

The Demand for Cost Management Accounting Information: The Case of Vietnamese Construction Firms

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Abstract

This study is conducted for assessing the demand for information in cost management accounting of managers in Vietnamese construction firms. Data were collected from 161 construction firms in Vietnam. Basing on quantitative research method, the differences in demand for cost information between domestic and foreign construction contract management were investigated. The result indicates that the management of construction contracts that have foreign factors requires cost information with higher level and quality. In particular, managers have a high demand for estimated and analyzed cost information in the investment decision-making process. On the other hand, the demand for cost information depends on the firm size and management level. Through this finding, some recommendations are given for improving the expense management accounting with a view to meeting the information demand of managers in the context of integration.

Keywords: Management accounting, Information, Construction, Vietnam

1. Introduction

Globalization, international economic integration and trade liberalization have been outstanding trends of economy in the modern world. The process of deepening, broadening and effective integration of Vietnam with the world economy has brought great achievements for Vietnamese firms in general as well as construction firms in particular. The social needs of infrastructure construction for the country's development such as transportation, industrial zones, warehouses, and logistics and others grow significantly. There has been an increase in the demand for construction, but the increase in the number of construction firms, especially foreign firms is relatively rapid, so the competition in the field of construction becomes more and more intensive. Competitive advantages will belong to any firm that knows how to seize the opportunity to access the construction contracts of foreign investors. In this context, cost management accounting information plays a very important role, such as (i) a tool for executives to perform managing, controlling and decision-making for current operations of businesses and to establish scientific bases for future activities; (ii) a foundation to assess the efficiency of business activities of firms, helping them to use properly and efficiently the existing resources and exploit their full potential in order to achieve the highest profit.

It is said that cost accounting information is one of the most important weapons helping enterprises to create competitive advantages in the integration period. As the competitive environment is changing very quickly, Vietnamese construction firms face more and more challenging. In order to operate the business in this condition successfully, the demand for being provided with cost management accounting information is increasing in terms of quality and quantity as well. Therefore, in order to perform its roles effectively, cost management accounting should have an understanding of the cost information demand of business managers in each period. Since then, management accounting needs to make changes and improvements in methods and techniques to fully meet the cost requirement of business executives.

2. Literature Review

Information demand is viewed as the amount of information that needs to be provided internally or externally for meeting management requirements of managers at all levels (Eierle & Schultze, 2013). Information in a firm is diverse and plentiful, however, the information need of the manager depends on the different management circumstances (Toth, 2012). Therefore, to ensure that the information is provided in an effective manner, it is necessary to know the needs of management in that case. In a competitive environment, businesses need to be well control over the use of business resources. In terms of business efficiency, expense is an important factor in determining business performance as well as business survival and development (Teru and Hla, 2015). Accrued cost is associated with management decisions. It is also a measure of effectiveness. Therefore, cost information is always an important basis for management functions.

There have been many domestic and foreign studies related to the demand for information in expense management accounting in firms in general and in construction field in particular. Some oversea literature such as Nishimura (2006), which demonstrated that if firms operate in a market economy with increasing fluctuation and competition, managers would have to face with the decision making in the process of running the business

operations. Therefore, managers need to use cost information for making decisions scientifically and effectively in maximizing profits and reducing costs, as represented by the application of several techniques such as cost-volume-profit relationship analysis (theory of decision making and mathematical equations); using linear discriminant graphs in the production of many different commodities.

Gerdin's study (2005) identified the factors that influenced the organization of the management accounting system in the enterprise, including internal and external factors. In order to analyze the internal factors affecting the selection of the management accounting model, 126 firms were surveyed in different business lines in the world and confirmed the two internal factors affecting the design of management accounting are, namely, (i) organizational structure (*coordination and close control*); and (ii) Interdependencies between departments within an organization (*linked inflows of specialized information that create mutual control*) through the level of detail and frequency of reports. Based on the development of theoretical models combined with the results of the enterprise survey, Gerdin proposed that each management accounting systems should be combined with a different organizational structure to meet the needs of business managers.

Hopwood (2009) pointed out that management accounting research needed to increase the level of information flow between the business owner and parts of the business, including financial and nonfinancial information. Therefore, the need for information in management accounting for cost control and decision making has been of greater interest to business owners during this period. According to Stede (2011), management accounting information served internal business management, where management accounting reports were seen as sources of information for managers to build systematically and make decisions. Therefore, management accounting information must be developed on the basis of information needs of the manager in the enterprise. Thus, in the past there have been quite a number of studies related to the need for cost accounting accounting information. These studies show that the more complex the business environment, the higher the need for cost information.

Relating to local literature in Vietnamese context such as research of Le (2014). In this study, Thanh Hoa firms were somewhat aware of the role of information in management accounting in cost control and decision-making. Managers interested in the level of cost management accounting staffs through the professional training, accounting staffing as well as the relationship of accountants with other departments in the sample firms. The information provided by the cost management accounting is of interest to the managers such as cost classification, cost estimation, cost aggregation, cost allocation for cost determination, cost analysis and cost management accounting reports.

Le (2015) assessed the necessity of cost information to perform the functions of the managers. According to Le (2015), the most concerned information is about the break even point, the selling price of the product (*estimated to be over 4*), the cost difference in the extraction and processing stages is assessed by managers as close to 4 (*necessary level*). The managers are not interested too much in the departmental expense information, the central level is only close to 3 (*the average level*). In particular, the managers feel it is not really necessary for the information about construction norm as well as estimation in the business.

According to Dao (2015), for management decisions to be effective, managers should rely on the information provided by cost management accounting. Cost information considered necessary for managers in making on investment, product price determination, production selection and cost control in enterprises is actual price of production unit; reports on business results of each item; analytical report of cost information; cost variance; unit cost report; information on break even output; statutory static production costs and flexible cost estimate production.

According to Phan (2016), depending on the time, the objectives of the manager will be different such as maximizing profit or achieving the desired profit level, minimizing cost, maximizing market share or achieving a certain market share, improve product quality, maintain the existence of the business, grow, maximize the value of assets. Regardless of an organization's operational goals, the job of the managers is to make sure the objectives are fulfilled. In pursuit of organizational goals, the managers perform four activities of planning, organization and operation, control and decision-making. In order to carry out these activities, managers need to use the information provided by the accountant and especially the information related to the costs such as cost norms, cost estimates by products, orders, the particular cost of implementing for each product, period, item, content, cost difference information, cost, volume and profit relationship analysis.

In short, literature conducted in the context of Vietnam relating to the demand for information in cost management accounting in the past is quite diverse. These studies showed the need for information in cost management accounting. However, these researches are conducted in some fields like seafood processing, paving stone processing and manufacturing. Construction is a manufacturing industry with many specific characteristics about products and ways to organize construction, so the demand for information in cost management accounting will be different. The study by Nguyen et al (2017) looked into demand for cost information in construction firms, but the sample was small and used descriptive analysis so the findings were not persuasive and reliable.

3. Theoretical Framework and Research Model

3.1. Theoretical Framework

Different industries produce different types of products that are produced and consumed in their own way. In addition, each industry is characterized by the use of different resources, so the demand for information in cost management accounting for resource planning, cost controlling and decision-making are also different. Construction industry with specific characteristics such as products of great value, products including products, long time deployment, organized production and business by contracting mechanism and others. Responsibilities of the managers at all level in the construction business are controlling and managing all activities of the business, with the ultimate goal is to reduce costs and production price, but still ensure the quality of products as required. The relationship between demand for information about cost management accounting in performing functions of the managers is shown in Figure 1.

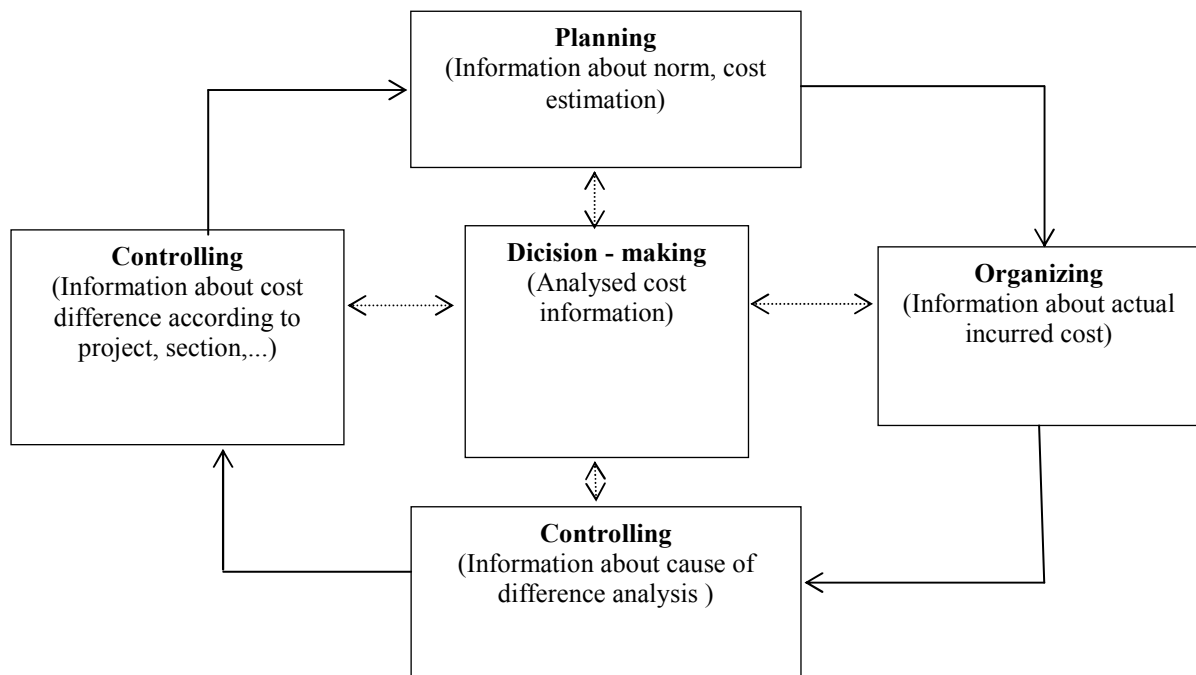


Figure 1: Relationship between cost information demand and management functions

First, the need for information for the planning function: Planning in the construction business is significant for the preparation of bids and planning to use resources for the projects that are being carried out to ensure the right purpose, the right beneficiaries and the best efficiency in using resources. To perform this function the managers of construction businesses need the expected cost information in the future of the cost management accounting. It is the cost estimate. Normally, cost estimates in construction firms include cost estimates for the preparation of bids; cost estimates for internal management such as: contracting to the enterprise, team, cost estimation for control and evaluation through the center of responsibility.

Second, the demand for information for organizing function: The cost organization is the process by which firms spends inputs carrying out production and business activities. In order to perform this function, managers must use aggregated information on actual costs incurred in many parts within and outside the firm in both qualitative and quantitative forms.

Third, the need for cost information for controlling function: The cost difference information and the cause of difference analysis are the basis for managers to exercise control function. The cost difference is defined separately for each cost center, each type of product, each stage of production or each activity, in order to help the manager to identify the cause of failure to complete the goal, to evaluate the responsibility of the managers in each center cost, evaluate control effectiveness over price of each type of product, each stage of production, even to each activity in the enterprise.

Fourth, the need for cost information for decision-making function: The management decisions in construction firms are diversified in accordance with the short, medium and long term, such as: decision on bid prices, contract prices, building measures, investment, technology renovation. These are important decisions related to the use of resources of firms, so the information about cost management accounting is always an important indicator for managers to make the optimum choice.

3.2. Research Model

Basing the necessity of information demand in construction firms, we designed 18 cost information groups that are considered as cost information that the managers of construction firms interested in. In order to assess the actual demand of the managers, we conducted a preliminary questionnaire survey with 10 research specialists in cost accounting and 20 managers working in construction business. The survey questionnaire was developed on a 5-point scale (Likert) to assess the level of demand for cost accounting accounting information provided (*from 1 is unnecessary to 5 is very necessary*). As a result, 16 cost information groups were evaluated as necessary, reaching an average value of more than or equal to 2.8 in scale of 5. These groups are used to develop a research model for assessing the demand for information about cost management accounting in Vietnamese construction firms.

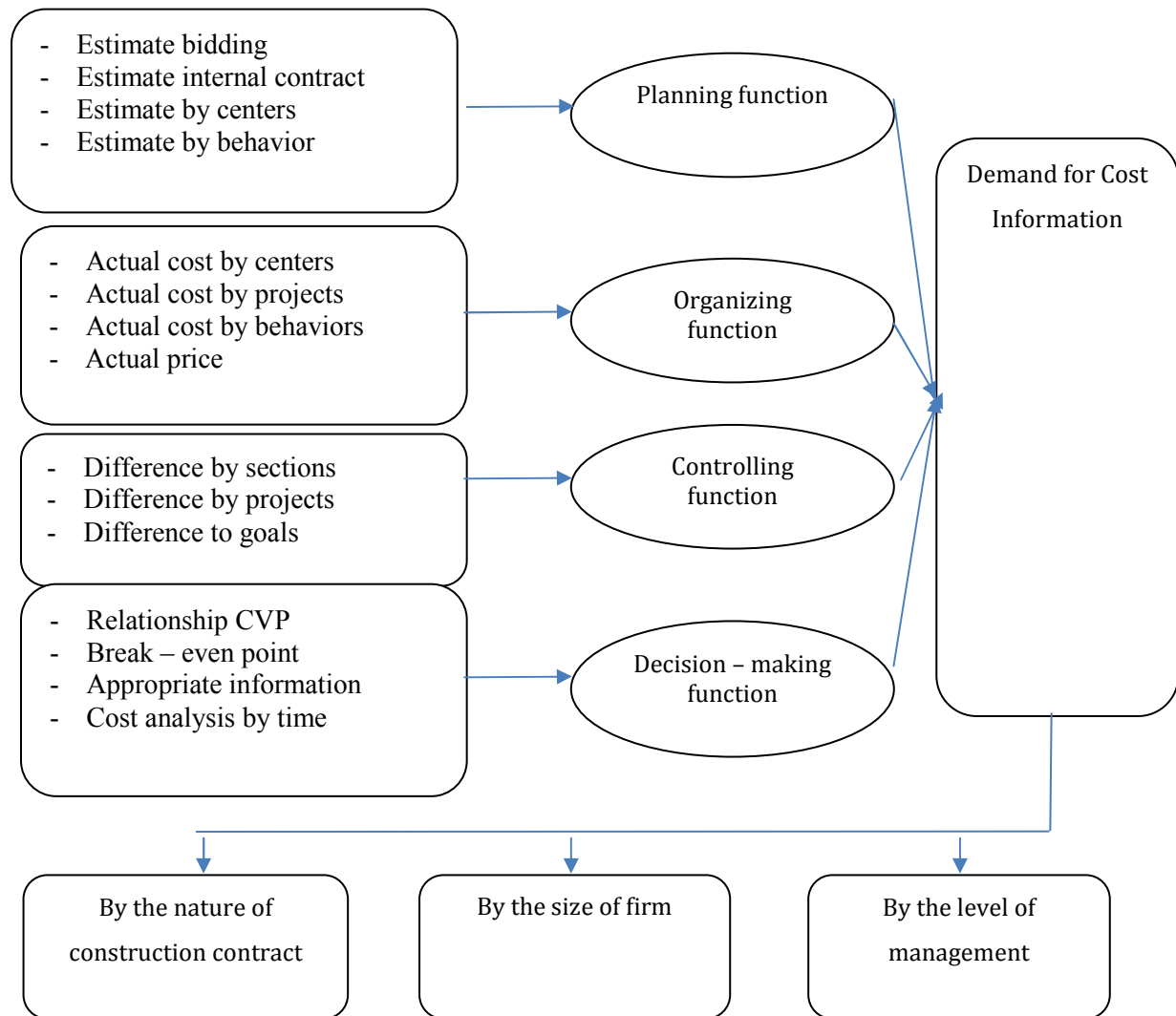


Figure 2: Model for the demand for cost information in construction firms

4. Data and Research Methodology

4.1. Data Collection

16 groups of information provided by the management accounting help corporate managers with the following functions, namely, planning, performing, controlling and decision making in the construction industry as the research model, which is employed to design the official survey questionnaire. The questionnaire was developed to collect the opinions of business managers about two aspects, namely, (i) evaluate the extent to which the demand for information in the management of domestic construction contracts is assessed (*1 is not necessary to 5 is very necessary in Likert scale*); and (ii) evaluate the level of necessity of information demand in management of foreign construction contracts (*1: not necessary to 5: very necessary*). Designing and submitting survey questions to 230 managers at all levels in the construction business nationwide with the support of the docs.google.com. The result has 212 responses. After eliminating invalid answers due to incomplete or

conflicting ones, 161 answers are used in this research. The characteristics of the sample are described in Table 1.

Table 1: Descriptive Analysis of the Sample

Criteria		Quantity	Percentage
By the quantity of performed contract having foreign factors	Less than 01 contract	-	-
	From 01 to 05 contracts	52	32.30
	More than 05 contracts	109	67.70
	Total	161	100
By the firm size	Large (Authorized capital over 100 billion Vietnam dong)	12	7.45
	Medium (Authorized capital from 20 to 100 billion Vietnam dong)	135	83.85
	Small and super small (Authorized capital less than 20 billion Vietnam dong)	14	8.70
	Total	161	100
By the level of management	Top level (Board of Directors)	55	34.16
	Middle level (Head of Department, Enterprise Managers)	81	50.31
	Low level (Team leader)	25	15.53
	Total	161	100

From the data in Table 1, majority of surveyed firms (67.7%) have employed at least five construction contracts involving foreign factors, and medium and large firms account for 91.3%. The responses are sufficiently representative for managers at all levels in the construction firm. This reveals the quality of the responses are very positive and the result of the research is reliable.

4.2. Methodology

To meet the objective of assessing the cost information demand of the managers in the construction business, and comparing the cost information demand by the nature of the construction contract, the firm size, levels of management, we use quantitative and qualitative methods with sequential surveys to conduct the research. The sequential survey is conducted in two periods, (i) the first is conducted on a sample of 30 including 10 research specialists and 20 business managers, the purpose of this period is to test the level of necessity of cost demand built upon qualitative research; (ii) the second period, we collected and analysed data based on survey results measuring the necessity of information demand by aggregating the results from questionnaire of 161 managers working at construction firms. Data were computed into the appropriate variables required for the study with the aid of the excel software then transferred to SPSS 20 for testing and analysing.

5. Results and Discussion

5.1. Scale Quality Testing

We examine the reliability of factors that measure independent variables of information demand for planning, organizing, controlling and decision making by using SPSS. According to Nguyen (2013), if the coefficient Cronbach's Alpha is equal or higher than 0.6, and the correlation of each factor is equal or higher than 0.3, the scale is evaluated as good quality. The Cronbach's Alpha testing procedure was performed for each dependent variable, resulting in 16 quality assured scales and being used to analyze the exploratory factors.

The result of the analysis is shown in Table 2. From that result, we employed the Bartlett test and the KMO test for evaluating the relationship between variables. Test results are as follows: (i) Bartlett's test result is 1.123,215 with Sig. = 0.000 < 0.05, concluding that the observed variables are correlated in overall. Thus, the fact that the hypothesis of the factor model is not appropriate will be rejected. This proves that the data employed in this research is perfectly appropriate; (ii) The KMO test (Kaiser - Meyer - Olkin) is of a result = 0.805 > 0.5, the sample size was 161, so the data were suitable for the EFA analysis.

Table 2: Results of Exploratory Factor Analysis KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.805
Bartlett's Test of Sphericity	Approx. Chi-Square	1123.215
	df	105
	Sig.	.000

Rotated Component Matrix^a

	Component			
	1	2	3	4
Information of estimate bidding	.804			
Information of estimate internal contracting	.617			
Information of estimate by centers	.611			
Information of estimate by behaviors	.603			
Information of target cost	.601			
Information of actual cost by centers		.780		
Information of actual cost by projects		.876		
Information of actual cost by behaviors		.612		
Information of actual price		.891		
Information of cost difference by centers			.712	
Information of cost difference by projects			.819	
Information of difference between reality and target			.601	
Information of CVP relationship				.605
Information of break – even point analysis				.608
Information of appropriate information by projects				.643
Information of cost analysis by time				.639

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 5 iterations.

5.2. Discussion

To assess and compare the importance of the demand for information of cost management accounting between domestic construction contract management and the one that involving foreign factors, we compare mean analysis of group variables.

Table 3: Analysis Demand for Cost Information between Domestic Construction Contract Management and Foreign Construction Contract Management

Norms	No. of firms	Domestic construction contract management	Foreign construction contract management	Differences
For planning function		3.607	4.279	18.62%
1. Estimate bidding	161	4.521	4.534	0.29%
2. Estimate internal contracting	161	3.615	4.671	29.21%
3. Estimate by centers	161	3.532	3.914	10.82%
4. Estimate by behaviors	161	3.451	4.265	23.59%
5. Target cost	161	2.918	4.012	37.49%
For organizing function		3.943	4.234	7.39%
1. Cost by centers	161	3.721	4.621	24.19%
2. Cost by projects	161	4.215	4.515	7.12%
3. Cost by behaviors	161	3.367	4.532	34.60%
4. Actual price	161	4.469	4.369	-2.24%
For controlling function		3.738	4.187	12.01%
1. Difference by sections	161	3.827	4.065	6.22%
2. Difference by projects	161	4.250	4.183	-1.58%
3. Difference from target	161	3.136	4.312	37.50%
For decision – making function		3.775	4.489	18.91%
1. CVP relationship	161	3.476	4.851	39.56%
2. Break – even point	161	3.536	4.713	33.29%
3. Appropriate information	161	4.136	4.356	5.32%
4. Cost analysis by period	161	3.952	4.035	2.10%

As can be seen in Table 3, the demand for cost information in the management of construction contracts involving foreign factors is higher than that of domestic construction management (*difference is higher than 0*). In other words, *in the integration trend*, the demand for information on the cost of management is increasingly high in terms of level and quality. This difference is especially high in demand for internal accounting information, differential analysis by sections information, CVP relationship analysis information and demand for appropriate cost information by projects. Data in the Table 3 also show that in the management of construction contracts involving foreign factors, managers pay special attention to information serving the planning function such as estimate internal contracting, estimate by cost centres, and are interested in information of cost management accounting for decision-making function. In particular, information on CVP relationship analysis and appropriate information by projects is highly concerned. It means that for gaining a competitive advantage for winning the construction contracts with foreign investors, the construction cost estimation and construction planning before deploying should be paid special attention by business managers. This is completely suitable with the current situation, when the type of contract is signed under FIDIC conditions, the turnkey lump sum contract is more and more popular in the construction business. Under this condition, cost management accounting requires a combination of methods, especially the use of modern management to meet the information demand of the managers in the context of integration.

To assess the demand for cost information by firm size and by different levels of governance, first and foremost, we conducted Independent T - test to examine whether there was a difference in demand for cost information by firm size and by management levels. The results show that (Sig. <.05), there is a difference. On the other hand, the test results also show that this difference is relative and there is a difference in each type of information. Therefore, we deal with in-depth analysis to examine the differences in information demand by enterprise size and levels of governance, resulting in Table 4.

Table 4: Analysis of Demand for Cost Information in Management of Foreign Construction Contracts by Firm Size and Management Level

Norms	By firm size			By management level		
	Large	Medium	Small	Top	Middle	Bottom
For planning function	4.375	4.378	3.246	4.608	4.353	3.319
1. Estimate bidding	4.867	4.537	4.220	4.851	4.721	3.231
2. Estimate internal contracting	4.975	4.745	3.697	4.935	4.915	3.300
3. Estimate by centers	3.904	4.062	2.495	4.052	3.832	3.876
4. Estimate by behaviors	4.269	4.369	3.259	4.873	4.319	2.752
5. Target cost	3.859	4.176	2.562	4.327	3.976	3.436
For organizing function	4.371	4.233	7.292	4.410	4.664	4.226
1. Cost by centers	4.721	4.473	5.962	4.487	4.665	4.773
2. Cost by projects	4.215	4.012	9.623	4.273	4.715	4.399
3. Cost by behaviors	4.078	4.132	8.778	4.332	4.607	4.729
4. Actual price	4.469	4.315	4.804	4.549	4.669	3.001
For controlling function	4.493	4.155	4.229	4.360	4.674	2.225
1. Difference by sections	4.552	4.062	3.677	4.243	4.627	1.853
2. Difference by projects	4.350	4.107	4.773	4.412	4.650	2.166
3. Difference from target	4.578	4.296	4.238	4.426	4.746	2.655
For decision – making function	4.742	4.543	3.749	4.857	4.468	3.745
1. CVP relationship	4.986	4.862	4.629	4.998	4.785	4.741
2. Break – even point	4.936	4.686	4.782	4.936	4.765	4.054
3. Appropriate information	4.658	4.457	3.123	4.857	4.367	3.218
4. Cost analysis by periods	4.387	4.167	2.460	4.637	3.956	2.967

As can be seen in Table 4, the demand for cost information by firm size shows that the larger the firm size, the higher the demand for cost information, especially the demand for cost information to perform the decision-making function. However, the demand for target cost information to perform the planning function, the difference between the actual cost and target cost to perform controlling function or break-even analysis in the decision-making function reaches the the highest level in medium firms. Therefore, medium firms are those that have to apply advanced techniques and methods of modern management accounting such as: management by target, cost management by operation, cost reports by behaviors. This is explained by the fact that medium firms

are quite dynamic, demand for growth is relatively high and the expansion to the world market is potential.

The data in Table 4 reveal that different levels of management have different demand for different types of cost information. Senior executives have a strong need to use the costing information for planning and for decision-making. Middle level executives are more concerned about the information group that reflects the cost difference between the actual and the estimate, the cost difference from the target and the group that reflects actual costs incurred during the period. At the same time, the low level managers pay the most attention to the information reflecting actual costs incurred during the period. This is also perfectly suited to the functions and responsibilities of different levels of management in Vietnamese firms. However, the modern business environment changes very quickly, which requires the flexibility of the business. Therefore, senior management should increase the level of empowerment for lower-level executives so that they can make quick and timely decisions in response to changes in the business environment. The cost management accounting system is organized instead of focusing solely on the functions of senior management, gradually moving to providing information for supervising operations at all levels and providing information to empowered staffs to proactively make continuous improvements in accordance with changes in the business environment. Accordingly, businesses should consider adopting cost-targeted management model in combination with Kaizen cost cutting and control it through cost center.

6. Conclusions

Research results show that the demand for management accounting information of construction firm in the integration context is increasingly higher in both the level and the quality of information. In particular, managers are actually interested in using cost information provided by cost management accounting to perform their functions. Managers have a high demand for cost estimate information and cost analysis information in the investment decision making process. On the other hand, the demand for cost information depends on the firm size and the different management levels, and the different levels of management have the demand for different types of cost information.

Through the findings of this study, some suggestions are proposed for improving the cost management accounting in construction firms in the context of integration as:

First, budgeting work should be flexible and of special importance. Strengthen close coordination with the technical planning department in the estimation process. Estimates should be based on a bottom-up process, starting with teams and departments to ensure that the estimates are reasonably and well designed.

Second, the demand for information on cost analysis such as CVP relationship, break-even point and appropriate information analysis tends to increase in the integration context, so firms should consider to apply modern management methods such as target cost method; Kaizen's cost-cutting method; cost management by operation (ABC) or cost control method through cost center, ensuring to meet the demand for information of the managers.

Third, the demand for cost information differs according to the firm size and the different levels of management, so organizing the cost accounting in the firm should be based on the size and management levels. Besides, in the modern business environment, cost management accounting is not just about collecting, processing and providing information to corporate executives but also to outsiders. The demand for annual reports, social responsibility reports, environmental reports, and quality reports has gradually become mandatory interest to investors.

Based on the quantitative and qualitative approaches, we have assessed the demand for information of cost management accounting in construction firms. The results show that the demand for cost information tends to increase in the trend of integration. In addition, the demand for cost information depends on the firm size and management level. We also make some recommendations for cost management accounting in construction firms under current integration conditions. This research has enriched literature of cost management accounting as well as contributed to the improvement of cost management accounting in construction firms in the future. However, there are still some shortcomings in the selection of research samples, which have not yet been evenly distributed nationwide. The majority focuses on firms in the northern region. Further research on this issue with bigger sample size and with firms in different areas is identified and discussed.

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