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Activity-Based Costing (ABC): Implementation and Success in Pakistani Companies

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Abstract

The main quest for this research is to examine the actual implementation experience of the Activity-Based Costing system in the corporate sector of Pakistan. The study investigates the benefits received that are associated with the successful implementation of Activity-based Costing. The study aims to investigate two dimensions of ABC system: 1) what are the key internal organizational success factors for ABC's successful Implementation? 2) Whether ABC system successful implementation is helpful or not in the realization of the associated benefits? Path regression analysis based on Structural Equation Modelling Technique (AMOS) has been used to verify these hypothetical relationships. Our results verify that internal organizational factors such as management commitment, top management support, implementation training, and resource adequacy have a positive impact on ABC's successful implementation. Consequently, ABC's successful implementation ensures the attainment of associated benefits such as accurate product costing and better overhead cost allocation. However, the study fails to link it with cost reduction and a better budgeting process.

Keywords: Activity-Based Costing, Organizational Factors, Implementation, Accurate costing, Cost reduction, Structural Equation Modeling, Pakistan.
JEL Classification: C30, M41, M48

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1. Introduction

1.1 Background of the Study

Activity-based costing (ABC) is an information system introduced in the 1980s to enhance its usefulness for the management strategic decision-making process and improve upon some of the shortcomings of the traditional costing system such as the overhead cost allocation. It is a method provides better allocation of production overhead costs to products. According to CIMA Official terminology, ABC as an "Approach to the costing and monitoring of activities which involves tracing resource consumption and costing final outputs. Resources are assigned to activities, and activities to cost objects based on consumption estimates. The latter utilizes cost drivers to attach activity costs to outputs". According to Cooper (1992), there was dissatisfaction prevailing with the available costing procedures at that time which gave rise to the need for a new system that could be effective in a modern manufacturing environment. ABC was developed as a result of the efforts of Cooper and Kaplan through a series of "innovation action research cycles" described in Kaplan (1998). Horngren (2012) defines "Activity-based costing (ABC) as a system by identifying individual activities into fundamental cost objects". These activities are grouped into "cost pools", and product or services absorb the cost of utilized activities. Lewis (1995) has defined the Activity-based costing as: "A method of accumulating product cost by determining all costs associated with activities required to produce the output". It is clear from the definition that the emphasis of the ABC is on the searching for the activities that drive the costs to be incurred, so that's why the name Activity-based has been given to this costing technique. Needy and Bopaya (2000) have argued that ABC is a cost management technique that has improved on traditional costing weaknesses in the treatment of indirect costs. However, Garrison and Noreen (2003) have mentioned its use regarding decisions that affect capacity and hence "Fixed Cost". Further, they have pointed out that ABC is normally used as a supplement to the basic or usual costing system. It is never meant for the replacement of the traditional costing system. The cost calculated by ABC costing is more accurate and detailed than the traditional system as suggested Kaplan, (1986 & 1994); Johnson and Kaplan (1987); Innes and Mitchell (1990); Innes and Mitchell (1991); Innes and Mitchell (1995).

1.2 Significance and Rationale

This work would contribute to the existing body of knowledge in that there is no work done on the topic in Pakistan as yet. Such case studies and surveys are being done in Europe, Jordan, Africa, Iran, and

many others but no such work is done in Pakistan as yet. A few studies are available such as Godil and Shabib- ul- Hassan (2013) which is a case study of the relevance of ABC in the textile sector of Pakistan. The main purpose of this research is to examine the actual implementation experience of the Activity-Based Costing system in the corporate sector of Pakistan. The study aims to investigate the two dimensions of the ABC system: 1) what are the key internal organizational success factors for ABC's successful Implementation? 2) Whether ABC system successful implementation is helpful or not in the realization of the associated benefits? This study tries to examine the implementation of Activity-based costing (ABC) technique to the different companies in Pakistan. A survey is carried out in different sectors companies which have already implemented the ABC. It is expected to have "*correct* cost" and subsequently, the price of the products and managers will be doing better decision making. The correct cost may be less than or more than the existing one. Correct cost broadens the view of the managers about their existing portfolio of products. Correct cost allocation to the products gives a true picture of the net profit contributed by each product. This study may also open doors for further research on the Power sector in Pakistan. Correct costing and pricing are a big issue in Pakistan. The power sector in general and the distribution companies, in particular, are facing difficulties and are under pressure to find the true cost of their services. If relevance found an ABC system is implemented and used in the real sense, then it is expected that the electricity distribution companies will be in a better position to find the true cost of their operations. With the accurate cost figures, the benefit of the correction is expected to flow towards the general public.

The respondents in the survey include CIMA members as well. CIMA is the largest body of Management Accountants in the world. CIMA has been involved in conducting famous researches on the same topic in the past and CIMA has asked to share the results of the research with them. Further, the research will contribute and add value to the organization as well in that the information provided to the managers will improve their decisions, policies, and practices. It is also expected that on the same lines many other surveys and case studies may also be carried out in Pakistan using other management accounting techniques such as ABC. The companies which have not implemented the ABC may also gain motivation to implement ABC when they will see benefits received from the implementation of the ABC.

2. Literature Review

The literature identified an ample amount of survey studies conducted on investigating the ABC system adoption, identifying the key success factors for implementation, but mostly in the case of developed economies such as the US, UK, Canada, Australia, Ireland, and New Zealand both for manufacturing and services sector. Innes and Mitchell (1991) found that globalization and lower operating costs of the competitors, play the role of motivating factors behind the adoption of ABC, and later discovered the adaptability rate of ABC System. While cooper (1991) mentioned that the growing cost and diversity of the products are the key factors behind ABC adoption. Adams (1996) has also reached the same conclusion that diversified product lines are one of the two main reasons that make Life Insurance industry suitable environments within which ABC can be applied. ABC technique is also helpful in the services sector such as universities to identify the methods of streamlining the cost of activities rather than avoiding the total cost in the long term (Broad and Crowther, 2001).

Innes and Mitchell (1995) use the results of a U.K based survey conducted in 1994 on the U. K's largest 1000 companies. In most of the areas of ABC application, benefits were received by most of the organizations. Its usage has been increased to a wide variety of cost management applications. They have used these applications as a framework for the survey presentation. The framework includes factors such as stock valuation, output decision, cost reduction, budgeting, new product, customer profitability analysis, performance measurement, and cost modeling.

2.1 Factors Affecting ABC Successful Implementation

Empirical work on factors affecting ABC success has been done by Shields (1995). It was found that ABC's success was linked to six behavioral and organizational variables. The findings were based on the respondents' perception of success. The variables were top management support; performance evaluation and compensation; integration with competitive strategies; Ownership of the ABC project by other departments; training provided for designing implementing and using ABC and provision of adequate resources. He supported the above mentioned behavioral and organizational variables, but he couldn't find any correlation between ABC success and technical variables. Technical variables were software used and developing the stand-alone system.

Three out of six variables used by shields (1995) were tested by McGowan and Klammer (1997). It was found that top management support, performance evaluation links, and adequacy of training and training resources were significant in establishing the effective implementation of the ABC.

In the same year, Foster and Swenson (1997) worked on the explanatory variables concerning ABC success. The most powerful explanatory variables were top management support, implementation training, resource adequacy and integration of ABC success with performance linked to compensation.

A questionnaire survey was conducted by Bjornenak (1997) on the diffusion of the ABC system in Norway. The survey questionnaire was circulated to 132 large manufacturing companies in Norway. The response was good and 75(57%) questionnaires were acceptable. Out of 75 responses 30 had adopted the system, 23 had not adopted while 22 had no information about the ABC system. The research examines the variables that influence the adoption of the ABC system.

Factors that are associated with the success and failure of the ABC system have been studied by Friedman and Lyne (1999) using the case study method. Their findings were also supportive of the previous studies mentioned above regarding the association of the organizational variables. It was found that success of ABC system is associated with clear need recognition at the outset, top management support (broad-based support), accountants working closely with the non-accountant staff for ABC development and its use, adequate resources and synergistic links of ABC system with other organizational activities such as TQM.

Association between ABC Success and some organizational level factors was investigated by Innes et al. (2000). Eight independent variables were used to find a relationship with ABC success were top management support, in-house accountants' involvement, production personnel involved, and consultants' involvement. The findings were arranged in a manner to show the comparative results of the 1994 and 1999 surveys. The scale used consisted of two prongs namely importance rating and success rating. The respondents had to rank out of 5, a specific application on how important it is and how significant impact it had on the ABC success. A significant impact was studied only for that top management support.

2.2 Benefits from Successful ABC Implementation

Many studies have been carried out which have proved that the ABC system gives benefits to the organization. Innes and Mitchell (2000) have reported the benefits indicated by their 1999 survey were: better cost control information, Customer profitability knowledge, superior decision-making information, improvement in product cost/profitability information and improvement in performance measurement.

Chongruksut (2002) also studied the adoption, benefits, and problems faced in the implementation of ABC in Thailand. The results of the research indicated that ABC improves cost control, provides more accurate product cost. ABC gives better performance measurement and encouragement of quality commitment and continuous improvement. Further, it has been found that ABC increases the effectiveness of budgeting by identifying the cost performance relationship at different activity levels. It aids in cost reduction efforts, better cost allocation of overhead costs.

A replica of the study by Innes et al. (2000) was conducted by Cotton et al. (2003) on the implementation of ABC in New Zealand. The respondents were the members of the Institute of Chartered Accountants. The study indicated the benefits and purposes for which the ABC system was used. These purposes include: "inventory valuation, product or service pricing, production or service output decisions, cost reduction and cost management, budgeting, new product or service design, customer profitability analysis, activity performance measurement and improvement".

A survey was conducted by Pierce and Brown (2004) of the large manufacturing service and financial sector to investigate the ABC implementation in Ireland. The study indicated the benefits as follows: "ABC system gives more in-depth analysis, value-adding decisions. Further ABC provides accurate product cost, improved product profitability and evaluation of capital investment."
A questionnaire survey was conducted by Cohen et al., (2005) on a sample of 177 Greek Companies. Discussing the ABC implementation benefits following were among the benefits: Overhead (cost) decrease, more realistic budgets, cost reduction, calculation of actual (accurate) total product cost.

Reasons for adopting and implementing ABC were studied by Sartorius et al. (2007) in South Africa. The reasons included: Accurate

product cost, understanding product, and customer profitability and budgetary system.

It was argued by Abde-Alnasser and Wei Li (2008) that the Bank of China implemented the ABC system in 2005. The purpose of implementing was to get more efficiency in cost control.

In the presence of mixed perception regarding ABC success/failure and unconvinced behaviors regarding its benefits, it is rather very difficult to justify the role of ABC system implementation in the case of developing economies such as Pakistan. Before this study, there is no detailed information regarding the firms' experience of ABC adoption, implementation, and realization of associated benefits in the context of Pakistan. Only one study by Godil and Hassan (2013) has tried to identify the problems encountered during ABC practical implementation in the textile sector and associated its failure to lack management commitment. However, research on other sectors such as manufacturing as well as on services sectors still needed. The present study aims to fill this research gap and attempts to examine the ABC implementation and its success in the Pakistani context. The study has the following objectives:

- ✓ To investigate the impact of key internal organizational factors on ABC Successful implementation.
- ✓ To determine the impact of ABC's successful implementation in achieving the associated potential benefits such as accurate costing, cost reduction, and better budgeting.

The research will try to answer the following questions which are in a sequence of the research objectives as above.

- ✓ Is there any association between the internal organizational factors of an organization and successfully implementing the ABC?
- ✓ Is the successful implementation of the ABC system lead towards the associated benefits in the context of the corporate sector of Pakistan?

The study will add to ABC implementation in the existing body of knowledge and contribute to management decision making processes, practices, and policies. The companies which have not yet implemented the ABC may also gain motivation to implement ABC, observing the potential benefits derived from the successful implementation of the ABC.

3. Conceptual Framework

The study has adopted the conceptual framework to examine the role of key organizational success factors on ABC successful implementation in the context of Pakistani companies from the seminal contributions done by Innes et al. (2000); Shields (1995); Friedman and Lyne (1999); and McGowan and Klammer (1997). Further, it is also investigated whether ABC implementation is helpful or not in materializing the potential benefits such as better overhead cost allocation, accurate costing, cost reduction, better budgeting, and improved customer profitability analysis.

Figure 1
Conceptual Path Model for ABC System Success and associated Benefits

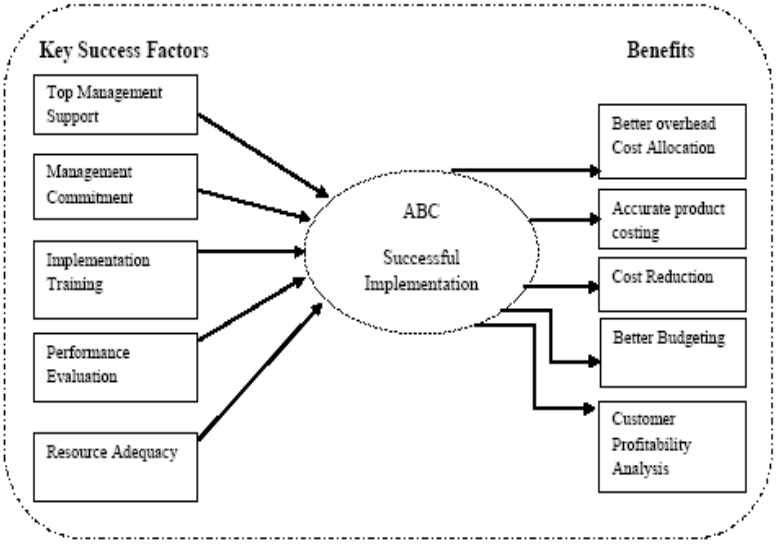


Fig.1 Conceptual Path Model for ABC System Success and associated Benefits

The hypotheses are based on the construct of the internal organizational environmental factors that have a significant impact on the success of ABC implementation. Management Commitment, Top

management Support, Implementation training, link to performance evaluation and resource adequacy have a significant direct positive impact on ABC's successful implementation. The hypotheses are as follows:

H1: There is an association between Management Commitment and ABC successful implementation in the corporate sector of Pakistan.

H2: There is a positive association between Top Management Support and ABC successful implementation in the corporate sector of Pakistan.

Many studies are supporting this association. Empirical work on factors affecting ABC success has been done by Shields (1995). It was found that the ABC success was linked to six behavioral and organizational variables as discussed earlier in the literature review section. The five variables were reported to be significant independent variables in determining the ABC. The significant variables were top management support; link to performance evaluation and compensation; implementation training provided for designing implementing; provision of adequate resources; and Link to the quality initiative. Foster and Swenson (1997) also used the model presented by Shield (1995). ABC Success was taken as a dependent variable in their research. The strong intercept value of 1.83 was shown by *top management support*. Association between ABC Success and some organizational level factors was investigated by Innes et al. (2000). A significant impact was studied only for that *top management support.* Friedman and Lyne (1999) used a case study method. Their findings were also supportive of the previous studies mentioned above regarding the association of the organizational variables. It was found that the success of the ABC system is associated with top management support. A questionnaire survey was conducted by Bjornenak (1997) on the diffusion of the ABC system in Norway. The research examines the variables that influence the adoption of the ABC system. Factors that are associated with the success and failure of the ABC system have been studied by Friedman and Lyne (1999) using a case study method. Their findings were also supportive of the previous studies mentioned above regarding the association of the organizational variables.

H3: There is an association between Implementation training and ABC successful implementation in the corporate sector of Pakistan.

H4: There is an association between performance Evaluation/Compensation Link and ABC successful implementation in the corporate sector of Pakistan.

Shields (1995) found that ABC's success was linked to six behavioral and organizational variables. The variables included training provided for designing implementing and using ABC and the provision of adequate resources. Three out of six variables used by shields (1995) were tested by McGowan and Klammer (1997). It was found that top management support, performance evaluation links, and adequacy of training and training resources were significant in establishing the effective implementation of the ABC. In the same year, Foster and Swenson (1997) worked on the explanatory variables concerning ABC success. The implementation training was one of the most powerful explanatory variables. It was found that performance evaluation links were significant in establishing the effective implementation of the ABC. Factors that are associated with the success and failure of the ABC system has been studied by Friedman and Lyne (1999). It was found that the success of the ABC system is associated with accountants working closely with the nonaccountant staff for ABC development and its use. Although clear words of training are not used over here the process mentioned above enters into the definition of the training. In the same year, Foster and Swenson (1997) worked on the explanatory variables concerning ABC success. The most powerful explanatory variables were top management support, implementation training, resource adequacy and integration of ABC success with performance linked to compensation.

H5: There is an association between Resource adequacy and ABC successful implementation in the corporate sector of Pakistan.

McGowan and Klammer (1997) found that adequacy of training and training resources were significant in establishing the effective implementation of the ABC. Foster and Swenson (1997) worked on the explanatory variables concerning ABC success. The most powerful explanatory variables included resource adequacy. Factors that are associated with the success and failure of the ABC system have been studied by Friedman and Lyne (1999) found that the success of the ABC system is associated with adequate resources and synergistic links of the ABC system with other organizational activities such as TQM. Association between ABC Success and some organizational level factors was investigated by Innes et al. (2000). Eight independent variables were used to find a relationship with ABC

success which included ere top management support, in-house accountants' involvement, production personnel involved, and consultants' involvement.

After successful implementation, companies are supposed to get benefits from it. The second objective deals with this phenomenon. The successful implementation is an independent variable and the benefits received are dependent variables.

H6: There is an association between ABC successful implementation and Accurate Product costing in the corporate sector of Pakistan.

Many studies have been carried out which have proved that the ABC system gives benefits to the organization. Innes and Mitchell (2000) have reported the benefits indicated by their 1999 survey were: better cost control information, improvement in product cost/profitability information.

Chongruksut (2002) also studied the adoption, benefits, and problems faced in the implementation of ABC in Thailand. The results of the research indicated that ABC improves cost control, provides more accurate product cost. A survey was conducted by Pierce and Brown (2004) of the large manufacturing service and financial sector to investigate the ABC implementation in Ireland. The study indicated that the ABC system provides accurate product costs. A survey was conducted by Cohen et al., (2005) on a sample of 177 Greek Companies. Discussing the ABC implementation benefits include calculation of actual (accurate) total product cost. Reasons for adopting and implementing ABC were studied by Sartorius et al. (2007) in South Africa. The reasons included: Accurate product cost, understanding product, and customer profitability and budgetary system.

H7: There is an association between ABC successful implementation and better overhead Cost Allocation in the corporate sector of Pakistan.

Many studies have been carried out which have proved that the ABC system gives benefits to the organization. Innes and Mitchell (2000) have reported the benefits indicated by their 1999 survey included better cost control information. Chongruksut (2002) also studied the adoption, benefits, and problems faced in the implementation of ABC in Thailand. The results of the research indicated that ABC improves cost control, provides more accurate product cost. ABC gives better performance measurement and

encouragement of quality commitment and continuous improvement. Further, it has been found that ABC increases the effectiveness of budgeting by identifying the cost performance relationship at different activity levels. It aids in cost reduction efforts, better cost allocation of overhead costs. A survey was conducted by Cohen et al., (2005) on a sample of 177 Greek Companies. Discussing the ABC implementation benefits following were among the benefits: Overhead (cost) decrease, more realistic budgets, cost reduction, calculation of actual (accurate) total product cost. Reasons for adopting and implementing ABC were studied by Sartorius et al. (2007) in South Africa. The reasons included: *Accurate product cost*, understanding product, and customer profitability and budgetary system.

H8: There is an association between ABC successful implementation and Cost Reduction in the corporate sector of Pakistan.

ABC system gives benefits to the organization. Innes and Mitchell (2000) have reported the benefits indicated by their 1999 survey were: better cost control information. Chongruksut (2002) indicated that ABC improves cost control. It assists in cost reduction efforts. A replica of the study by Innes et al. (2000) was conducted by Cotton et al. (2003) indicated the benefits of cost reduction and cost management. A questionnaire survey was conducted by Cohen et al., (2005) on a sample of 177 Greek Companies. Discussing the ABC implementation benefits cost reduction was among the benefits.

H9: There is an association between ABC successful implementation and better Customer Profitability Analysis in the corporate sector of Pakistan.

H10: There is an association between ABC successful implementation and better budgeting in the corporate sector of Pakistan.

Many studies have been carried out which have proved that the ABC system gives benefits to the organization. Innes and Mitchell (2000) have reported the benefits indicated by their 1999 survey were: better cost control information, Customer profitability knowledge, superior decision-making information, improvement in product cost/profitability information and improvement in performance measurement. Chongruksut (2002) also studied the adoption, benefits, and problems faced in the implementation of the ABC in Thailand. The results of the research indicated that ABC improves cost control, provides more accurate product cost. ABC gives better performance measurement and encouragement of quality commitment and

continuous improvement. Further, it has been found that ABC increases the effectiveness of budgeting by identifying the cost performance relationship at different activity levels. It provides assistance in cost reduction efforts, better cost allocation of overhead cost. An exact replica of study by Innes et al. (2000) was conducted by Cotton et al. (2003) on the implementation of ABC in New Zealand. The respondents were the members of the Institute of Chartered Accountants. The study indicated the benefits and purposes for which the ABC system was used. These purposes include: "inventory valuation, product or service pricing, production or service output decisions, cost reduction and cost management, budgeting, new product or service design, customer profitability analysis, activity performance measurement and improvement". A study by Pierce and Brown (2004) indicated the benefits as follows: "ABC system gives more in-depth analysis, value-adding decisions. Further ABC provides accurate product cost, improved product profitability and evaluation of capital investment." A survey conducted by Cohen et al., (2005) discussed the ABC implementation benefits: Overhead (cost) decrease, more realistic budgets, cost reduction, calculation of actual (accurate) total product cost.

Reasons for adopting and implementing ABC were studied by Sartorius et al. (2007) in South Africa. The reasons included: Accurate product cost, understanding product, and customer profitability and budgetary system. It was argued by Abde-Alnasser and Wei Li (2008) that the Bank of China implemented an ABC system in 2005. The purpose of implementing was to get more efficiency in cost control.

4. Model, Data and Methodology

Before this study, there is no information regarding the adoption of ABC Costing system in Pakistan. In this regard, we have organized a survey to collect the information on firms' experience regarding the ABC System adoption, implementation, and its benefits. The non-probability sampling technique has been used and 322 firm officials are contacted for this purpose. Among 110 responses, 68 percent of them represent the manufacturing sector and 32 percent of them represent the services sector. Data has been analyzed using structured equation modeling using SPSS and AMOS.

Structured equation Modelling (SEM) technique is a method to find the causal impact of independent variables such as management commitment, top management support, implementation training, link to performance evaluation, on dependent variable i.e. successful

implementation of ABC as shown in Fig.1. Then again SEM has been used to determine the causal impact of successful implementation of ABC on benefits derived such as better overhead cost allocation, better budgeting, cost reduction, and improved customer profitability analysis as described in Fig.1. Such types of models are mostly tested through "Path Regression Analysis based on Structural Equation Modelling Technique" invented by Wright (1921). SEM analysis starts by drawing a path diagram. A path diagram is an array of observed or measured variables in rectangles and a latent (unmeasured) factors in circle or ellipse. These boxes and circles are connected with the single-headed arrows describe a path diagram, to analyze the causal relationship among the factors. Besides that, double-headed arrows indicate covariances or correlations, among the factors without a causal interpretation.

Cagwin and Bouwman (2002) have used the same path regression analysis to measure the relationship between Activity-Based Costing and improvement in financial performance. The present work is further extended to test the association between internal organization environmental factors and ABC Implementation, and then to the benefits derived from implementation. Data has been collected through a survey basis and the questionnaire has been adapted from previous studies (Foster & Swenson, 1997). For data analysis, the study has been used the SEM in AMOS (Byrne, 2010) and the study will use firms as their target population which is using Activity Based Costing system in Pakistan.

5. Empirical Findings

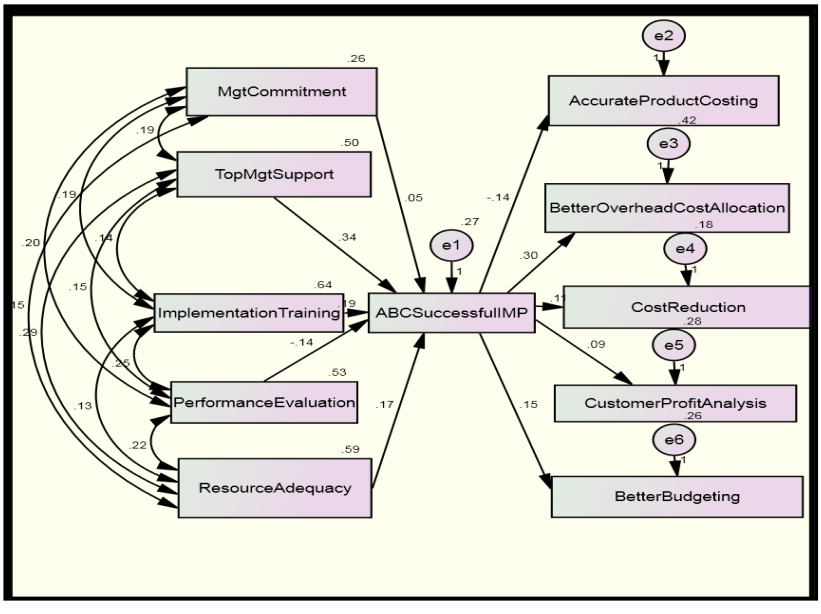
Table 1
Reliability Analysis

Variables	Cronbach's Alpha
Top Management Support	.70
Management Commitment	.61
ABC Successful Implementation	.62
Performance Evaluation	.61
Implementation Training	.60
Resource adequacy	.65
Accurate Product Costing	.71
Customer Profit Analysis	.81
Better Budgeting	.71
Cost Reduction	.70
Better overhead cost allocation	.69

The reliability of the scales was tested using Cronbach's Alpha in SPSS 21. Table.1 results report that all constructs/variables associated with Cronbach's Alpha value i.e. is greater than 0.60, showing the reliability of the instrument used in this research.

Structural Equation Modeling is used for testing the path regression Analysis as shown in Figure.1 According to this, the ABC successful implementation depends upon internal organizational factors such as management commitment, top management support, Implementation training, linked performance valuation, and organization resource adequacy, while in the second step, the ABC successful implementation derives the benefits such as accurate product costing, better overhead cost allocation, cost reduction, customer profit analysis, and better budgeting, etc.

Figure 2
Structural Equation Model (Path Regression Analysis)



Estimated results (Table. 2) indicate that the first overall Management Commitment found to be the most dominant variable that has a positive significant impact on ABC's successful implementation at a 5% level of significance. The second most important variable is resource adequacy that has found to have a significant positive impact on ABC's successful Implementation. Besides that, top management

support and implementation training are also found to be critical factors that have a significant positive impact on ABC's successful implementation as shown in table.2. In contrast, the linked performance evaluation has a negative significant impact on ABC's successful implementation.

Table 2
SEM Path Statistics (Results)

Variables				Est.	S.E.	CR.	P	Result
H1	ABC Successful IMP	<---	Management Commitment	.409	.193	2.117	.034	Accept
H2	ABC Successful IMP	<---	Top Management Support	.240	.077	3.103	.002	Accept
H3	ABC Successful IMP	<---	Implementation Training	.221	.091	2.433	.015	Accept
H4	ABC Successful IMP	<---	Link Performance Evaluation	-.681	.114	-5.957	***	Accept
H5	ABC Successful IMP	<---	Resource Adequacy	.381	.087	4.376	***	Accept
H6	Accurate Product Cost	<---	ABC Successful IMP	-.514	.149	-3.458	***	Accept
H7	Better Over Cost Allocation	<---	ABC Successful IMP	.461	.111	4.163	***	Accept
H8	Cost Reduction	<---	ABC Successful IMP	.067	.143	.469	.639	Reject
H9	Customer Profit Analysis	<---	ABC Successful IMP	-.046	.121	-.379	.700	Reject
H10	Better Budgeting	<---	ABC Successful IMP	-.033	.189	-.173	.860	Reject

Note: *** denotes parameter is significant at 1% level of significance.

It is also observed that ABC's successful implementation helps inaccurate product costing, better overhead cost allocation as reported in Table 2. However, respondents perceive that ABC Successful Implementation has no significant impact on cost reduction, (Table. 2). This result makes sense as it means as a result of the successful implementation of ABC, we may not always expect a cost reduction, but we may expect accurate product cost as it is seen in case of the acceptance of H6. The same is the case with the H9 and H10. ABC successful implementation has no significant impact (H9: estimate= -0.046, $t_{=}$ -0.379, $p_{=}$ 0.70), (H10: estimate= -0.033, $t_{=}$ -.173, $p_{=}$ 0.86) on Customer Profit analysis and better budgeting so it does not support H9

and H10 respectively. For both variables the t- value is outside the normal range and the p-value is also very high in both cases so probability distribution evidence is not supporting the hypothesis. It may be indicating that as the companies have started to implement the ABC, they have not reaped the benefits such as customer profit analysis and better budgeting.

Table 2
Covariance Matrix

Variables			Est.	S. E.	C.R.	P	Label
Implementation Training	<-->	Resource Adequacy	.204	.088	2.318	.020	Accept
Resource Adequacy	<-->	Performance Evaluation	.208	.070	2.951	.003	Accept
Implementation Training	<-->	Performance Evaluation	.225	.078	2.875	.004	Accept
Implementation Training	<-->	Mgt. Commitment	.252	.064	3.945	***	Accept
Performance Evaluation	<-->	Mgt. Commitment	.186	.049	3.828	***	Accept
Performance Evaluation	<-->	Top Mgt. Support	.219	.079	2.785	.005	Accept
Resource Adequacy	<-->	Top Mgt. Support	.214	.089	2.396	.017	Accept
Mgt. Commitment	<-->	Top Mgt. Support	.189	.060	3.157	.002	Accept
Implementation Training	<-->	Top Mgt. Support	.312	.104	3.001	.003	Accept
Resource Adequacy	<-->	Mgt. Commitment	.173	.053	3.252	.001	Accept

Note: *** denotes parameter is significant at 1% level of significance.

The overall goodness of model is satisfactory as all reported goodness indicators meet the desirability criteria as reported in Table.3, as suggested by Hoe (2008); Schreiber, Stage, King, Nora and Barlow (2006). For instance, confirmatory factor analysis is used for testing the uni-dimensionality of the constructs. In AMOS, the result of IFI should be greater than 0.95, the estimated results show that the CFI value is 1 as shown in Table 3. A Normalized Fit Index (NFI) having a value greater than 0.90 or above demonstrates the strong convergent validity (Tabachnick and Fidell, 1996). The estimated model shows NFI having 1.00, in this case, it shows that the model is fit and acceptable. The goodness of fit index (GFI) value has been taken from

the data analysis results is near to 0.80. So, it has significant results showing that the model is unidirectional. RMR value has 0.069 and its ideal value is less than .10 so it has been proved that the model is goodness at the fitness level.

Another model evaluating measure is a Comparative Fit Index (CFI) the fit of a specific target model to the fit of an independent model. The independent model is a model that has the variables to be assumed to be uncorrelated. In this way, fitness means the difference between the observed and predicted covariance matrices, the same being represented by the chi-square index (a good indicator of fit). In simple words, CFI represents the degree to which the model of interest is better than the independence model. CFI should have a value greater than 0.95 so in the AMOS. Estimated results show the (CFI) value is greater than 0.95 (i.e. =1). According to the results derived from AMOS, all the scales have a value equal to 1.00 it shows that all the scales show strong convergent validity.

Table 3
The goodness of Fit Indices for the Measurement Model.

Indicators	**Estimated Value**	**Desired Value***
Normalized Fit Indicator	0.80	0.95
Comparative Fit Index	1.0	0.95
The goodness of Fit Index	1.0	0.95
Root Mean square Residual	0.069	smaller
Chi-square/df	4.298	5.000
Incremental Fit Index.	1.0	0.95

Note: *Hoe (2008); Schreiber et al. (2006) recommended that the values of IFI, NFI, GFI and CFI should be near or greater than0.95 and the value of RMR should be below 0.10 for a model to be a good fit with the data.

6. Conclusion and Recommendations

The study is survey-based research; aims to examine the Activity Based Costing system adoption, implementation, and success in the case of Pakistani companies listed at the Karachi Stock Exchange. Estimated results confirm that the companies in Pakistan have implemented the Activity Based Costing System successfully and applying various modules of the ABC System according to their needs. Further, it has been confirmed that the internal organizational

environmental factors have a significant impact on the success of ABC implementation.

Empirical result indicates that variables such as Management Commitment, Top management Support, Implementation training, and Resource adequacy have a significant direct positive impact; however, performance evaluation harms ABC successful implementation. In the same way, ABC's successful implementation has a positive impact on accurate product costing and Better overhead cost allocation. However, it fails to exert a significant impact on cost reduction, better budgeting, and improved customer profit analysis. It seems that the ABC system is very new to Pakistani firms, and companies are gradually implementing different modules of ABC. A company that has not yet implemented fully a specific module of ABC, the benefit supposed to be achieved from that module cannot be realized optimally. Overall the results are in line with the existing literature such as Inns and Mitchell (1995); McGowan and Klammer (1997); Foster and Swenson (1997); Bjornenak (1997) and Friedman and Lyne (1999).

It is expected that keeping in view the key success factors identified, management will be able to get implemented the ABC system and achieve the associated benefits. The ABC implementation will help in accurate correct costing and pricing of the products and managers and society will help in the management decision-making process, and overall improvement of the organizational performance The companies which have not implemented the ABC may also gain motivation to implement ABC when they will see benefits received from the implementation of the Activity-Based Costing Approach.

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