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Responsibility Accounting in Public Universities: A Case in Vietnam

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Abstract

This study examines the current situation of responsibility accounting and proposed management solutions according to responsibility centers on public universities in Vietnam. The study applies quantitative research methods, and collected data through structured questionnaires to 138 public universities in Vietnam in 2019, receiving back 55 valid questionnaires. The data was cleaned and analyzed with SPSS software. The results show that most public universities in Vietnam assigned management responsibility to their departments, but responsibility accounting was not comprehensive since many universities are not financially autonomous. The Kruskal Wallis Test was conducted to compare the current situation of responsibility accounting among universities by the degree of autonomy and by geographic area. The research found out that totally autonomous universities assigned management responsibility to responsibility centers better than semi-autonomous and non-autonomous universities did. Regarding the evaluation of management responsibility, universities in Central Vietnam rated specific quantitative criteria, residual income (RI) and returns on investment (ROI) higher than universities in the North and the South of Vietnam did. However, universities in the South of Vietnam rated the evaluation of profits by department higher than the rest. The study also suggests structure for establishing responsibility centers in accordance with public universities in Vietnam.

Keywords : Autonomy, Decentralization, Public Universities, Responsibility Accounting, Responsibility Centers.

JEL Classification Code: M10, M21, M41.

1. Introduction

Due to globalization, universities in general and public universities in particular need to improve training quality and brand image. University autonomy is inevitable for the development of education and training in Vietnam. According to Vietnam's Education Law (2005), university autonomy includes regulations on personnel, academic autonomy, and finances. The models of autonomy classify different degrees of autonomy, including (1) non-autonomous (state control), (2) semi-autonomous, and (3) fully autonomous. As of December 2018, Vietnam had 171 public universities (accounting for 72.45% of the total number of universities)

(Nguyen, 2020). The assignment of university autonomy was conducted under Resolution 77/NQ-CP issued on October 24, 2014, on piloting the renovation of operational mechanisms of public tertiary education institutions in the period 2014 - 2017. In particular, the right of autonomy and self-responsibility of public universities includes (i) autonomy in performing tasks, (ii) autonomy in organizational structure and personnel, and (iii) financial autonomy. Autonomy in performing tasks includes the right to identify the missions, the visions, autonomy in enrollment activities, training, scientific research and international cooperation. Autonomy in organizational structure and personnel is reflected in the freedom to recruit, manage and utilize employees. Financial autonomy means that a university has to take responsibility for finance issues, generate revenues, and use financial resources, instead of receiving government grants.

The transition from a state-control model to a more autonomous model requires public universities to operate more effectively and efficiently. In order to improve operational efficiency, public universities in Vietnam apply many methods, including assigning responsibilities to individuals and departments and conducting responsibility accounting. In the initial stage of assigning responsibilities,

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universities face certain challenges. Therefore, this study was conducted with the following objectives:

- [1]. Evaluating the current situation of responsibility accounting in public universities in Vietnam (establishing responsibility centers and evaluating such responsibility centers);
- [2]. Offering suggestions regarding assignment of management responsibility;
- [3]. Comparing the current situation of responsibility accounting and proposals of universities regarding assignment of responsibilities by the degree of autonomy and geographic area.
- [4]. Proposing structure for establishing responsibility centers suitable with public universities in Vietnam.

2. Literature Review

Responsibility accounting was first introduced in the US in the 1950s, then spreading to England, Australia, Canada which have developed market economy and strict requirements of information management. The concept of responsibility accounting has been examined in different aspects by many researchers. Atkinson et al. (1997) stated that responsibility accounting is a part of the accounting system that collects, summarize and provides information related to expenses, incomes and performance of each responsible department. Kaplan and Atkinson (2007) stated that responsibility accounting is a control system based on the principles of decentralization, approval and responsibility. Responsibility is assigned to each responsibility center and the manager must be responsible for each division, these may be departments, branches or units.

According to Kaplan and Atkinson (2007), there are four responsibility centers: (1) the cost center is the responsibility center where the manager is only responsible for or only has control over expenses, but not revenues, profits or investment. The cost center is associated with operational management; (2) the revenue center is the responsibility center where the manager is responsible for revenue, but not profits or capital; (3) the profit center is an organizational division where the manager takes full responsibility from revenues and costs to performance. The responsibility centers are usually associated with middle management, but such managers have power to decide all the issues from operational strategy to operational practice of the organization; (4) the investment center is attached to the highest level of management such as the Board of administrators, the Board of Directors, and the university council. The investment center is where managers plan and control the entire operation of the unit and the process of asset investment.

Responsibility accounting has been investigated by many researchers all over the world and was proved to be an effective management tool that contributes to improving

the use of limited resources. In the education sector, responsibility accounting has been studied in many countries such as Thailand, Italy, Germany, England, Russia, Belgium, and Norway. Upping and Oliver (2012) examined 78 Thai public universities using quantitative research methods with data collected from surveying Financial Directors. The study was conducted in the context where the Thai government was adjusting the operating mechanism of public universities towards financial autonomy. The study focused on changes in management accounting system, the role of responsibility accounting, establishing responsibility centers, assignment of responsibility, establishing criteria and methods to evaluate performance. The study contributed to the research on responsibility accounting in public sector, especially in developing countries.

Agasisti and Johnes (2008) evaluated cost management efficiency of Italian universities. The changes in organizational structure, cost system, and the assignment of responsibility to divisions improve efficiency of universities. In order to ensure the decentralization, while emphasizing the role of the leaders, it is necessary to establish standard costs, pay attention to the reasonability of standards, management system, and appropriate cost-allocation methods. The study confirmed that responsibility has a close relationship with management decentralization and cost accounting. Therefore, to establish responsibility accounting system, it is necessary to ensure the following principles: (1) dividing divisions by function, (2) assigning specific responsibility to each department, (3) each department must prepare a report, and (4) establish supervising positions for each management level.

Küpper (2013) provided that many public universities in Germany proposed new accounting systems to manage their finances based on data from two public German universities, Heidelberg and Vienn. The results showed that accounting reforms leads to an increase in performance in accordance with the nature and goals of public universities. Moreover, long-term financial decisions play an important role in universities' management. This study also examined management accounting tools such as responsibility accounting and balanced scorecards. These are two important methods of management accounting to manage and evaluate the performance of each department. This study recommended that management accounting be applicable to public universities all around the world.

Agasisti and Gralka (2019) conducted a study on public and private universities in Italy and Germany. In the higher education sector, the methods of organizing training and learning, and the requirements for quality of students vary from country to country. This paper focused on the performance of universities when applying different management accounting tools. The results showed that universities applying responsibility accounting by empowerment have higher performance in the short-term and

long-term than universities applying traditional management methods. A comparison among countries showed that the efficiency of private universities is higher than that of public universities. Moreover, Italian universities have higher overall efficiency. Public universities in both countries are less efficient due to their complex organizational structures and poor cost-management systems. The study suggested focusing on the national structure of the education system rather than restructuring each individual university.

Cropper and Cook (2010) conducted a study of British universities between 1993 and 1998. The study described the current status of cost systems of universities and analyzed the achievements of these universities in managing activity-based costing and responsibility accounting. The results showed that, while the implementation of activity-based costing and responsibility accounting is slow due to many causes, individual responsibility is promoted in the overall operation. Timoshenko and Adhikari (2009) provided insight into the nature of accounting changes in Russian public universities. The traditional management accounting should be limited and the modern management accounting such as strategic management accounting, social responsibility accounting, responsibility accounting should be emphasized. In order to promote the application of modern management accounting, universities need to change their management styles, moving from “centralization” to “decentralization”. In other words, universities should assign autonomy and power to each small unit and establish boundaries and evaluation criteria for each department.

Christiaens and Wielemaker (2003) examined current accounting reforms for accrual accounting at Flemish universities in Belgium. The results showed that the combination of the traditional budget accounting system and the modern financial accounting system failed. The applications of responsibility accounting, strategic management accounting were not successful. The study showed that the fear of change and hesitance to approach the new things caused the failure of both accounting systems in these universities. Nayeri et al. (2008) examined economic management universities in Iran. The balanced scorecard, responsibility accounting are powerful models for strategic positioning, and analyzing all aspects of the organization equally. Staff's responsibilities can be promoted by empowerment and assigning autonomy to each department and unit. This study reviewed the advantages of the balanced scorecard and responsibility accounting in strategic evaluation, analyzing the environment of the best business universities in Iran. The results can be used in developing strategic plans for these universities as well as other Iranian business management universities.

Mauland and Mellempvik (2002) examined the educational systems of 26 colleges and universities in Norway. These universities vary considerably regarding

the number of students, the number of lecturers, scientific works, the number of disciplines, and training programs. These universities are funded by the government in terms of infrastructures, facilities, payroll, scientific research costs, enrollment, student scholarships and other incentives. However, some universities are seeking ways to change the system of management towards simplicity, flexibility, and efficiency. This study provided guidance for Norwegian universities to apply responsibility accounting through the assignment of rights and obligations to each small unit of faculties and offices to enable more systematic and efficient management.

Hancock et al. (2008) investigated the application of financial reporting framework for information disclosure of Australian universities. The results showed that more than 90% of universities' reports did not fully comply with the accounting standards. The reason is that such universities paid more attention to management accounting than financial statements. Since these universities are autonomous and take responsibility for their finance, curriculum, enrollment, scientific research, they are interested in managing costs and training quality. The study suggested to considering universities as investment centers to save costs while effectively exploiting resources. Furthermore, each department must be considered as a cost center which is responsible for expenditures when authorized and each faculty should be considered as a revenue center. Thus, the use of responsibility accounting to manage responsibility centers is an important mechanism to achieve the universities' overall goals.

Umashankar and Dutta (2007) investigated modern management accounting issues such as the balanced scorecard and responsibility accounting applied in universities in India. The study transformed the mission of creativity, sharing and use of knowledge into a comprehensive, coherent, communicative framework serving internal purposes of universities. The study also proposed a useful model with appropriate management measures and criteria suitable with the operational characteristics of universities. According to this study, the most important issue is cost management. Furthermore, each organization should build its own accounting system and they must operate and control it themselves. In order to save costs, universities should impose personal responsibility for each type of costs. Depending on the size and nature of operations of organizations, decentralization of management is appropriate. According to the study, designing and constructing an effective responsibility system requires the synchronized changes of the whole system. This is the first study on management accounting, responsibility accounting in the education sector in India.

Huynh (2020), and Nguyen (2020) explore factors that affect the performance of responsibility accounting at public universities in Vietnam. The study conducted a survey of 130,

out of 154 public universities in Vietnam, and uses regression analysis methods. The results identify eight groups of factors affecting the performance of responsibility accounting at these establishments of higher education: Division of the organization into responsibility centers; Estimation and Reality; Cost and income allocation; University autonomy; Management decentralization; Estimation; Reward; and Report. Thus, different studies carried out in different countries, time period, conditions and operating mechanisms confirmed the role of responsibility accounting. The details are explained as follows:

- Universities all around the world assign autonomy to heads of divisions, departments, faculties, and boards. Each operating unit establishes financial autonomy and takes responsibility for the results of that unit. This facilitates them to participate in the management process and become familiar with the independent management. It enables more effective management process since the heads of departments know their departments better than others. This process helps the universities' administrators have more time to focus on strategic and important issues.
- Universities that apply responsibility accounting use resources more effectively through cost savings for activities, eliminating unnecessary activities, which helps to concentrate the resources needed to refine the content of the curriculum, lectures, teaching methods, and scientific research to improve quality of training and reputation of universities.

Based on the literature review, applications of responsibility accounting in universities are critical for the development of public universities in Vietnam in short-term and long-term. In that country, the concepts of management accounting in general and responsibility accounting in particular had been introduced and studied in the 1990s when the market economy, which requires better accounting systems, developed. However, applications of such methods are not effective.

3. Materials and Methodology

The study was conducted by sending questionnaires to the accounting department of 138 Vietnamese public universities. The questionnaire was divided into five main parts: (i) the current situation of management decentralization; (ii) the current situation of management responsibility; (iii) the current situation of performance evaluation; (iv) suggestions regarding the assignment of management responsibility; and (v) information of respondents and public universities. The identification of costs used Yes/No questions. The assessments on management accounting were measured using the 5-point Likert scale, in which 1-“Strongly disagree” to 5-“Strongly agree”.

The number of valid completed questionnaires was 55 from 53 public universities. With the response rate of 40%, the minimum sample size is 41, according to Nguyen and Nguyen (2015). Therefore, the sample is appropriate for further analysis.

Regarding characteristics of respondents, out of 55 people participating in the survey, most respondents were female (41; 74.5%) and accountants (48; 87.3%). Regarding working tenure, the majority of respondents had been working for more than 10 years (27; 49.1%), followed by the number of respondents who had been working from 5 to 10 years (20; 36.4%). Regarding the educational level, the number of postgraduates was higher than the number of university graduates (42; 76.4%). Demographic results showed that respondents are appropriate subjects to collect relevant data on the management accounting application of public universities

Regarding the characteristics of public universities participating in this study, out of 53 surveyed universities, 16 were fully autonomous, 29 were partially autonomous schools and eight universities were non-autonomous. Regarding the length of operation, the most common group was universities that had been established for 50 years or more (25; 47.2%). The next most common group was universities that had been established for between 20 and 50 years (16; 30.2%). The rest were universities for less than 20 years. Regarding geographic area, the majority of universities were located in the North of Vietnam (30; 56.6%). The number of universities located in the Central and the South of Vietnam were relatively similar (20.8% and 22.6%, respectively). The distribution of 53 public universities was appropriate (Vu, 2017).

Data was cleaned and analyzed using SPSS 20. Analysis methods used in this study included descriptive statistics and comparison by Kruskal Wallis Test.

4. Research Results

4.1. Responsibility Accounting

4.1.1. Current Situation of Management Responsibility

The basis for evaluating responsibility is to divide a university into responsibility centers with different levels of responsibility of the department heads. The department manager will be responsible for his department in accordance with the goals assigned. To evaluate this item, the study used 5-point Likert scale. The results are shown in Table 1.

Table 1 indicates that all items received high agreement level from 63.6% to 87.3%. “The university has well-established decentralization of management in each department” received the highest agreement level of 87.3%, followed by “Service centers take responsibility for revenues

(profits) for their units”. Furthermore, “Administrative units (faculties, departments) take responsibility for costs incurred at their units” received the lowest level of agreement. Only 1.8% of respondents rated “strongly agree” for “Service centers take responsibility for revenues (profits) for their units” and 3.6% rated “strongly agree” for “Administrative units (faculties, departments) take responsibility for costs incurred at their units”.

Regarding the organizational structure, item “The university has well-established decentralization of management in each department” (mean =4.05) received the highest agreement level. The reason is that Vietnam’s education law of 2019 stipulates that organizational structure of public universities consists of: university council; principal and vice principals; departments, faculties. Therefore, any university needs to establish organizational structure based on this requirement

In terms of the responsibility of each department, item “The Board of administrators take responsibility for investment of assets in university” had a mean of 4.18 which was the highest level in the performance evaluation. This content is stipulated in Vietnam’s legal documents on university regulations and financial management regulations. Investment of assets in universities includes basic construction and fixed assets such as machine and equipment for the purpose of experimenting, practicing, teaching, and learning. For non-autonomous universities and

partly autonomous universities, these assets are funded by the state budget. However, fully autonomous universities have to pay for these assets themselves.

In terms of the responsibility of each department, first of all the responsibility of the university head. Item “Service centers take responsibility for revenues (profits) for their units” had a mean value of 4.18. These are business units, which brings revenues to public universities. Depending on the facilities, management mechanisms universities can develop service centers such as IT centers, English centers, short-term training centers, other services including parking, printing, stationery, foods and drinks, and renting space to others. Normally, universities allow these centers to operate separately and are responsible for revenues, costs and profits.

Considering the cost responsibility of faculties and departments, they take responsibility for costs incurred at their units. This item had a mean value of 3.56 which was the lowest level of agreement among items. The expenses that departments are responsible for include: Expenses for stationery, telephone bills, sanitation costs, water, reception, mail, documents, course books, and trade union activities. Regarding payroll expenses, most non-autonomous public universities did not assign payroll expenses to each faculty. These expenses are still managed by the universities and are paid according to the payroll of the state. The costs of scientific research, depending on each university, can be assigned to each department or managed by the university.

Table 1. Current situation of responsibility accounting

Current situation (No = 55)	Mean	Percentage (%)					
		S1	S2	S3	S4	S5	S4&S5
Responsibility							
1. The university has well-established decentralization of management in each department	4.05	0	1.8	10.9	67.3	20	87.3
2. Administrative units (faculties, departments) take responsibility for costs incurred at their units.	3.56	3.6	12.7	20	50.9	12.7	63.6
3. Service centers take responsibility for revenues (profits) for their units	4.11	1.8	3.6	9.1	52.7	32.7	85.5
4. The Board of administrators take responsibility for investment of assets in university	4.18	0	1.8	16.4	43.6	38.2	81.8
Evaluation							
1. Performance is evaluated by specific quantitative criteria	3.78	1.8	9.1	16.4	54.5	18.2	72.7
2. Classifying controllable and uncontrollable costs/ profits	3.04	1.8	32.7	25.5	40	0	40
3. Evaluating profits by department	3.35	3.6	16.4	27.3	47.3	5.5	52.8
4. Analyzing residual income (RI)	3.53	1.8	10.9	25.5	56.4	5.5	61.9
5. Analyzing returns on investments (ROI)	3.07	7.3	20	36.4	30.9	5.5	36.4

(Note: S1_Strongly Disagree; S5_Strongly Agree)

4.1.2. The Current Situation of Performance Evaluation

Evaluation criteria are critical to assess performance of each department and the entire university. The current situation of performance evaluation applied in public universities in Vietnam is shown in Table 1. It pointed out “Performance is evaluated by specific quantitative criteria” received the highest level of agreement (72.7%). However, specific criteria were not used much by universities. In particular, 61.9% of universities rated “agree” or “strongly agree” for “Residual Income”, this figure was 52.8 for “Evaluating profits by department”. Two items, “Classifying controllable and uncontrollable costs/profits” and “Analyzing returns on investments (ROI)” received low levels of agreement (40% and 36.4%).

Performance is evaluated by specific quantitative criteria had highest mean value of 3.78. Generally, universities are divided into teaching divisions and administrative divisions. A teaching division consists of many departments and faculties. The common criteria to evaluate training division are: the number of teaching hours and quality of teaching, the number of scientific research projects per month, the number of graduation projects, the number of theses, the number of students per year, and other criteria such as extracurricular activities, and volunteer activities. The administrative division also includes the departments, centers. The common criteria to evaluate the efficiency of the administrative division are: (i) completing the tasks according to the plan; (ii) the progress of ensuring the quantity and quality of work such as recruiting students of the department of studies; and (iii) managing students of the department of student affairs, managing files of administrative department.

In terms of evaluation, each university has its own methods and purposes such as: (i) conducting regular performance evaluation (monthly, quarterly, yearly) to determine teaching allowances, bonuses, salary increases, and performance-based honorific titles; (ii) conducting evaluation according to subject by university council or each unit; and (iii) using evaluation criteria, which can be profits, revenue and expenditure differences, efficiency, effectiveness, and performance.

Thus, the decentralization of management of universities is relatively well-established. In particular, the board of administrators responsible for investment of assets (investment center) and service centers are responsible for the revenues (profits) of their units. However, the management decentralization is not yet associated with the responsibility of controlling costs for faculties, specialized departments (cost center). In addition, universities had not established appropriate quantitative measurement criteria to evaluate the performance of these departments (departments’ profits, controllable/uncontrollable profits/costs, RI, and ROI). In particular, the ROI and controllable and uncontrollable costs/profits have not received much attention from universities.

4.1.3. Suggestions Regarding the Assignment of Management Responsibility

Suggestions of assigning management responsibility to departments are shown in Table 2.

All suggestions received high level of agreement from respondents, particularly, from 81.9% to 96.3% answered “agree” or “strongly agree” (Table 2). “Establishing evaluation criteria for each department” received the highest level of agreement, which was followed by “Preparing performance reports for each department” and “Assigning autonomy to departments” (89.1% and 87.3%). “Assigning responsibility for revenue and expenditures to each department head” received the lowest level of agreement (81.9%).

Mean values of these items were from 4.04 to 4.18, which correspond to a score of “agree”. “Establishing evaluation criteria for each department” had the highest mean value. The remaining suggestions had similar mean values. Thus, accountants supported the establishment of responsibility centers, assigning autonomy to each department. The degree of autonomy depends on the goals of each university. The fact is that the administrative management of public universities in Vietnam is complicated and inefficient. The government and the Ministry of Education and Training of Vietnam have recognized these problems, but the transition from “subsidy” to “autonomy” requires a roadmap.

Table 2. Suggestions regarding the assignment of management responsibility

Suggestions (No=55)	Mean	Percentage (%)					
		S1	S2	S3	S4	S5	S4&S5
1. Assigning autonomy to departments	4.07	0	7.3	5.5	60.0	27.3	87.3
2. Assigning responsibility for revenue and expenditures to each department head	4.04	0	3.6	14.5	56.4	25.5	81.9
3. Establishing evaluation criteria for each department	4.18	0	0	3.6	74.5	21.8	96.3
4. Preparing performance reports for each department	4.05	0	1.8	9.1	70.9	18.2	89.1

(Note: S1_Strongly Disagree; S5_Strongly Agree)

4.2. Comparison

Based on the evaluation of the current situation of responsibility accounting and suggestions regarding the assignment of management responsibility, research hypotheses are proposed as follows: (i) There is no difference in management responsibility among universities by geographical area and the degree of autonomy; (ii) There is no difference in the performance evaluation among Vietnamese public universities by geographic area and the degree of autonomy; (iii) There is no difference in the suggestions regarding the assignment of management responsibility among Vietnamese public universities by geographical area and the degree of autonomy. The results of Kruskal Wallis Test show that:

- There is a difference in management responsibility among universities by the degree of autonomy (see Table 3).
- There is a difference in performance evaluation among universities by geographical area (see Table 3).
- There is a difference in suggestions regarding the assignment of management responsibility among Vietnamese public universities by the degree of autonomy (see Table 4).

4.2.1. Current Situation of Management Responsibility

Table 3 shows that “The university has well-established decentralization of management in each department”

and “Administrative units (faculties, departments) take responsibility for costs incurred at their units” had significance values greater than 0.05. Therefore, there is not enough evidence to determine whether there is a difference in these two items between autonomous universities and non-autonomous universities.

Regarding the remaining two items, there are differences among groups of universities by the degree of autonomy. Particularly, 17 universities were fully autonomous, 30 were partially autonomous schools and eight universities were non-autonomous. The totally autonomous universities conduct management responsibility better than partially autonomous and non-autonomous universities. Specifically: “Service centers take responsibility for revenues (profits) for their units” had $H(1) = 5.952$, $p = 0.05$; “The Board of administrators take responsibility for investment of assets in university” had $H(1) = 16.212$, $p = 0.00$

4.2.2. Performance Evaluation

Table 3 reveals that there is a difference in evaluation of responsibility centers among universities by geographical area. In this study, 32 universities were located in the North of Vietnam, 11 were located in the Center of Vietnam, and 12 were located in the South of Vietnam. Regarding “Performance is evaluated by specific quantitative criteria”, “Analyzing residual income (RI)” and “Analyzing returns on investments (ROI)”, universities in the Center of Vietnam rated these items higher than universities in the North and

Table 3: Kruskal Wallis Test__ Current situation

Current situation (No =55)	Mean	Std. Deviation	Chi-Square	Asymp. Sig.
Responsibility				
1. The university has well-established decentralization of management in each department	4.05	0.621	4.161	0.125
2. Administrative units (faculties, departments) take responsibility for costs incurred at their units.	3.56	0.996	4.923	0.085
3. Service centers take responsibility for revenues (profits) for their units	4.11	0.854	5.952	0.05*
4. The Board of administrators take responsibility for investment of assets in university	4.18	0.772	16.212	0.00**
Evaluation				
1. Performance is evaluated by specific quantitative criteria	3.78	0.917	7.242	.027*
2. Classifying controllable and uncontrollable costs/profits	3.04	0.902	1.616	0.446
3. Evaluating profits by department	3.35	0.947	8.149	.017*
4. Analyzing residual income (RI)	3.53	0.836	10.376	.006**
5. Analyzing returns on investments (ROI)	3.07	1.016	9.054	.011**

* Significant at the 0.05 level

** Significant at the 0.1 level

the South of Vietnam did. However, in terms of “Evaluating profits by department”, universities in the South of Vietnam rated this item higher than universities in the North and the Center of Vietnam.

Performance is evaluated by specific quantitative criteria:

($H(2) = 7.242, p = 0.027$)

Evaluating profits by department:

($H(2) = 8.149, p = 0.017$)

Analyzing residual income (RI):

($H(2) = 10.376, p = 0.006$)

Analyzing returns on investments (ROI):

($H(2) = 9.054, p = 0.011$)

Regarding geographic area, most universities are located in the North of Vietnam (mainly in Hanoi) and the South of Vietnam (mainly in HCM city). There are not many universities in the Center of Vietnam.

As a result, universities in the Center of Vietnam receive more incentives and support from the government and the Ministry of Education regarding operational mechanisms, enrollment, tuition fees, admission requirements, and other financial policies. Moreover, because the number of universities is small, each university often offers multidisciplinary training, therefore, recruitment of students is easier. These universities are often small in scale, thus they can save management costs and indirect costs and have high performance. That is the reason why the RI and ROI of such universities are higher than universities in Hanoi and Ho Chi Minh City.

4.2.3. Suggestions Regarding the Assignment of Management Responsibility

Table 4 exhibits that there is a difference in the suggestions regarding the assignment of management responsibility among Vietnamese public universities by the degree of autonomy. In particular, 17 universities were fully autonomous, 30 were partially autonomous schools and eight universities were non-autonomous. Non-autonomous universities and totally autonomous universities rated these suggestions higher than partially autonomous universities. Specifically: Preparing performance reports for each department: ($H(3) = 6.661, p = 0.036$).

5. Conclusion and Recommendations

5.1. Conclusion

The study showed that Vietnamese public universities had achieved outstanding results. Firstly, universities had well-established decentralization of management, which is the basis for the establishment of responsibility centers. Furthermore, universities established standard costs and assign autonomy in managing costs through regulations on internal expenses such as payments for employees, expenses for teaching and scientific research activities. Regulations on internal expenses specify responsibility of individuals and departments in universities, which are basis for controlling costs of the accounting department and the board of administrators. Service centers, which have contract with universities, are responsible for the revenue (profits) of their units. Universities have specific mechanisms and regulations for service centers such as Information Technology center, Language centers. Generally, universities supported the establishment of responsibility centers in accordance with the characteristics of each department and university's goals.

However, there exist certain limitations in the application of responsibility accounting. In particular, the decentralization of management is not linked with assigning responsibility for controlling costs to each department and faculty. Furthermore, regulations on standard costs do not facilitate the decentralization of management. In addition, universities do not have appropriate quantitative measurement criteria to evaluate the performance of departments and faculties when applying the responsibility centers. Universities used residual income to evaluate the performance of departments and the whole universities, while other criteria have not received much attention. Last but not least, ROI was not used much by universities.

Regarding the degree of autonomy, autonomous universities implemented management responsibility on revenue center and investment center than non-autonomous and partly autonomous universities did. Suggestions in assigning responsibility received high agreement level from fully autonomous and non-autonomous universities. This indicates that the applications of responsibility accounting

Table 4. Kruskal Wallis Test Suggestions

Suggestions (No=55)	Mean	Std. Deviation	Chi-Square	Asymp. Sig.
1. Assigning autonomy to departments	4.07	.790	.169	.919
2. Assigning responsibility for revenue and expenditures to each department head	4.04	.744	2.487	.288
3. Establishing evaluation criteria for each department	4.18	.475	.963	.618
4. Preparing performance reports for each department	4.05	.591	6.661	.036*

* Significant at the 0.05 level

are associated with assigning specific responsibility to managers of departments. There is a difference in the evaluation of management responsibility among universities by geographic area. Particularly, universities in the Center of Vietnam rated items “Performance is evaluated by specific quantitative criteria”, “Analyzing residual income (RI)” and “Analyzing returns on investments (ROI)” higher than universities in the North and the South of Vietnam did. However, in terms of “Evaluating profits by department”, universities in the South of Vietnam rated this item higher than universities in the North and the Center of Vietnam.

5.2. Recommendations

5.2.1. To Establish Responsibility Centers in Universities

Vietnamese public universities should implement responsibility accounting to control costs and evaluate performance of departments. Specifically, faculties and departments are considered as cost centers, which are assigned plans annually and are responsible for managing, exploiting, using, and allocating resources effectively. Furthermore, leaders are responsible for controlling costs of their departments. Service departments are considered profit centers, which are assigned plans annually and are responsible for and cost control of their units. Service Centers are considered to be profit centers, assigned annual plans and are solely responsible for managing, exploiting, using, and allocating resources, revenue, and profits effectively. The leaders are responsible for controlling costs, revenue, and profits of their departments

5.2.2. Cost Center of Teaching Division

This is a standard-cost center, which manages general and major expenses in a university. The costs incurred at teaching units usually include: (1) payroll expenses paid to lecturers, (2) the costs of stationery, electricity, water and telephone, (3) expenses for professional activities such as purchasing textbooks and reference materials, and (4) expenses of workshops and research. Since payroll expenses cannot be reduced (based on the salary regulations of the government), other costs should be managed effectively and efficiently. Depending on the organizational structure, each university can divide cost centers that belong to teaching division (see Figure 1).

5.2.3. Cost Centers Belonging to Departments

The expenses incurred at these centers are indirect costs. The heads of these centers are department heads who are responsible for the expenses and efficiency of their departments. Generally, the costs incurred at this centers

include: (1) payroll expenses paid to staff; (2) stationery costs; (3) electricity, water and telephone bills; (4) allowances for business trips; (5) maintenance and repair costs ; (6) equipment procurement; (7) construction; (8) staff training costs; and (9) enrollment costs. The structure of cost centers belonging to representative offices, departments is proposed as follows (see Figure 1).

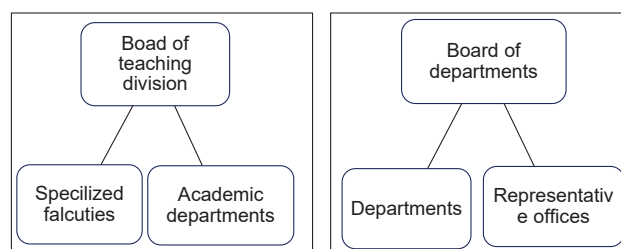


Figure 1: Cost centers of teaching division and departments

5.2.4. Revenue and Profit Centers

Revenue and profit centers include: language-IT centers, consulting centers, and career centers. These centers are financially independent. Each of them has separate revenue, expenses and operation. These centers report their performance annually to the board of administrators. They can be revenue centers or profit centers. Universities should establish standard revenue to ensure effective operation of such centers, while increasing revenue for universities annually. The Figure of structure of revenue and profit centers is shown as follows (see Figure 2).

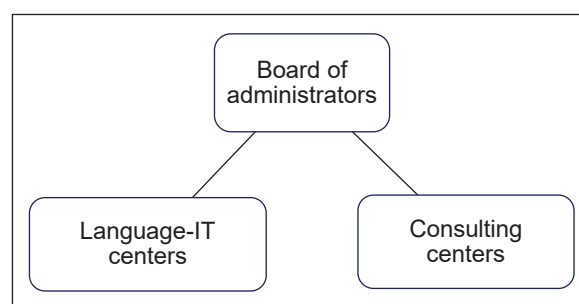


Figure 2: Revenue and profit centers belonging to service centers

In the process of educational integration with the region and the world, the effective use of scarce resources is a challenge for Vietnamese public universities. Scientific research is the key to the success of the university in improving the quality of teaching and learning. In order to attain standards of the most prestigious universities in the world, Vietnamese universities should renovate and refine their programs, courses, teaching methods, and management methods. Responsibility accounting is an effective tool

that should be applied in the process of cost control and performance evaluation of universities' departments.

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