IMPACT OF RESPONSIBILITIES ACCOUNTING ON THE FINANCIAL EFFICIENCY OF ENTERPRISES: CASE STUDY IN VIETNAM

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Abstract: ***The study aims to determine the influence of the application of responsibility accounting on the financial performance of construction enterprises listed on the Vietnam stock exchange. Research is carried out by combining quanitative techniques with survey data of managers at 34 construction companies listed on HOSE. The study has shown 7-component scale on the level of application of responsibility accounting that effect on the financial performance of the enterprises: Division of organizational structure, Decentralization for managers, Budgeting, Evaluation of achieved, Reporting responsibility, Appropriate reward system.***

• Keywords: *impact, application of responsibility accounting, financial performance, Vietnam.*

JEL codes: M41; C58; B26; G39

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1. Introduction

Responsibility accounting is a part of management accounting, aiming to improve the efficiency of each responsibility center, contributing to the achievement of the overall goals of the organization. Responsibility accounting contributes to improving the operational efficiency of each department and each manager. Good responsibility accounting contributes to improving the efficiency in general and the financial efficiency in particular of businesses.

The relationship between the application of responsibility accounting and the financial performance of enterprises is shown in many studies. This research focuses on the effect of responsibility accounting application on financial performance in construction companies listed on Vietnam stock exchange according to SEM linear structure model.

2. Literature review and hypothesis development

2.1. Literature review

The relationship between the application of responsibility accounting and the financial performance of enterprises has been studied a lot in the world and in Vietnam. Some typical studies are as follows:

According to Atkinson et al. (2001), responsibility accounting is an accounting system with the function of collecting, synthesizing and reporting accounting data related to the tasks of each individual manager within an organization, providing information for assessing each manager's responsibility and performance, generating reports that include both controllable and non-controllable objects for a management level. According to the author's point of view, responsibility accounting is a part of management accounting, which is the job of receiving, processing, analyzing, providing information, and evaluating the management responsibility for handling. to achieve the overall goals of the organization. Responsibility accounting has an active role in improving the management and profitability of companies (Lin and Yu, 2002). Casey et al. (2008) studied the influence of organizational processes on responsibility accounting and the level of information security of managers. Research has shown that the most effective factor is the responsibility center, followed by performance measurement techniques, reward systems, performance measurement standards, and assignment of responsibilities.

The financial performance of an enterprise is assessed through 3 criteria: ROA, ROE, ROS (Hult and Izumida, 2008; Almajali et al, 2012). Okoye et al. (2009) research the application of responsibility accounting to improve the performance of production enterprises and confirmed the relationship between the application of responsibility accounting and corporate performance. Research by Amajali et al. (2012) has shown the impact of firm size on financial performance. Research by Tran (2015) determines the factors affecting the level of application of responsibility accounting in cement enterprises. It shows that the larger the company, the higher the financial performance. Nguyen (2018) studies corporate governance and corporate financial performance on the Vietnamese stock market with 789 companies listed on HOSE in the period of

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2013-2015. The author builds a regression model with variables depending on financial performance (ROA, ROE, TBQ, SRD). The results show that a company with a good corporate governance system will help increase financial efficiency. Saleh and Nimer (2022) study to determine the intermediate role of management accounting information systems in the relationship between innovation strategy and financial performance of industrial companies in Jordan. Research on application of responsibility accounting and financial efficiency. Author Mojgan (2012) found that to evaluate company performance, these following criteria should be used: ROI, RI, ROS, EVA, and balance scorecard. It is also important to use additional accounting information for the financial aspects (Hanini, 2013). Afifa and Saleh (2021) study Jordan's industrial companies and show that the management accounting system has a significant impact on financial performance. Al-Khasawneh et al. (2020) show that the application of modern management accounting techniques has a strong positive impact on the financial performance and performance of Jordan 's industrial companies listed on the Amman Stock Exchange. Research by Tran (2015) determines the factors affecting the level of application in cement enterprises. The study also shows that the correlation between the level of application and business performance is positive.

2.2. Research hypotheses development

According to Fowzia (2011), responsibility accounting has an impact on enterprise performance.

According to Almajali (2012), financial performance indicators are divided into two main groups: (i) using accounting figures: ratio between achieved results (net income, net profit) and other inputs (assets, capital, investment capital, equity); (ii) using economic models based on market value.

This paper uses accounting financial performance indicators including ROA, ROE and ROS.

$$\textbf{ROA} = \frac{Profit}{Total\ asets\ average}$$

$$\textbf{ROE} = \frac{Profit}{Average\ equity}$$

$$\textbf{ROS} = \frac{Profit}{Turn\ over}$$

Based on the research of Hanini (2013), Tran (2015), the authors build a 7-component scale on the level of application of responsibility accounting. The study expects the relationship between the level of application of responsibility accounting and the financial performance of enterprises to be a positive correlation.

Research hypothesis:

Hypothesis H1: Division of organizational structure into responsibility centers is positively correlated to financial performance.

Hypothesis H2: Decentralization for managers at all levels has a positive correlation with financial performance.

Hypothesis H3: Appropriate allocation of expense and income is positively correlated to financial performance.

Hypothesis H4: Construction of estimated budget has a positive correlation with financial performance.

Hypothesis H5: Evaluation of achieved results compared with estimations has a positive correlation with financial performance.

Hypothesis H6: Reporting responsibility has a positive correlation with financial performance.

Hypothesis H7: Appropriate reward system has a positive correlation with financial performance.

The author consulted experts and added 2 more control variables: business size and operating time.

3. Research methods and design

3.1. Data collection

According to the data of vietstock.vn (2022), Vietnam has 34 construction companies listed on the HOSE stock exchange. 600 survey questionnaires were sent to department managers of 34 companies. The number of responses is 480, at rate of 80%, the number of usable responses is 451.

The questionnaire was designed according to a 5-point Likert scale on the level of responsibility accounting application and was sent to managers by email and post.

3.2. Measurement of variables

Table 1. Observable variables in the study

Group factor	The meaning of variables
Division of organizational structure into responsibility centers (SHARE)	Four observed variables include: Division of organizational structure into divisions according to operational functions (SHARE1), description of the part function in writing (SHARE2), clear division of work (SHARE3), Relationship between responsibility centers (SHARE4).
Decentralization of management (DECENTR)	Four observed variables include: There is a dedicated manager in each department (DECENTR1), managers in each department are specified in terms of rights and responsibilities (DECENTR2), department managers have full authority to make decisions within their management without being influenced by outside influences (DECENTR3), department manager with appropriate professional qualifications (DECENTR4).
Allocation of expense and income (ALLOT)	Four observed variables include: Recording income and expenses at the responsibility center (ALLOT1), system for allocating income and expenses (ALLOT2), cost allocation by responsibility center (ALLOT3), construction of cost plan (ALLOT4), allocation of indirect costs (ALLOT5).
Construction of estimated budget (ESTIM)	Four observed variables include: Construction of estimated budget for each department (ESTIM1), construction of estimated budget according to financial targets (ESTIM2), construction of estimated budget, according to non-financial targets (ESTIM3), all departments are involved in the construction of the estimate budget (ESTIM4).
Evaluation of achieved results compared with estimations (EVALU)	Four observed variables include: Comparison of the results achieved with the estimated budget (EVALU1), adjustment of operation after evaluation (EVALU2), comparison of the results to assess the performance of the responsibility center (EVALU3), comparison of the results to evaluate the effectiveness of managers (EVALU4).

Group factor	The meaning of variables
Reporting responsibility (REPO)	Three observed variables include: Periodically, each department makes its own report (REPO1), involvement of departments when making reports (REPO2), reports reflect volatility, is there a method to handle discrepancies in the report (REPO3).
Reward system (REWARD)	Four observed variables include: Material rewards for employees who achieve the plan (REWARD1), reward and encourage morale for employees who achieve the plan (REWARD2), employees are satisfied with the reward system (REWARD3), Increased operational efficiency (REWARD4).
Financial performance of the business (ACHIE)	Three observed variables include: ROS (ACHIE1), ROA (ACHIE2), ROE (ACHIE3).
Scale (SIZE)	Five control variables include: Under 1000 billion VND (SIZE1), From 1000 billion VND - Under 10,000 billion VND (SIZE2), From 10,000 billion VND -Under 20,000 billion VND (SIZE3), From VND 20,000 billion- Under VND 30,000 billion (SIZE4), From VND 30,000 billion or more (SIZE5).
Operating time (AGE)	Five control observed variables include: Under 10 years (AGE1), From 10 years - Under 20 years (AGE2), From 20 years - Under 30 years (AGE3), From 30 years - Under 40 years (AGE4), From 40 years or more (AGE5).

3.3. Research model

The following regression model is estimated in this paper:

$$ACHIE_{i,t} = \alpha + \beta_1 SHARE_{i,t} + \beta_2 DECENTR_{i,t} + \beta_3 ALLOT_{i,t} + \beta_4 ESTIM_{i,t} + \beta_5 EVALU_{i,t} + \beta_6 REPO_{i,t} + \beta_7 REWARD_{i,t} + \beta_8 SIZE_{i,t} + \beta_9 AGE_{i,t} + \varepsilon_{i,t}$$

4. Results and discussion

4.1. Cronbach's Alpha test

Table 2. Cronbach's Alpha Tests

Component	N of Items	Cronbach's Alpha
SHARE	4	0.839
DECENTR	4	0.855
ALLOT	4	0.872
ESTIM	4	0.846
EVALU	3	0.865
REPO	4	0.873
REWARD	4	0.854
ACHIE	3	0.856

In the process of running the model on AMOS 20 software, we see that the variable type ALLOT2 due to Corrected Item-Total Correlation is less than 0.3. Run it again, we get Table 2.

Table 2 shows the Corrected Item-Total Correlation of all variables is greater than 0.3 and the Cronbach Alpha coefficient is greater than 0.6. Hence, we do not eliminate any observable variables.

4.2. EFA exploratory factor analysis

When performing KMO and Bartlett's Test, the authors found that the variable EVALU3 was uploaded by this variable in both factors, then the author run it again and present the results in Table 3.

Table 3. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.878
Bartlett's Test of Sphericity	Approx. Chi-Square	7499.264
	df	465
	Sig.	.000

Table 3: KMO and **Bartlett's Test show that** KMO = 0.878, so factor analysis is appropriate. Sig. (Bartlett's Test) = 0.000 (sig. < 0.05) shows that the observed variables participating in the EFA analysis are correlated with each other.

Table 4. Total Variance Explained

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings[a]
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	7.410	24.699	24.699	7.047	23.489	23.489	3.595
2	2.946	9.820	34.518	2.575	8.584	32.074	3.170
3	2.739	9.130	43.649	2.342	7.806	39.879	3.783
4	2.321	7.737	51.386	1.957	6.523	46.402	3.862
5	2.012	6.705	58.091	1.617	5.390	51.792	4.362
6	1.709	5.695	63.786	1.318	4.392	56.184	2.959
7	1.540	5.132	68.918	1.189	3.964	60.148	3.842
8	1.032	3.440	72.358	.696	2.322	62.470	5.127
9	.566	1.887	74.245				
10	.523	1.743	75.988				
11	.491	1.637	77.625				
12	.480	1.599	79.224				
13	.467	1.558	80.782				
14	.452	1.506	82.288				
15	.419	1.396	83.684				
16	.413	1.376	85.060				
17	.395	1.317	86.378				
18	.385	1.284	87.661				
19	.377	1.256	88.917				
20	.370	1.235	90.152				
21	.356	1.187	91.338				
22	.342	1.139	92.477				
23	.330	1.101	93.578				
24	.325	1.083	94.661				
25	.305	1.017	95.678				
26	.289	.964	96.642				
27	.274	.914	97.556				
28	.263	.876	98.432				
29	.247	.822	99.254				
30	.224	.746	100.000				

Extraction Method: Principal Axis Factoring.

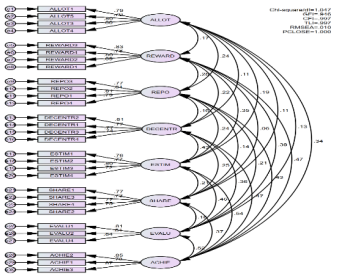
a. When factors are correlated, sums of squared loadings cannot be added to obtain a total variance.

According to Table 4, there are 8 factors extracted based on the criterion eigenvalue of 1.032 > 1, so these 8 factors summarize the information of 30 observed variables included in EFA in the best way. The total variance of these factors extracted is 62.470% > 50%, thus, the 8 extracted factors explain 62.470% of the data variation of 30 observed variables participating in EFA.

4.3. Analysis of CFA

The author uses AMOSS 20 software to perform CFA analysis, the results of CFA analysis are shown in Figure 3.

Figure 3. CFA analysis results from AMOS 20 software



The results of CFA analysis on AMOSS 20 software in Figure 3 show that the Model Fit numbers are all within acceptable thresholds: CMIN/DF = **1.047**< 3; GFI = **0.946** > 0.9; CFI = **0.997** > 0.9; TLI = **0.997** > 0.9; RMSEA = **0.010** < 0.08; PCLOSE =

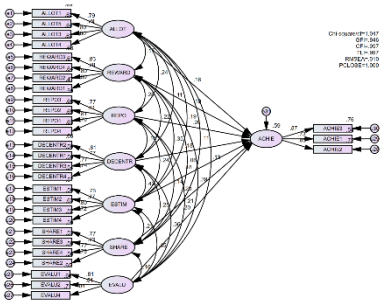
1.000 > 0.05. Thus, the model has a good fit. At the same time, all observed variables are significant in the model because the p-value is less than 0.05.

4.4. Structural Equation Model Analysis SEM

The results of SEM structural equation modeling analysis show that Chi-square/df = 1.047 < 3, GFI criteria = 0.946, CFI = 0.997, TLI = 0.997, RMSEA = 0.10 < 0.080, thus, meeting the compatibility requirements. .

All effects in the model are significant because the p-values are less than 0.05.

Figure 4. SEM model



The analysis results on AMOSS 20 in Table 6 show the R2 value of the dependent variable ACHIE is 0.592. Thus, the independent variables affecting ACHIE explain 59.2% of the variation of this variable.

Table 6. Squared Multiple Correlations: (Group number 1 - Default model)

	Estimate
ACHIE	.592

4.5. Summary of results and discussion

The analysis results show that the variable that divides the organization into responsibility centers is positively correlated to financial performance (mean estimate coefficient is 0.200). This result is consistent with the study of Tran Trung Tuan (2015), which proves that a clear division of responsibilities between departments will promote financial efficiency. Dividing the organizational structure into responsibility centers is a premise to implement and promote the role of responsibility accounting.

The decentralization variable is positively correlated to financial performance (mean estimate coefficient is 0.180). This proves that enterprises that clearly decentralize management to department managers have a positive impact, contributing to increasing financial efficiency.

The cost-income distribution variable also has a positive correlation (mean estimate is 0.159). When businesses allocate income - expenses in more detail, it will positively affect financial performance, contributing to increasing financial efficiency.

The positive impact estimation variable has a positive correlation with financial performance (mean estimate is 0.182). The level of estimation in accordance with the needs of using and controlling information will make businesses operate more efficiently.

The estimated evaluation variable compared with the actual one has a positive correlation with financial performance (mean estimate coefficient is 0.199). Thus, evaluating the results achieved against the estimates will make the departments work harder to achieve the estimates, making the business operate more efficiently.

Reporting variables has a positive correlation with financial performance (mean estimate is 0.201). Therefore, making reports to evaluate the results achieved compared to the estimate will make the departments work harder to achieve the plan, making the business operate more efficiently.

The reward variable has a positive correlation coefficient with financial performance (mean estimate coefficient is 0.194). This proves that enterprises with an appropriate and useful reward system will positively affect employees, department management, increase operational and management efficiency, and improve financial performance.

Conclusion: The research results show that all 07 factors of responsibility accounting positively correlate with financial performance. Therefore, businesses need to strongly apply responsibility accounting to improve financial efficiency. Dividing the organizational structure into clear responsibility centers is a starting condition for enterprises to well implement responsibility accounting, follows up by the application of other 6 factors to establish an efficient responsibility accounting system in enterprises.

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