

# The Impact of Applying Cost Management Tools in Cost Reduction in Service Companies

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## Abstract

The study aimed to measure the impact of applying three cost management tools namely, activity- based costing (ABC), value chain (VC), and target costing inputs (TC) in cost reduction elements, namely, raw materials costs (RMC), and conversion costs (CC) of five Jordanian service companies in the construction and health companies listed in the Amman stock exchange in Jordan. The study adopted a descriptive and analytical analysis, and a questionnaire form was designed and distributed to participants of cost accountants, financial managers, production managers, and general managers, who are working in the study sample totaling of sixty individuals. The researchers used percentages, frequencies and arithmetic averages in addition to the regression analysis to measure the impact of the independent and dependent variables of the study.

The study results showed the following:

- 1- participants perceived the application of ABC (an accurate assignment of overheads), the VC (efficient supply of raw materials) and TC (costs are led by Target prices) as between moderate to high levels (average results were between 3- 4.2).
2. there were significant impacts of the three modern cost management tools (independent variables) in cost reduction (dependent variables), with different levels of impacts for each element of the dependent variables, that is, the impact in the raw material costs and the conversion costs (at 4.1% sig.).
3. there were differences on the impact of cost management tools on cost reduction attributed to the qualification factor (at 1.2 % sig.).
4. costs reduction in service companies could be achieved through determining the difference between target prices and the profit margine to put pressure on management to control avoidable unavoidable items of raw materials and conversion costs.

In line with these findings, the researchers recommended the following:

1. more studies are needed on the application of modern cost management tools on other types of service companies with impacts on the profitabilitiy, cash flows, and the liquidity using questionnaire forms and content analysis, if possible.
2. adopting regular and continuous training programs for specialized and staff positios in service companies to understand the application of modern cost management tools in service companies, other than health and construction companies.

**Keywords:** cost management tools, cost reduction, Jordanian service companies

## 1. Introduction

The environments of modern businesses and fast technology have pressures on companies to adopt modern systems that facilitate the achievement of a competitive advantage and the customer satisfaction (King, 2001, p.24). Many studies have agreed on the existence of advantages of management control systems in businesses for stakeholders, owners and different levels of management in organizations (Gill and Obradovich, 2012, p.8). Other researchers went further in terms of fraudulent practiced by one or more individuals among management, those charged with governance, employees, or third parties, involving the use of deception to obtain an unjust or illegal advantages (Whittington, & Delany, 2013:P. 77). Termonologies, such as, cost efficiency, cost effectiveness, functional and dysfunctional behaviours, the management strategy, cost assignment and costing systems usually used in businesses, whether in accounting, finance, management and economics with the use of alternative tools, techniques and approaches to increase profitability and maximize the worth of owners (Al-Halabi, 2013, p.4). In the area of cost accounting such environments accompanied with the development of cost accounting systems by which many cost management tools have been adopted by management businesses with certain objectives in mind, such as achieving stability and continuity at work in line with changing environmental businesses (King, 2001, p.27). To be more specific, management at the middle and the top levels do adopt up-to-date techniques and tools to take sound economic decisions and to tackle problems of inefficiency and ineffectiveness in activities of companies (Dutta, and Gigler, 2002, p. 15).

Recently, many researchers called for more studies to apply modern management tools and techniques

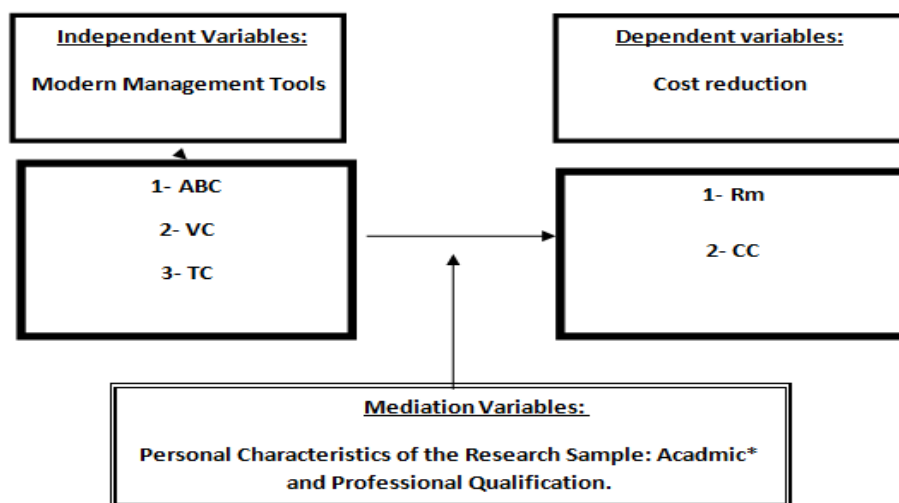
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in businesses that can affect operational performance and develop new controls and procedures to achieve predetermined objectives (Chi, Listic and Pevzner, 2011, p 319 ; Judeh, et.al., 2011, p 20; Taylor and Ux 2010, p. 131; Greiner, Kohlbeck and Smith, 2013, p. 12). Other studies focused on control tools to support management and accounting control systems through: (i) imposing procedures on job description and using formal procedures with management and accounting systems; (ii) improving current performance measures; (iii) providing continuous disclosures for owners; and (iv) providing a list of data that includes questions and required documents to review and audit accounting and control procedures for owners of companies (Rapp, 2010; Dorgham, Al-Halabi , and Shanikat, 2014, p. 4; Hilton, 2008, p. 231).

The current research focused on exploring the impact of modern management tools on cost reduction in service companies listed at the Amman stock exchange, as shown in figure (1).

**Figure (1)**  
**The Research Framework\***



\*Middle Level Managers of activities: planning, purchasing, selling, financing,controlling, cost accounting, and warehousing.

\*Other Management Levels: CEO, and Deputy CEO.

## 2. Objectives of the research

The following are objectives of this research:

- 1- identifying the impact of applying cost management tools on cost reduction of listed service companies – construction and health companies- in Jordan.
- 2- studying the real practices adopted by management to reduce costs without affecting features and the quality of services, using the analytical-descriptive approach with a questionnaire forms distributed to sampling units.
- 3- identifying differences in cost objects in order to bridge the gap between direct and indirect costs in the sample studies, and discovering how formally modern cost management tools can affect cost efficiency.
- 4- identifying the relationship between selected cost management tools to reduce cost in areas of operations in construction and health companies.

## 3. Research Latitude

Based upon the management accounting literature, this study identified ways of reducing operational costs by adopting modern cost management tools in five Jordanian service companies. Independent variables were selected, namely: activity-based costing , value chain management, and target costing, whereas selection of dependent variables were done based on ways of achieving cost efficiency in areas of raw materials costs and conversion costs within Listed construction and health companies in Jordan. There is little evidence on the impact of these tools on service companies listed at the Amman stock exchange, and accordingly, attempts were made to create ideas on the extent on which such selected modern tools may have impacts on the cost efficiency through using formal procedures and support the management strategy and economic decisions in service companies.

## 4. Literature Review

The accounting literature disclosed a set of alternatives to develop traditional cost accounting systems, thus, the

activity-based costing approach (ABC) which resulting in accurate assignment of indirect costs on activities and relying on quantitative and qualitative criteria to support pricing decisions (Drury, 2006, p.9; Ellis,2003, p.334; Brimson,2001,p.182 ). Actually, an activity-based costing system relied on a three-phase approach in which starting with identification of main and support activities that added values to the company, followed by identifying cost drivers used for allocating indirect costs, and thus, to accumulate costs into cost pools or activities' cost centres, and ended up with allocation of activities costs through their cost centers on cost objects or services (Garrison and Noreen, 2006, p.95; Steimer, 2000, p.42). The activity based costing system is overcoming the problem associated with the traditional costing system by taking into account not only volume-based cost drivers but also non-volume based activities, and establishing their relevant cost drivers since they could not be linked directly to the service for which activities were performed (Drury, 2004, p.109; Kaplan and Atkinson, 1997, p.222). Moreover, the pricing process on the basis of market forces is considered another modern approach that is stemmed on the target costing (TC) since it directed the effort of management towards the market research to identify both the target price and target profit and then identifying the target cost accordingly (Shimizu, 2013 p. 28; Khan, 2011, p.178; Schinckus, 2010, 124). Further, the target costing is considered an important technique of cost management oriented towards the market and it is used at the early stage of the service cycle leading to improvement in the quality of services and cost efficiency (Swenson and Ansari, 2010, p.14). The target costing approach had been emerged in Japan in 1973 as a tool to develop some American approaches, such as the engineering value approach, to achieve triple competitive advantages: the cost, the price, and the quality ending up with the cost of service or product, with the aim of facing modern business environments (MAS, 2002, p.85). Actually, integrating the target costing and the Kaizen approaches proved to have cost reduction through the comparison being made between the initial cost and the target cost, increasing profitability and achieving the competitive advantage (Shimizu, 2013 p. 30; Garrison and Noreen, 2002, p.145; Adams et. al., 2010, p. 313). Some researchers went further to summarize steps in executing the target costing through: i- identifying the target price; ii- identifying the target margin; iii- identifying the target cost through the difference between i and ii ; iv- applying the engineering value to achieve; v- applying the Kaizen approach to control operational activities; and vi-adopting the continuous reduction in costs through the difference between the initial cost and the target cost to support profitability and competition (Geim and Flesher, 2014,p.164; Shiozawa, 2006, p.27). This interaction between prices and costs is seen important in order to achieve predetermined objectives (Shiozawa, 2006, p.29). The interaction between the ABC and TC should also be integrated with the value chain which consisted of many phases: starting with the design of new services or the existence of current services; passing through raw material suppliers, maintenance suppliers; and ending up with customers through distributors and agents, and other parties may get benefits from the members participation of the VC (Khan, 2011, p.181). On the other hand, some studies focused on the possibility of applying the target costing in hospital services and, in particular, locations of patients and pricing of surgeries of health units, using a questionnaire form, and found that linking updated procedures of the target costing with the activities, and achieving cooperations of the value chain proved to be successful (Camacho and Rocha 2008, p.21). Evaluation of the application of the target costing in America provided practices and insights into what is called an effective cost pressure on manufacturing companies under study and recommended continuous studies on other companies (Swenson and Ansari, 2010, p.18). The value chain analysis is applied to coordinate the individual parts of the value chain together creating conditions to improve customer satisfaction, cost efficiency, quality and delivery of services (Gleim and Flesher, 2014, p.160). In order to achieve the current cost in line with the target costing, the cooperation principle is needed between related parties who are working inside the company, that is, the middle level of management , such as operational members, purchasing members, warehousing members, financing and costing members, and marketing and selling members (Horngren, et. al., 2006, p. 143; Gleim and Flesher, 2014, p.163). And for those who are outside the company whether they are dealing directly with the company or who are benefitting from its services (such as, reliable creditors, customers, governmental parties, environmentalists, and tax authorities) they must be initiated (Camacho and Rocha 2008, p.26). Other researchers went further and discussed that analyzing competitors of companies is an urgently needed process to get cooperation of the value chain members and is considered the most important element of the target costing approach to support the competitive advantage through the price distinction that leads to the target cost as a result of the company's strategy (Khan, 2011, p.183; Schinckus, 2010, 128; Gibson, 2014, p 280).

The researchers of this study believed that such cooperation and participation can not be effectively achieved without the application of both the activity based costing and the target costing within the umbrella of the value chain members with the main aim of reducing costs in service companies listed in the Amman stock exchange in Jordan.

## 5. Research Problem

Many service companies perceived the current traditional costing system in isolation of other management systems. This led to difficulties in providing relevant information for pricing decisions. Moreover, there are

problems of costs distortion, inefficient allocation of resources, the way of managing waste and damages of raw materials, and inaccurate bases of allocating indirect costs, and difficulties in controlling normal and abnormal working times in companies. As a result, cost may not be reduced indicating lower profitability and poor operational performance that affect the quality of services in the construction and health companies, ending up with unsound economic and investment decisions. Accordingly, the whole economy will be negatively affected by such decisions leading to instability in economic activities at micro and macro levels.

Thus, the main problem of this research is presented to answer the following main and sub-main questions:

1- what is the impact of applying modern cost management tools (ABC, VC, and TC) on cost reduction (RMC, and CC) in service companies listed at the Amman stock exchange?

1-1 what is the impact of applying modern cost management tools (ABC, VC, and TC) on raw material costs (RMC) in service companies listed at the Amman stock exchange ?

1-2 what is the impact of applying modern cost management tools (ABC, VC, and TC) on conversion costs (CC) in service companies listed at the Amman stock exchange ?

2- what are differences of the impact of applying modern cost management tools (ABC, VC, and TC) on cost reduction (RMC, and CC) in service companies listed at the Amman stock exchange devoted attributed to academic and professional qualifications?

## **6. Research Methodology**

The research relied on a descriptive and analytical method, and accordingly, the research was divided into two parts: the first part was theoretical by discussing and analyzing the related cost and management accounting literature, and the second part was analytical by studying areas of cost reduction in raw materials costs and conversion costs, based on: (I) the research hypotheses and (II) the research method.

### **6.1 Research Hypotheses**

The research hypotheses are as follows:

1- H01 there is no significant impact ( $\alpha= 0.05$ ) of applying modern cost management tools as independent variables (ABC, TC, and VC) on cost reduction as dependent variables (RMC, and CC) in service companies listed at the Amman stock exchange.

2- H01-1 there is no significant impact ( $\alpha= 0.05$ ) of applying modern cost management tools (ABC, TC, and VC) on raw material costs in service companies listed at the Amman stock exchange.

3- H01-2 there is no significant impact ( $\alpha= 0.05$ ) of applying modern cost management tools (ABC, TC, and VC) on conversion costs in service companies listed at the Amman stock exchange.

2- H02 there are no differences of the impact of applying modern cost management tools (ABC, TC, and VC) on cost reduction (RMC, and CC) in service companies listed at the Amman stock exchange attributed to academic and professional qualifications.

### **6.2 The Research Method**

A pilot study was done through short visits to the sample in study where main questions were presented and discussed with participants of construction and health companies to have an idea on whether there was a possibility to apply modern cost management tools. Most service companies were still using traditional cost management systems, but they were willing to apply new techniques that control costs in the competitive environment. The research method represented the research population and sources of data gathering, from which a sample of fifty participants was selected, that is: forty executive managers located at the middle level, and ten participants of CEO, deputy CEO, and BOD members, who were working in the middle and top management levels and their related activities in three Jordanian service companies listed at the Amman stock exchange. A statistical questionnaire form that included questions of the research objectives presented to the research participants: executive managers, CEO, owners and BOD members, as shown in Table (1).

**Table (1)**  
**Distribution of the research sample and percentage of response**

Participants in five service companies distributed as follows:	Executive managers	CEO, owners and members of BOD	Total
1- CEO, deputy CEO, owners, and members of BOD	--	15	15
2- planning, purchasing, selling, financing, controlling, cost accounting, and warehousing.	45	--	45
total	45	15	60
Responses	40	10	50
% of responses	88.89%	66.67%	83.33%

Furthermore, statistical tests for the research sample were applied on (i) the independent variables: the activity based costing, the value chain, and the target costing approaches; and (ii) dependent variables: cost reduction of raw materials and conversion costs. The focus was on the research participants who held professional and academic certificates (BSc/MSc, and PhD) and have professional experience in their positions for more than five years.

### 6.3 Research Statistical Techniques

Based on the computerized coding system for all research independent and dependent variables, the statistical package for social sciences (SPSS) were used to run the following descriptive and inferential statistics:

- 1- Descriptive statistical analyses and normal distribution measures were applied on independent and dependent variables, such as Means and standard deviations, in order to know the highest (average of 3.5), the moderate (average between 3.5 – 3.49), and lowest (average of lower than 2.49) observations.
- 2- Pearson Correlation Coefficient test to find out the relationship between independent variables that could be appropriately selected for later tests.
- 3- Simple regression tests were used to find out the impact of each individual variable of the chosen independent variables in dependent variables.
- 4- Multiple regression tests were used to find out the impact of each group of independent variables in dependent variables.

## 7. Research Results and Discussion

An introduction and simplified explanation were made in the questionnaire form on the notion of activity based costing, the value chain, and the target costing and their linked procedures to increasing the efficiency of activities in general and the efficiency of purchasing, costing and production directorates of Jordanian service companies in particular. This was followed by presenting the importance of modern cost management tools, focusing on their importance in areas of cost reduction, customer satisfaction, and competitive advantages. Further, the research questions were prepared based on the related cost and management accounting literature on the importance of cost management tools in providing decision makers with relevant financial and nonfinancial data, and attempts were made to allow the participants to read the questionnaire and this was considered a test to discover the importance and usefulness of modern cost management tools in service companies.

Table (2) summarized the importance and benefits of integration between the ABC system, the VC analysis, and the TC technique in service companies. The item of “applying the ABC system as part of the pricing decision evaluation” as elements of efficient allocation of indirect costs on activities with the support of different executives, including CFO, CEO and top management of BOD.

**Table (2)**  
**Importance of integration between the ABC systems with the VC and the TC in activities of service companies**

Items in the questionnaire	Ranking*	Mean	S %	R Square %
1- purchasing and contractual procedures affecting reduction of costs	4	2.95	0.75	0.25
2- decreasing conflict of interests between companies and suppliers	3	2.14	1.15	0.54
3- simplifying formal purchasing procedures	3	2.32	1.36	0.59
4- applying the ABC system as part of the pricing decision evaluation	5	3.03	0.62	0.20

\* Ranking is based statistically on means at 5% significant level and the range of Likert scale from no. 1 not important to no. 5 which is so important.

Further, Table (2) referred the way of integrating the purchasing activity with other related activities

through the VC members. Purchasing orders, issued from different activities, were received periodically by the purchasing activity, followed by contacting reliable suppliers. The phase of opening bidders offers and getting an approval from the top management for confirmed purchasing orders was performed. After receiving the required raw materials, the required cash was transferred to the nominated reliable supplier (raking 4 with mean of 2.95 and SD of 0.75%; and raking 3 with mean of 2.32 and SD of 1.36%).

Table (3) summarized results of participants agreement on the extent of developing procedures related to the integration of the ABC system with the VC and TC procedures with the purpose of minimizing costs in activities of service companies. Participants agreed on the existence of problems of cost inflation and weak efficiency of activities and the need for an interaction between cost management tools to tackle such problems through: (i) providing additional financial and nonfinancial information through special reports, such as : the impact of raw material wastage on operatikon efficiency, a market penetration study, and R&D). This is done through formal

**Table (3)**

**Participants' agreement on developing procedures for cost reduction in service companies**

Management control and accounting procedures	Ranking*	Mean	S %	R Square %
1- providing additional financial and nonfinancial information through special report .	3	3.31	1.16	0.350
2- evaluation of inventory policies and providing timely reports in relationship between the warehousing, operational and sales activities .	3	3.18	1.18	0.371
3- wastage and damage reports and procedures to eliminate them.	2	3.08	1.28	0.416
4- internal contingent factors adaptation, such as performance masures and types of job processes.	1	3.46	1.07	0.435

\* Ranking is based statistically on means at 5% significant level and the range of Likert scale from no. 1 not important to no. 5 which is so important.channels to increase cost efficiency of activities of service companies and reformulating procedures related to the warehousing and purchasing activities (raking 3 with mean of 3.31 and SD of 1.16 %; raking 3 with mean of 3.18 and SD of 1.18 % ); and (ii) providing timely reports to achieve harmonization between operational, sales and warehousing activities (raking 3 with mean of 3.18 and SD of 1.18%; and raking 2 with the mean of 3.08 and SD of 1.28 %).

**7.1. Testing the Research Hypotheses**

**7.1.1. Testing main and sub-mail hypothes of the research**

H0-1: there is no singnificant impact ( $\alpha= 0.05$ ) of applying modern cost management tools as independent variables (ABC, TC, and VC) in cost reduction as dependent variables (RMC, and CC) in service companies listed at the Amman stock exchange, as referred to in Table (4).

**Table (4)**

**Regression results on applying modern cost management tools on cost reduction**

Sig.	R <sup>2</sup>	R	F	H0-1
.046	0.132	0.364	68.615	Rejected

It is more likely that the activity based costing system is more applicable in health companies than construction companies where there is a need to accurately assigning indirect costs according to this system in the health sector. This is due to more benefits by alplying this system to management of health companies and their users. Bills of health companies were distributed to added-value activities, such as the cash activity, the creditors activity, the customers activity, the budgeting activity, the internal control activity, and the assets management activity. On the other hand, very few and big construction companies were partially adopting the ABC through which results of assigning indirect costs on construction activities, using cost drivers –considered as a cost pool center- led to accurate contractual costs for each construction contract based on the cause- benefit effect.

Although there were more benefites on the application of ABC in health companies it is found that even more important to merge this system with other modern techniques such as the VC and the TC, as done in this study. In this regard, cost reduction is more effectively achieved through the integration of the VC and the TC in the sample of health companies more than those in the construction compaies, leading to competitive advantages and increasing profitability. Defects and wastage of raw materials, maintenance suppliers, maintenance workers, patients and competitors were all considered important phases in the value chain in health companies. Accordingly, table (4) showed the regression results of the main hypothesis, thus the H0-1 is rejected in that there is a significant impact of modern cost management tools in cost reduction in service companies listed at the Amman stock exchange. This result is consistant with prior studies, e.g, Shimizu, 2013.

H01-1 there is no significant impact ( $\alpha= 0.05$ ) of applying modern cost management tools (ABC, TC, and VC)

in raw material costs in service companies listed at the Amman stock exchange, as referred to in Table (5).

Providing raw materials with specific specifications on time and controlling defects and wasgaes through the timetables of operational processes were crucial in the phases of VC in health companies.

**Table (5)**

**Regression results on applying modern cost management tools on raw material costs**

Sig.	R <sup>2</sup>	R	F	H0-1-1
.039	0.110	0.332	69.85	Rejected

Further, the application of the ABC system alone without merging modern approaches such as the VC and the TC may not even gain its benefits leading to dysfunctional behaviours in areas of cost efficiency of raw materials in service companies.

The main problems facing health companies is the timing management factor that match phases of the VC with both the ABC and the target costing TC, thus, the sales activity, for instance, was more advanced in its cost pool and procedures to gain customers' satisfaction but lacking cooperation with the purchasing activity, the operational activity, the cost accounting activity, and other related activities. That is, different accounting methods and control procedures in these activities led to mismatching in levels of cooperation between members of the VC. Furthermore, If the top and middle management did not realize the importance of the TC, then, cost efficiency in these activities were not achieved with less profitability and competitiveness. The existence of the VC, supported with no delays in supplying raw materials, to which any shortage in RM supply can be eliminated by cooperation between activities of the operational, sales, and accounting staff, resulted in gaining potential opportunity in service companies. Thus, there is a significant impact ( $\alpha= 0.05$ ) of applying modern cost management tools (ABC, TC, and VC) in raw material costs in service companies listed at the Amman stock exchange. This result was in line with the prior study (Khan, 2011; and Camacho and Rocha 2008).

H01-2 there is no significant impact ( $\alpha= 0.05$ ) of applying modern cost management tools (ABC, TC, and VC) in conversion costs in service companies listed at the Amman stock exchange, as referred to in Table (6).

**Table (6)**

**Regression results on applying modern cost management tools on conversion costs**

Sig.	R <sup>2</sup>	R	F	H0-1-1
.041	0.127	0.357	64.59	Rejected

There were sufficient and well-trained work force supported financially and managerially by the top management as a need to apply the ABC in health companies compared with the construction companies. Moreover, regular revisions of routine and nonroutine procedures were used to omit unimportant processes and procedures. Anlysis of interview questions in some health companies found that there was a need for externally-specialized experts for taining employees leading to more costs. Havign done that, some health activities by their nature were nonroutine tasks in nature, e.g, surgeries tasks-which were difficult to record in computers. Such activities serviced at the company's level as a whole which can not be easily tarced. Discussion with participants on such obstacle found that the application of the ABC in isolation with other techniques did mitigat the process in a way that led to mismatched with the target cost established before. Thus, there is a significant impact ( $\alpha= 0.05$ ) of applying modern cost management tools (ABC, TC, and VC) in conversion costs in service companies listed at the Amman stock exchange

H0-2 there are no differences of the impact of applying modern cost management tools (ABC, TC, and VC) in cost reduction (RMC, and CC) in service companies listed at the Amman stock exchange attributed to academic and professional qualifications, as referred to in Table (7).

**Table (7)**

**ANOVA results on the impact of cost management tools on cost reduction attributed to qualification factor**

Sig.	R <sup>2</sup>	R	F	H0-1-1
.012	0.032	0.178	23.18	Rejected

Activities commitment on technical and management measures can be achieved by adopting modern cost management tools. Thus, there were differences of the impact of applying modern cost management tools (ABC, TC, and VC) in cost reduction (RMC, and CC) in service companies listed at the Amman stock exchange attributed to academic and professional qualifications. The sample in study emphasized that there was a need to adopt training programs to upgrade levels of employees at work and investment in the wrork focre which is so important to achieve loyalty, stability at work in most areas on activities for cost efficiency and along to all level of activities in service companies. For example, unexpected absence of a professional person for one health company was solved by doing the same task by an assistant person, who finished recently a training program, which led to save lives for some patients. This is in line with prior studies, e.g, (Judeh, 2010).

## 8. Conclusions and Recommendations

### 8.1 Conclusions

Based on the research results, the following are a number of conclusions that reflected the positive impact of the ABC systems, the VC and the TC in service companies listed in the Amman stock exchange:

1. based on the descriptive statistical analysis participants perceived the ABC, the VC and TC as between moderate to high levels (average results were between 3- 4.2) with the conclusion that employees of service companies perceived the importance of these modern cost management tools to achieve predetermined objectives and sub-objectives.
3. field visits showed weak internal control systems over some activities, such as cost accounting activities, where still applying quantitative bases of assigning indirect costs cost objectives with little cooperation and coordination and sometimes conflicting interests between activities. The conclusion is characterized in lacking employees experience in service companies in general and in construction companies in particular.
4. there were significant impacts of the three modern cost management tools (independent variables) in cost reduction (dependent variables) (at 4.6% sig.), with different levels of impacts for each element of the dependent variables, that is, the impact in the raw material costs (at 3.9% sig.); and the conversion costs (at 4.1% sig.). The conclusion is that there is a need to evaluate and develop line and staff procedures to omit unimportant processes at the inter-activities and intra-activities in service companies.
5. there were no differences on the impact of cost management tools in cost reduction attributed to the qualification factor (at 1.2 % sig.). The conclusion is that there is a need to adopt training programs to upgrade levels of employees at different levels of activities in service companies.
6. costs reduction in service companies can be achieved through determining differences between target prices and the profit margin to put pressure on management to control avoidable and unavoidable items of raw materials and conversion costs. Then, the initial service design must be determined through a technical and financial estimation of the characteristics and specifications of service companies, such as the construction and the health services.

### 8.2. Recommendations

The following are research recommendations for service companies listed in the Amman stock exchange:

1. more studies are needed on the application of modern cost management tools on other types of service companies with impacts on profitability, cash flows, and liquidity using questionnaire forms and content analysis, if possible.
2. adopting regular and continual training programs for specialized and staff positions in service companies to understand the application of modern cost management tools in service companies.
3. Developing cost system structures and internal control procedures to support strategies in service companies.
4. the need to discover new cases to identify areas of cost reduction for manufacturing companies to enhance performance effectiveness and efficiency of activities based on the application of modern cost tools, as done in this search.

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