordan. This indicates that there is positive relationship between the independent and depended variable

First Sub-Hypothesis:

According to results of the tests that there is no statistically significant result ($\alpha = 0.05$) for the effect of the activity based costing system (ABC) on the net operating cash flow in manufacturing companies in Jordan. This indicates that there is negative relationship between the independent and depended variable.

Second Sub-Hypothesis:

According to results of the tests that there is statistically significant result ($\alpha = 0.05$) for the effect of the activity based costing system (ABC) on the net investing cash flow in manufacturing companies in Jordan. This indicates that there is positive relationship between the independent and depended variable.

Third Sub-Hypothesis:

According to results of the tests that there is no statistically significant result ($\alpha = 0.05$) for the effect of the activity based costing system (ABC) on the net financing cash flow in manufacturing companies in Jordan. This indicates that there is negative relationship between the independent and depended variable.

9. Recommendations

According the research findings, researcher recommends the following:

1) encourage decision makers in manufacturing companies in Jordan to improve the new standards that serves the activity based costing system that helps the management to take the proper decision.

2) Train and prepare the people who are dealing with activity based costing system and develop their skills in order to have the maximum use of applying activity based costing system.

3) Properly implement all the related procedures for the ABC in order assure the completeness and reliability for the outcomes from the system.

4) Its highly important to take extra care with all the causes that affects the cash flow mainly the operating cash flow which is highly important to evaluate any organizations economic situation.

5) Upgrading all the system related activity based costing system to have the ultimate uses and data from it.

References

- Diab, A., (2011). "A Framework to Align Strategic Efficiency and Performance Improvement Using the Integration of Activity Based Costing and Non-Financial Performance Measurements".

Mater Study in BniSweif University. Egypt

- Hardan, A., Shantawi, T. (2013)."Impact of Applying the ABC on Improving the Financial Performance in Telecom Companies". *International Journal of Business and Management*, Vol. 8, No. 12, PP. 48-61. Jordan
- Haddadi, M., Seyednezhad, M. (2015) "Comparative Study of Traditional and Activity-Based Costing in Forging Companies of Iran Tractor". *International Journal of Management Sciences and Business Research*, Vol-4, No. 3, PP. 2-10. Iran
- Hock, B., Roden, L, (2010). "Certified management accountant (Part2)", Oxford, Ohio, 45056, p 268. USA
- Horngren,T., Datar, M., Rajan, V.,(2012)."Cost Accounting", (14th edition), Pearson Education Limited, England
- Noreen, E., (1991). "Conditions, under which activity-based cost systems provide relevant costs", *Journal of Management Accounting Research*, (fall), 159–168.
- Datar, S. M. and Gupta M., (1994). "Aggregation, specification, and measurement, errors in product costing", *The Accounting Review*, (October, 567–591.
- McGowan, A., S. and Klammer, T. P., (1997). "Satisfaction with activity-based cost Management implementation", *Journal of Management Accounting Research*, 9, 217–237.
- Batool, H., and Younos, V., (2013), "An ABC analysis for power generation project", *Management Science Letters*, (3), 1943–1948.
- Paramasivan C. & Subramanian (2009), "Financial Management", New Age International (P) Ltd .,Publishers,. p19.
- Needles, B.E., and Powers, M. (2004). "Financial Accounting", 8th Ed. New York: Houghton Mifflin Company.

- Schroeder,R.G.; Clark, M.W.; Cathay, J.M.(2001). “Accounting Theory and Analysis”, Text Cases and Readings. New Jersey: Wiley.
- Hock, B., Roden, L, (2012). “Assumed knowledge (Part2)”, Oxford, Ohio, 45056, USA
- Saundres, M., Lweis, P., and Thornhil, A. (2009). “Research Methods for Business Student”, (6 Ed), prentice hall.