AN EXPLORATORY STUDY ON FACTORS AFFECTING ACTIVITY BASED COSTING (ABC) SYSTEM ADOPTION IN VIETNAMESE ENTERPRISES

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Abstract:

Cost management always plays very importance role in each enterprise, especially in the current economic and financial crisis. Activity-Based Costing (ABC) is a method of cost analysis, was introduced by Robin S. Cooper and Robert Kaplan, professors of Harvard Business School in 1988, and was described by Johson(1990) as one of the most important management accounting and innovation in the 20th century and has been applied in many countries. The objectives of this study are (1) investigate the current state of ABC adoption rates among Vietnamese enterprises, (2) find out factors influencing on ABC adoption in Vietnamese enterprises, (3) identify barriers for ABC adopting companies during the implementation process, (4) propose suggestions to help enterprises know about ABC and motivate them to adopt ABC system. Questionnaires were sent to Vietnam's Top 500 businesses announced in 2012 by e-mail and mail with readily contacts on the internet. 323 questionnaires were sent successfully to companies and 73 responses (22.6%) are returned from 15/03/2013 to 05/04/2013. Quantitative method and Chi Square will be applied to analyze the questionnaire survey result to reach those objectives. The outcome of this study is believed to provide valuable information about actual state of ABC in Vietnam and solutions for dissemination of ABC in future.

Keywords: *Activity Based Costing (ABC), Traditional Cost System (TCS), cost management, activity center.*

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1. Introduction

Determining cost of products is the most known purpose of cost information system (Atkinson et al, 2011). The profound understanding of product related costs will help managers identify the consumption of resources for each type of product and support for pricing decisions. Cost of products will consist of three main elements: direct labor cost, direct material cost and overhead costs.

Direct labor cost and direct material cost are easily traced to products, depending on the consumption of labor and materials of each product. However, assigning overhead costs to products is difficult because there are many complex supportive activities. These activities are not always easily recognized and there is no common cost driver that can be fully allocated overhead costs of all different supportive activities to different kind of products.

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Under traditional costing system (TCS), overhead costs are assigned to products with the allocation bases related to the volume of products such as, direct labor hours, material cost or machine hours, however, it neglects some other cost drivers which are independent with volume such as set up times, ordering times…Therefore, the overhead cost allocation with cost drivers unrelated to volume but using bases of volume will lead to the inaccuracy in costing products.

When cost systems were developed in the 1800s, direct labor was the highest percentage in total cost and direct labor obvious choice as an allocation base for overhead cost. On an economy wide basis, direct labor and overhead costs have been moving in opposite directions for a long time. As a percentage of total cost, direct labors have been declining, whereas overhead has been increasing. Many tasks that used to be done by hand are now done with largely automated equipment a component of overhead. Furthermore, product diversity has increased. Finally, computers, bar code readers, and other technology have dramatically reduced the costs of collecting and manipulating data- making more complex (and accurate) costing systems such as activity-based costing much less expensive to build and maintain.

Activity Based Costing (ABC) method was invented by Robin S. Cooper and Robert Kaplan (1988) to overcome the drawbacks of traditional method because of the following reasons:

Firstly, the cost information of products is reflected more accurately: obviously cost of products consists of not only costs occurring in the production process but also indirect costs that occurring from supportive activities such as selling and marketing expenses, distribution expenses. When the weight of non-production overhead cost is more significant, the omission will lead to the notion about return on equity of products.

Secondly, the ABC system supports for decision- making of managers. According to ABC methodology, a system of cost drivers is built based on the cause and effect relationship between the cost arising for each activity and the participation level of each activity in the production and business process of products instead of a predetermined cost driver(direct labor hour; machine hour…) of traditional methodology. Therefore, these cost drivers reflects more accurately the actual resource consumption level of products.

Thirdly, the management effectiveness in the overall organization is improved. The defining of all activities in organization and the contribution level of these activities to each product help managers define high adding- value activities, low adding- value activities, non- adding activities and constraints. Therefore, to improve the effectiveness and efficiency of operations, managers need reject non- adding value activities and constraints and reorganize low- adding value activities. In addition, for high-adding value activities, through processes and causes of cost arising, managers can cut costs while the efficiency remains the same at least.

Finally, the ABC system supports for building evaluation and award system of employees, *leading to the efficiency improvement of employees and improvement of business results*. To specify, ABC shows the clear relationship among three factors: cost, activity level and contribution level to products, the understanding about this relationship will change the management mind from cutting cost to improving value of firms. This means that rising cost is accepted if the incremental benefits are higher than incremental cost. Under TCS, this relationship

is vague and firms built the award system based on the cutting cost. Consequently, employees only focus on saving cost instead of creating value to firms. The adoption of ABC will help firms in building a reward system based on the added value level instead of saving cost, leading to the improvement in operation results of firms.

Due to these evolutions, the ABC methodology has been well known and applied commonly in many nations since 1990s. For example, the ABC adoption rate was approximately 30% in Canada (Gosselin 1993), 12% in Australia (Corrigan, 1996), 14% in Finland (Virtanen, 1996), 23% in UK (Drury, 2001), 54% in USA (Kiani & Sangeladji, 2003), 33.33% in France (Rahmouni, 2008), 35% in Thailand (Chongruksut et al, 2002)…

Thanks to the provision of more accurate cost information, ABC has been exploited successfully by many firms from different business sectors in the world. However, in Vietnam, ABC has not been applied much in enterprises and no empirical finding or statistic figure concerning the ABC adoption in Vietnam or hindrances for appliance has been provided. Some papers and researches only review some theory of ABC and then apply it in a specific firm or industry. Those are the reasons why this research should be urgent conducted and this study may be considered as the first general examination about ABC utilization in Vietnam. Another contribution is that factors that have impacts on the ABC adoption are withdrawn in this study and some suggestions will be given for the diffusion of ABC costing methodology in Vietnamese enterprises

2. Research objectives

The purposes of the research are investigate the real situation of adopting ABC in Vietnamese enterprises and seeking factors impacting the ABC adoption as well as solutions for ABC diffusion for Vietnamese enterprises in future. Therefore, the objectives are outlined as follows: •

• Investigate the percentage of using ABC among Vietnamese enterprises

• Finding factors that influence ABC adoption of Vietnamese enterprises

• Suggesting solutions for ABC popularization in future

To solve the main problems of this study, three big questions should be answered:

• Which factors affect ABC adoption in Vietnamese enterprises?

• How do Vietnamese enterprise's awareness about ABC system?

• Which ways can help enterprises know about ABC and motivate them to adopt ABC system?

3. Research hypothesis

Since the invention of ABC, many researches have been done in many nations (but Vietnam) regarding ABC such as ABC adoption rate, reasons for ABC adoption, factors influencing ABC utilization, benefits of ABC and critical factors affecting ABC success.

The first research was about ABC implementation, done by Innes & Mitchell (1995) on top 1000 UK's largest companies, listed in the Times 1000 in 1994. The response rate was 35.2%. Among these respondents, 21% adopted ABC, 29.6% were considering the ABC adoption, 13.3% rejected ABC after consideration and 36.1% had no consideration of ABC to date. Regarding the ABC appliances, the results indicated that the success of ABC appliance demonstrated in areas of cost reduction, budgeting, pricing, cost modeling, performance

measurement and improvement, new products/ service design, stock valuation and customer profitability. Relating to the factors of ABC success, top management support is mentioned the most. For non-adopter' side, the perception of administrative and technical complexity are main barriers while some cases state that low product diversification and overhead costs lead to no need for ABC adoption. After that, many other researchers also investigated other factors that effect to ABC adoption such as industry sector, firm size, nationality, type of competition, product diversity, cost structure, culture… In this research, four most common factors are chosen to set up the model as following:

3.1. Industry sector

Innes and Mitchell (1995) examined the relationship of industry sector to ABC adoption. The findings show that 36 companies (48.6%) of ABC users were manufacturing companies. 20 companies (27%) of adopters were financial and 24.3% comprised service companies and there is a relationship between industry sector and ABC adoption.

Nine year later, in Irish, Pierce and Brown (2004) found higher levels of ABC among manufacturing companies than in the other sector. The result shown that 11.8% of adopters were financial companies, 23,5% and 64,7% adopters were service and manufacturing companies respectively.

Based on the literature review, the hypothesis was formulated as the following

H1: Industry sector has significant effect on ABC adoption

3.2. Firm size

According to the argument of Krumweide (1998), larger firms are likely to have more resources, contacts and communication channels and they are able to consider ABC system. However, this is unclear in the research of Bjonernak (1997). Brown (2004) suggested that larger firms have more money and economies of scales for considering and implementing ABC. He also found that number of employees also has positive relation with considering and ABC- adopting companies. Similarly, Krumwiede (1998) and Booth and Giaccobe (1997) found annual sales revenue had a positive impact on the considering and adopted operating units. Given the considerable effects of company size in previous empirical findings, this study assumes that company size has an influence on the ABC appliance. Firm size can be measured by some factors such as: turnover, the number of employees, total assets value. In this paper, in order to measure company size, turnover is applied and the hypothesis was formulated as the following

H_2**: Firm size has significant effect on ABC adoption**

3.3. Product diversity

Investigate the relation between product diversity and ABC adoption has been conducted by many studies. Authors of this method, Kaplan (1998) argued that traditional costing method becomes dysfunctional when product diversity increases while Cooper (1998) states that the increasing product diversity introduces the risk of inaccuracy in overhead cost assignment to product same. Brown et al (2004) also examined the relationship between product diversity ans ABC adoption, the result shown that the product diversity display significant and positive association (p< 0.05 level) with the implementation of ABC system. Another study, Drury (2001) stated that product diversity determines the complexity of production process, leading to more activities being required to produce them. As a result, to measure the resource consumption of different products, a more complex costing system is

needed. Basing on the above discussions, the following hypothesis will be tested:

H₃: Product diversity has significant effect on ABC adoption

3.4. Cost structure

The relationship between cost structure and ABC implementation has been stated in many researches. When overhead costs are incurred to produce products, there is a greater demand for using an accurate costing method to capture these costs to products (Bjornenak, 19977). Similarly, Booth and Giacobbe (1998) found that operating units with higher overhead costs to value added costs show an interest in adopting ABC. The two authors of ABC method also recommended firms to use ABC when overhead costs account a significant proportion in total cost. Based on the literature review, the hypothesis was formulated as the following**:**

H₄: Cost structure has significant effect on ABC adoption

3.5. Technical issues

Tiessen and Waterhouse (1983) argued that there was a significant relationship between technical system and ABC adoption. Organizational characteristics is only the first barriers to determine the suitability of ABC for firms, however, difficulties in implementation process made many companies reject ABC before recognizing its benefits. Identifying activities, grouping activities, identifying cost objects and assigning cost of activities to cost objects all can cause hindrance for firms (Morrow and Connelly, 1991), Cooper (1998). In addition, information technology, collecting data...also affect ABC adaption. Hence, the following hypothesis was constructed:

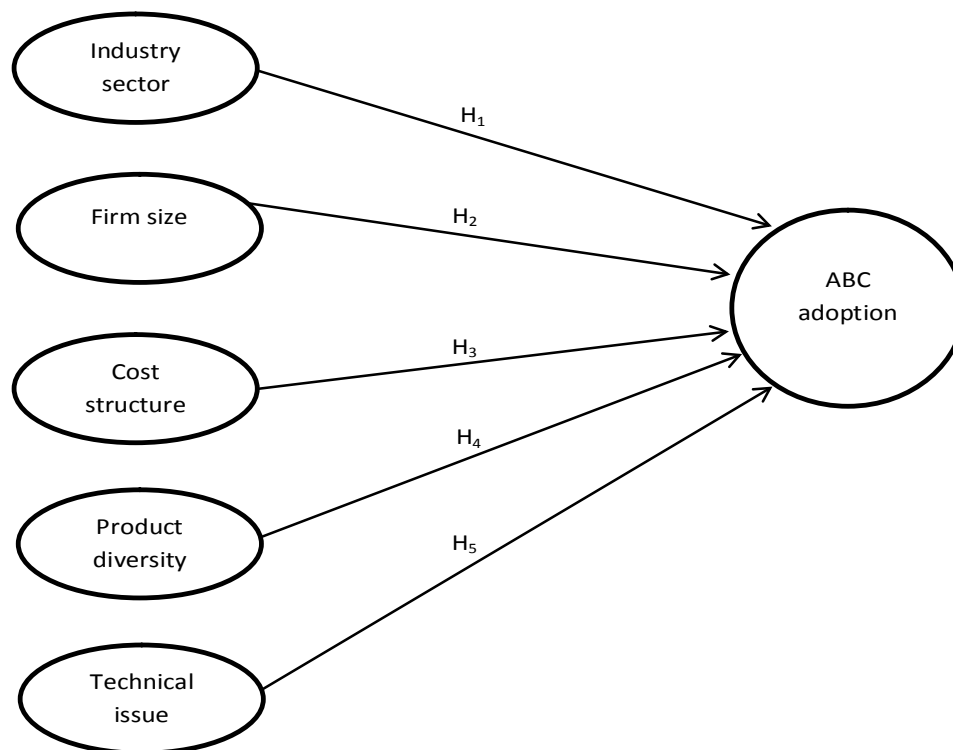***H_{5:} Technical issues has significant effect on ABC adoption***

Figure 1: Research Framework and Hypotheses

Table 1: Hypotheses and supporting studies

Items	The content of Hypotheses	Empirical support
H1	Industry sector has significant effect on ABC adoption	Drury (2004), Innes and Mitchell (1995), Clarke et al (1999), Pierce and Brown (2004)
H2	Firm size has significant effect on ABC adoption	Innes and Mitchell (1995), Groot (1999), Booth (1997)
H3	Cost structure has significant effect on ABC adoption	Pierce and Brown (2004), Brooth (1997), Cinquini et al (1999)
H4	Product diversity has significant effect on ABC adoption.	Pierce and Brown (2004), Groot (1999), Clarke et al (1999)
H5	Technical issue has significant effect on ABC adoption.	Booth (1997), Cinquini et al (1999), Clarke et al (1999)

The research framework and hypothesis was showed in figure 1 and table 1 as follow. **While:**

Y: the dependent variable, Y=1 if firm applies ABC and Y=0 if firm does not apply ABC

e: random error

INDUSTRY SECTOR: equals to 1 if firms do business in manufacturing industry and 0 if they do business in other sectors.

TURNOVER (Present for Firm Size): There are 3 levels of turnover in the questionnaire. These levels consist of VND1000-5000 billion, VND5000-10000 billion and VND10000-20000 billion with coded values of 1, 2 and 3, respectively.

PRODUCT DIVERSITY: product diversity is divided into 6 levels: 1, 2-10, 11-50, 51-100, 101-1000 and above 1000. The coded values for these levels are in order with 1, 2,3,4,5 and 6.

COST STRUCTURE: cost structure proportions are divided into 3 levels. 5-25% corresponds to the coded value of 1, 25-45% corresponds to the coded value of 2 and 45-65% corresponds to the coded value of 3.

TECHNICAL ISSUE: the difficulty related to technical issue will be coded as follows. The variable TECHNICAL ISSUE receives the coded value of 1 if firms that had more than ½ barriers related to technical issues and 0 for the rest.

4. Research methodology and data collection

Quantitative research was the systematic scientific investigation of quantitative properties and phenomena and their relationships. The objective of quantitative research was to develop and employ mathematical models, theories and/or hypotheses pertaining to natural phenomena.

The process of measurement was central to quantitative research because it provided the fundamental connection between empirical observation and mathematical expression of quantitative relationships (Creswell, 2003)

This study is approached with quantitative methods, refers to data collected from the survey is processed, using a SPSS program, leading to descriptive and inferential statistical analysis, including frequency, mean, and chi-square, meanwhile, Chi-square test is the main appliance of this study.

According to theory, Chi-square independence test can be employed to find down the association between 2 variables in a contingency table with one variable being counted and classified in a row while the other organized in column. If the p-value from Chi-square test is smaller than 0.05, it can be concluded that there is relation between 2 variables and vice versa..

4.1. Data collection

a. Survey methodology

This study used mail questionnaire survey. It is argued that its advantages such as saving time and money, collecting a substantial amount of information within a wide scope are best choice for any surveys. In addition, mail questionnaire survey exerts less pressure on immediate answers and creates feeling of anonymity for respondents. Therefore, mail survey has been chosen for collecting data.

b. Subjects and sampling

Top 500 Vietnamese Businesses 2012 listed in Vietnam Report are subjects of this study. It is supposed that these enterprises come from different industry sectors along with different organizational characteristics would be possible to generalize the characteristics of the population elements. In addition, with responses of more than 30 units, the accuracy and reliability can be accepted.

According to the Vietnam Report, Top 500 Vietnamese Businesses are structured from different industry sectors with real estate accounting the highest percentage of 24.82%, followed by agriculture and forestry, chemicals, food and drink, banking-finance-insurance-gold and fisheries with approximately 7% and companies doing business in other sectors occupied insignificant proportions are combined in a general section called "others", with 39.82%. Therefore, except real estate industry, there is no much difference in value added contribution to Vietnamese economy among these industries.

4.2. Questionnaire design

With 21 questions in total and separated into 2 main sections, the questionnaire consists of the following contents:

• *Questions about organizational and environmental characteristics (*industry sector, firm size, product diversity, proportion of overhead costs or cost structure, technical issue) that are predicted to have impact on ABC adoption.

• *Problems related to ABC* (for example, ABC adoption level, difficulties of ABC adoption and implementation, application areas of ABC, knowledge of ABC, initiators of ABc, reasons for rejection and non-consideration of ABC until now, the satisfactions with the present overhead cost allocation, the expectation of ABC in future).

4.3. Reliability of data

The questionnaires were analyzed to calculate Cronbach's alpha in order to

measure the reliability of the questionnaire. A value of 0.7 calculated for Cronbach's alpha is regularly regarded by many professionals as the high reliable measurement (Wen 2007). The higher Cronbach's alpha calculated, the higher reliable set of items measured.

Using SPSS 16.0 for calculating Cronbach's alpha of the whole items in this research was 0.903 (see table 2). This number indicated that the items form a scale that has very good internal consistency or they were regarded as 'high" reliability or that items were measuring the same underlying construct. The detail Cronbach's Alpha of each items also are presented in the table 2

Principle components	No of Items	Cronbach's Alpha
1. Industry sector	5	.756
2. Company size	5	.883
3. Cost structure	4	.849
4. Product diversity	4	.908
5. Technical issue	3	*.932*
Overall	**21**	**.903**

Table 3: ABC implementation (success)

4.4. Data collection

Questionnaires were sent to Vietnam's Top 500 businesses announced in 2012 by e-mail and mail with readily contacts on the Internet. 323 questionnaires were sent successfully to companies and 73 responses (22.6%) are returned from 15/03/2013 to 05/04/2013. Among these responses, 12 responses (3.7%) have problems:

• 3 questionnaires(0.9%)are completely unanswered with reasons:

- We cannot reveal anything relating to accounting due to our company policy

- Your response takes too much time for completion

- We are too busy to answer the questionnaire survey.

• There are 2 questionnaires (0.6%) have some missing sections relating to turnover, cost structure and product diversity and 3 questionnaires only filled with some sentences.

	1	2	3	4	5	Mean	Mode
Product/ service pricing	0	0	0	5	2	4.29	4. N=5
Budgeting	0	0	2	5	0	3.71	4. N=5
Cost reduction	0	0	1	3	3	4.29	4&5. N=3
Output decisions	1	3	3	0	0	2.29	2&3. N=3
Forecasting	1	4	2	0	0	2.14	2. N=4
Process/ operating management	0	4	3	0	0	2.43	2. N=4
Strategic planning	0	2	5	0	0	2.71	3. N=5
New product/ service design	2	2	3	0	0	2.14	3. N=3
Value added analysis	2	5	0	0	0	1.71	2. N=5
Outsourcing decisions	2	4	1	0	0	1.86	2. N=4
Capital investment decisions	4	3	0	0	0	1.43	1. N=4
Quality initiative	4	3	0	0	0	1.43	1. N=4
Reward system	6	1	0	0	0	1.1	1. N=6

• 4 questionnaires (1.2%) have mistaken in filling, for example 5 respondents said that, their company did not adopt ABC, however, they fill in sentences 12, 13 and 14.

5. DATA analysis

5.1. Overview

Among 61 respondent companies, there are 7 companies are adopting ABC system. Companies were asked to give their opinion on the success of ABC implementation related to the specified areas of application, on a five-point scale ranging from 1(not important level) to 5(critically important level). Product/ service pricing and cost reduction were the areas of application with the highest mean score (4.29), followed by budgeting (3.71). Other areas of application in the table are not highly scored.

5.2. Hypothesis testings

• **Industry sector**

Among 61 respondent companies, there are 7 companies are adopting ABC system. 5 of them are manufacturing companies out of 27 while 2 of them are companies from different sectors out of 34. The table below will show the relation between the industry sector and ABC adoption.

Table 4: Industry sector and ABC adoption

0	INDUSTRY SECTOR		Total
	1		
ABC	0	32	22	54
	1	2	5	7
Total		34	27	61

Using SPSS software and chi-square test, we recognized that industry sector does not affect ABC adoption (chi-square value= 2.356 and p-value= 0.124> 0.05).

Therefore, the hypothesis H_1 -*There is a relation between industry sector and ABC adoption* is rejected

Table 5: Chi-square test (ABC adoption and industry sector)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	2.365	1	0.
N of valid cases	61		

• **Company size**

Company size is evaluated throughout turnover.

There are 3 coded levels of turnover in the questionnaire. There are 3 out of 48 companies of level 1 adopt ABC while 2 out of 6 companies of level 3 adopt ABC and 2 out of 7 companies of level 2 accept ABC.

Table 8: ABC and turnover

		TURNOVER			Total
		1	2	3	
ABC	0	45	5	4	54
	1	3	2	2	7
Total		48	7	6	61

Examining the relation between ABC adoption and turnover by testing chi-square on SPSS software, we recognize that turnover affects ABC adoption (chi-square value = 6.126 and p= 0. 047<0.05). *Therefore, the hypothesis H_2 is accepted*.

Table 9: Chi-square test (ABC adoption and turnover)

	Value	Df	Asymp. Sig. 2-sided)
Pearson Chi-square	6.126	4	0.047
N of valid cases	61		

• **Product diversity**

The product diversity is divided into 6 ranges: 1, 2-10, 11-50, 51-100, 101-1000 and

above 1000. However, no firm has 1 and more than 1000 kinds of product. Therefore, only ranges: 2-10, 11-50, 51-100 and 101-1000 will be coded by 1, 2, 3 and 4, respectively.

There are 7 firms adopting ABC, meanwhile, 3 firms have a number of products between11-50 out of 29 and 2 firms have number of products between 51 and 100 out of 8. There is no company having competitive levels of 1 and 5 adopts ABC methodology.

Table 10: ABC and product diversity

1		PRODUCT DIVERSITY				Total
		2	3	4	5	
ABC	0	19	26	6	3	5
	1	0	3	2	2	7
Total		19	29	8	5	6

Using SPSS model to test chi-square, we have p= 0.047<0.05. This shows that product diversity affects ABC adoption or the *hypothesis H_3 is accepted.*

Table 11: Chi-square test (ABC adoption and product diversity)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	7.945	3	0.04
N of valid cases	61		

• **Cost structure**

Overhead cost is divided into 3 ranges: 5-25%, 25-45% and 45-65%. These ranges will be coded with 1, 2 and 3 respectively. Among 7 ABC adopting companies, 5 firms out of 8 of 3rd range accept ABC system, 2 companies out of 12 of 2nd level adopt ABC whereas there is no firm of the 1st range adopt ABC system.

Table: 12 ABC and cost structure

1		COST STRUCTURE			Total
		2	3		
ABC	0	41	10	3	54
	1	0	2	5	7
Total		41	12	8	61

Testing the relation between ABC adoption and cost structure by SPSS model, small p-value (0.000<0.005) is received. It shows the overhead cost proportion affects ABC adoption. *Therefore, the hypothesis H_6 (there is a relation between ABC adoption and cost structure) is accepted.*

Table 13 Chi-square test (ABC adoption and cost structure)

	Value	df	Asymp. Sig.(2-sided)
Pearson Chi-square	26.136	4	0.0
N of valid cases	61		

• **Technical issues**

Among 61 respondents firms, there are 36 companies had barriers related to technical issues while 25 firms did not have technical difficulties. 7 out of these 25 firms have adopted ABC methodology

Table 14: ABC and technical issues

		TECHNICAL ISSUES		Total
		0	1	
ABC	0	18	36	54
	1	7	0	7
Total		25	36	61

Testing chi-square to recognize the relation between ABC adoption and technical issues, the result shows that p=0.011<0.05. *This means that technical issues affect ABC adoption or hypothesis H_5 is accepted.*

Table 15 Chi-square test (ABC adoption and technical issues)

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-square	6.541	1	0.011
N of valid cases	61		

6. Discussion

Base on the result of the survey, some importance clues are presented as following:

ABC has been known and applied in Vietnamese enterprises

According to the data collected, more than 10% of respondent companies adopt ABC system (this consists of companies adopting ABC system for overall organization and for limited areas), some companies (3) are considering the ABC adoption) and a majority of respondents have knowledge (general, good and extensive levels) of ABC system. These prove that ABC system has been known applied and had potential adoption in future.

Adopting firms have achieved benefits from ABC system

Pricing, cost reduction and budgeting are ranked with the highest scores among listed benefits of ABC system.

The identification of cost drivers for each activity can prevent from distortion of cost information compared to traditional costing system. Besides direct labor and material costs, overhead cost will be allocated directly to products. Therefore, cost information will be reflected more accurately and adequately for each kind of product, serving for pricing and budgeting related to products. This is evaluated to create competitive position for firms in the marketplace.

As mentioned before, the profound acknowledgement of cost structure can support managers in identifying high added value activities, low added activities, non-added value activities and constraints. Thereof, managers reduce cost and improve the efficiency and effectiveness by redesigning processes and products that consume less activity resource, cutting non-added value activities and constraints, reorganizing low added activities and minimizing cost of high added value activities.

Low ABC adoption rate

Among 61 respondents, only 7 Vietnamese firms adopt ABC system (11.47%). Meanwhile, 1 firm adopts ABC for overall organization and 6 firms apply in selected areas. More than 50% of respondents have never considered ABC system.

Technical issues are main barriers for ABC adoption

For ABC adopting, considering and rejecting companies, technical issues are still barriers for adoption and implementation.

To specify, for the adopting group, difficulty in each stage of assigning overhead cost is evaluated with high rankings (designing system (4), identifying activities (3.43), assigning resources to activities (3.29), identifying cost driver (4.43)). For considering group, 100% respondents said that they have difficulty in identifying activities and cost driver and collecting data. For rejecting group, difficulties in identifying activities, cost drivers and collecting data are much mentioned in the questionnaire with 33.33%, 72.22% and 38.89%, respectively. In addition, the lack of technology is also a barrier related to technical and technology issue.

Product diversification

Among 61 respondents companies, there is no firm having 1 and above product, only 19

companies having between 2 and 10 types of products, a majority of firms (37) have a number of products of between 11 to 100 products and 5 firms produce a lot of products(between 101-1000). These figures show the high diversity level of product in Vietnamese market at present. The diversity level still continues when demand of Vietnamese consumers about products/ services of new patterns, better quality, new functions, good service quality and competitive price never end.

7. Recomendation

Recommendations for Vietnamese state

ABC is an essential tool in managerial accounting system used for cost management and value-adding for firms. As a result, the role of Vietnamese state in ABC diffusion should be demonstrated indirectly through raising awareness about managerial accounting system in any firms. To do this task, 3 recommendations are ready:

The first important point is that Vietnamese state should encourage establishing a professional and experienced consulting organizations that guide firms in establishing an effective managerial accounting system.

Another solution is that education of managerial accounting should be reoriented at universities and colleges. A majority of economic colleges or universities in Vietnam only teach managerial accounting subject for students of accounting major whereas they neglect other majors for example, business management which supposed to create many future enterprises, initiators of ABC adoption. Hence, the extension of managerial accounting subjects to other majors should be done.

In addition, Vietnamese state should have policy supporting Vietnamese enterprises in applying managerial accounting. This stems from the facts that appliance of managerial accounting requires more resources than financial accounting system. High investments in training labor, purchasing technology equipment and software make many firms feel hesitated in building their own system. Thus, to strengthen the competitive capability of Vietnamese enterprises in a challenge business environment, government should subsidize firms in applying information technology for their managerial accounting system

Recommerdations for Vietnamese enterprises aspect

Unlike financial accounting which is obligatory in each firm, managerial accounting system is designed in accordance with the demand of firm itself, serving for internal control purposes and cost information provision. Therefore, the ABC diffusion is mostly dependent on internal decisions rather than little intervention from government. For enterprises' side, these below solutions will be suggested to adopt ABC.

At first, the right awareness about the importance of managerial accounting system is essential. In a cut-throat competition world, enterprises need multidirectional information for financial decisions supposed to determine their existence and development, which is actually not limited in the scope of financial accounting. Therefore, it is important for firms in evaluating the role of managerial accounting in their firms, contents and methods of managerial accounting in order to organize and implement managerial accounting in their firms.

Secondly, Vietnamese firms should establish innovation culture for their own company. Innovation supposed to create positive impact on accepting new changes in the any organization from senior managers to employees. ABC methodology, despite its

much complexity in all stages compared to TCS, is more easily supported when persons of that organization are familiar with innovations because changes help them strengthen their competitive capability in the market.

Last but not least, investments in developing human resources seem to be obliged to the success of firms. Besides specialized knowledge, employees should be educated about the awareness about mission and objectives of the organizations they are working for in order to create cooperation towards the common goals. ABC system, a stark example, demanded both specialized knowledge and high cooperation among different departments.

8. Limitations

Although the study has been well prepared in all processes from seeking information relating to ABC, drafting survey, sending survey to firms to collect data for analyzing, some unpreventable problems still exists:

• The first weakness of the study concerns with the factors in the model. They are representative variables, filtered and synthesized from previous studies or research. Therefore, some minor factors can be omitted; further research should conduct a model with more than five factors.

• Secondly, the ABC adoption rate is quite low in Vietnamese firms. Further study should increasing the power of the test by increasing sample size can help to minimize the likelihood of this weakness. In-depth interviews and participant observation could be used in the further research to investigate more fully the current practice among Vietnamese companies that have implemented ABC system.

Finally, the sample of the study is only Top 500 Vietnamese businesses; this may not be representative sample of population.

Despite some limitations, this study is believed to provide valuable information about actual state of ABC in Vietnam and solutions for dissemination of ABC in future. The outcome of this research can be applied in other managerial accounting field to asset the benefit of new method, the research proposal design, methodology and result may encourage academics to undertake similar studies or expand research into relate areas.❑

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