

Implementing Responsibility Accounting in Jordanian Industrial Companies

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Abstract: This study aimed to test the availability of the elements of the application of responsibility accounting in the Jordanian industrial companies listed on Amman Stock Exchange (ASE). In order to achieve this goal, a questionnaire was developed. The questionnaire consisted of 38 questions divided into 6 axes each of which expresses one of the elements of responsibility accounting system. (245) questionnaires were distributed on a sample of the employees working in the Jordanian industrial companies (amounting 76 industrial company at the end of 2015). The number of the received questionnaires that have met the required conditions was 217 with a recovery percentage of 89% from the distributed questionnaires. To test the hypothesis of the study descriptive statistics using Statistical Package for the Social Sciences (SPSS) Software was used where data were subjected to a set of tests in order to ensure the possibility of study's results generalization. However, all these measures, in spite of their importance did not provide sufficient statistically significant evidence regarding the availability of efficient responsibility accounting system in the Jordanian industrial companies where the study has concluded that some of the elements of responsibility accounting system are available in the Jordanian industrial companies such as the existence of organizational structure, the existence of reporting system and the preparation of planning budgets for performance evaluation. The study also concluded the lack of incentives system while the study did not show any statistical evidence regarding planned performance comparison with actual performance and deviations identification and analysis.

Key words: Responsibility accounting, industrial companies, jordan, Statistical Package for the Social Sciences (SPSS), Amman Stock Exchange (ASE)

INTRODUCTION

Responsibility Accounting is considered as an important measurement tool designed to verify that all activities in the company are achieved as planned, so it requires to evaluate actual performance with what is planned and to analyze deviations and the causes of their occurrence and to set the foundations of treatment in order to provide a system for monitoring and evaluating the performance of employees. Thus, the company ensures access to the competitive advantage that company seeking to achieve through the division of a company into sub-units.

Of the reasons that led to the emergence of responsibility accounting is the emergence of huge companies after World War II as these companies have opened branches in many countries of the world which led to a lack of management's ability to control and supervise the activities of companies, prompting them to delegate part of their administrative powers to various departments which led to the emergence of the so-called "decentralization" where the senior management delegate some special powers regarding decision-making to the middle and lower departments of a facility (Abu, 2014).

In order to make responsibility accounting system successful in achieving its objectives, a clear organizational chart that identifies authorities and functions of the various administrative units of a company must be set (Rugby, 2004). Responsibility Accounting is defined as "a style of administrative accounting styles which is based on the elements of organizational units such as departments in terms of the information given in order to make the management able to evaluate the performance of these departments over their efficiency and effectiveness in the use of resources available to them." Thus, the question that the study seeks to answer is: to what extent the basic components of the application of responsibility accounting are available in the Jordanian industrial companies?

The current study aims to shed light on the extent of the application of responsibility accounting in the Jordanian industrial companies and to demonstrate the impact of the application of responsibility accounting on management's functions. The study also aims to show the importance of administrative organization in determining responsibility centers in the Jordanian industrial companies.

Literature review: Lin and Yu aimed to verify the possibility of applying the responsibility accounting in various social and economic systems in China. Results showed the success of the responsibility accounting as a tool to control costs within the Chinese market conditions and its contribution to the reduction of production costs, its ability to improve profitability and its positive role in motivating employees and the reduction of costs and finally achieving the general objectives of the company to reach target profit.

Mohammed (2005) aimed to identify the availability of the elements of the application of responsibility accounting system in the Libyan industrial companies, where the study has included the study of eleven Libyan companies. The study found the presence of clearly defined responsibility centers in the administrative organization and that most of the responsibility centers do not apply standard cost method in preparing planning budgets and there are reports but not on a regular basis. The study also concluded the lack of incentive system in these companies.

Razi (2007) aimed to examine the application of responsibility accounting in the industrial companies in Gaza Strip and the difficulties encountered in their application and the importance of the application of this system in the industrial companies in the Gaza Strip. The study concluded that most of the elements of the application of responsibility accounting are available in industrial companies in the Gaza Strip, where there is a clear organizational structure of these companies but there are no written policies to apply the responsibility accounting.

The study also found that companies in Gaza Strip are applying planning budgets system but without the involvement of employees of the company and the companies compare the planned performance with actual performance to determine deviations and hold those responsible accountable. The study also showed the lack of a unified base for the preparation of reports and the lack of a unified policy for incentives system in the companies in Gaza Strip.

AlMutairi (2011) The study aimed to identify the impact of responsibility accounting on the profitability of the Kuwaiti oil companies from the standpoint of financial managers and accountants who practice the accounting work. The study has concluded a number of results including.

The presence of an impact of the responsibility accounting related to administrative organization on the profitability of the Kuwaiti oil companies, the presence of an impact of the responsibility accounting related to decision-making on the profitability of the Kuwaiti oil

companies and the presence of an impact the responsibility accounting related to performance control on the profitability of the Kuwaiti oil companies.

Okoye (2009) aimed to identify the impact of the application of responsibility accounting and its impact on managerial performance in the Nigerian industrial companies. The study showed that there was no statistically significant relationship between responsibility accounting and administrative performance and that the responsibility accounting has an impact on administrative performance of these companies and recommended to use responsibility accounting system more broadly because of its importance in performance adjustment.

Alshomaly (2013) in his study investigated the relation between performance and the adaption of the responsibility accounting system in the Jordanian medical sector. The study concluded that the, informally, Jordanian medical sector companies are to some extent, adopting the basics of responsibility accounting system in the evaluation of their performance.

Hypothesis: Based on the above and based on previous studies, null hypothesis that the study seeks to test is formulated as follows:

- H_0 : There are no statistically significant elements for the application of responsibility accounting in the Jordanian industrial companies at the significance level ≤ 0.05

MATERIALS AND METHODS

The study used descriptive-analytical approach. Based on previous studies, a questionnaire to test the hypothesis of the study has been developed. The questionnaire included two parts; the first part included exploratory questions designed to determine the characteristics of the study sample while the second part included six axes constituting the elements of responsibility accounting system.

Study population and sample: The study population consisted of all employees working in the senior accounting departments in the Jordanian industrial companies listed on the Amman Stock Exchange (76 industrial companies) at the end of 2015 while the study sample consisted of 230 respondents selected using random sampling approach.

Statistical methods: Statistical Package for the Social Sciences (SPSS) Software was used where data were

Table 1: Reliability analysis-scale (ALPHA)

Variables	Values
Mean	3.9740
Minimum	2.2450
Maximum	4.8210
Range	2.5760
Max./Min.	2.1480
Variance	0.3284

N of cases = 217.0; Reliability coefficients 34 items; Alpha = 0.7236

subjected to analysis in order to verify the possibility of results generalization. Cronbach's alpha test was used to verify the reliability of the study tool (questionnaire). Also, one sample t-test was used to verify the presence of statistically significant differences between actual means and the mean of measurement tool for the accepted degree of impact which amounts.

Reliability test: Cornbach alpha's coefficient was used to verify the reliability of the questionnaire (Table 1). Cornbach alpha was 72.36% which is an acceptable reliability percentage because it is higher than the critical value (70%).

It should be noted that the value of reliability coefficient, whatever the method by which it was calculated is not a goal in itself, nor a result of the study but is calculated to give an idea of extent of reliability of a set of elements when they are submitted to a group in a certain period of time, within similar circumstances to achieve a particular goal.

RESULTS AND DISCUSSION

Analysis of questionnaire's results: The questionnaire consists of 34 questions divided into six groups, each of which covers one of the elements of responsibility accounting, namely: the organizational structure, planning budgets, comparing the actual performance with the planned performance, performance reports of responsibility centers, the reporting system and incentives system. The questionnaire was analyzed at the level of questions. Table 2-7 shows the results of this analysis. The questionnaire was analyzed at the level of groups and Table 8 shows the results of this analysis.

The results in Table 2 showed that the mean of general average of the components of the axis of the organizational structure amounts 4.07 at the significance level 0.000 which means that the general average is bigger with statistically significance than the mean of the degree of neutrality 3, suggesting that there is a statistically significant conformity on the existence of organizational structure as one of the responsibility accounting in the Jordanian industrial companies.

The results also show that there is a clear organizational structure in the company and that there is a clear description of the responsibility center in the organizational structure, there is a competent director of each responsibility center and the appropriate authority is granted to managers to perform responsibilities, where the mean of the answers was 4.86, 4.77, 4.65 and 4.54, respectively at significance level 0.000.

The results appear in Table 2 show that there is a determination of the processes by which activity is accomplished and processes within the single responsibility center are homogenous where the mean of the answers was 3.07 and 3.30, respectively.

From Table 2, it is concluded that there is a statistically significant conformity at the significance level $\alpha \leq 0.01$ by study sample on the availability of organizational structure in the Jordanian industrial companies as one of the elements of the application of accounting responsibility system.

Table 3 shows that the mean of general average has reached 3.419 and the $t = 35.859$ which means that the study sample were neutral with statistically significance at significance level $\alpha \leq 0.01$ with respect to the comparison of actual performance with the planned performance in general in Jordanian industrial companies and did not give a clear opinion whether the Jordanian industrial companies do or do not perform this measure as one of the elements of the application of responsibility accounting system.

The table shows that actual performance is compared with the planned performance to determine deviations, standard cost is considered as the basis to measure the actual performance and actual performance of each responsibility center is measured where the mean of the answers was 4.863.77, 3.605 and 3.562, respectively at the significance level 0.000 for all questions.

The study showed that the respondents of the study sample were neutral and could not give a firm opinion about the extent of the accuracy of the measurement of the actual performance of responsibility centers and the efficiency of the measurement of the actual performance of responsibility centers where the mean of their responses was 3,078 for both questions.

From the above, it can be concluded that there is a comparison between the actual performance and the planned performance as one of the elements of responsibility accounting with statistical significance at the moral level of <0.01 . But there is neutrality with respect to the accuracy and efficiency of the measurement of the actual performance of the responsibility centers.

Table 2: Results of the analysis at the level of the components of the organizational structure axis

Question	SD	Mean	Test value = 3	
			t-value	p-value
There is a clear organizational structure in the company	0.5114	4.86	45.855	0.000
There is a clear description of the responsibility center in the organizational structure	0.9731	4.77	12.083	0.000
There is a competent director for each responsibility center	0.6165	4.65	30.480	0.000
Director gives adequate powers to perform its responsibilities	0.7524	4.54	25.475	0.000
Individuals are accountable according to the responsibilities entrusted to them	0.9258	3.30	17.050	0.000
There is a determination of the processes by which activity is accomplished	0.5114	3.07	45.855	0.000
Processes within the single responsibility center are homogenous	0.9731	3.30	12.083	0.000
General average	0.6165	4.07	30.480	0.000

Table 3: Results of the analysis at the level of the components of the axis of the comparison between the planned performance and actual performance

Question	SD	Mean	Test value = 3	
			t-value	p-value
Actual performance of each responsibility center is measured	0.3580	3.562	11.052	0.000
Actual performance is compared with the planned performance to determine deviations	0.4780	3.770	32.840	0.000
The actual performance is measured accurately and efficiently	0.4975	3.078	23.754	0.000
There is a high efficiency in measuring the actual performance of responsibility centers	0.6590	3.078	16.500	0.000
Standard cost is considered as the basis to measure the actual performance	0.5152	3.608	14.847	0.000
General average	0.3580	3.419	35.859	0.000

Table 4: Results of the analysis at the level of the components of the axis of identification and analysis of deviations

Question	SD	Mean	Test value = 3	
			t-value	p-value
The importance and type of deviation are studied in responsibility centers before starting the analysis	0.5152	3.070	44.057	0.000
Deviations are analyzed for each individual center	0.6165	3.009	30.480	0.000
Person responsible for the occurrence of deviations in each center is determined and held responsible	1.4522	2.958	0.621	0.535
Deviations are corrected when they occur in responsibility centers and propose appropriate means to remedy them	1.4680	2.986	1.895	0.060
Preventive measures are taken to avoid future occurrence of deviations	1.5101	3.147	2.937	0.004
General average	0.9258	3.034	17.050	00.000

Table 5: Results of the analysis at the level of the components of the axis of preparing planning budgets and performance evaluation

Question	SD	Mean	Test value = 3	
			t-value	p-value
Planning budgets are used in the revenues and costs Planning in the responsibility centers	1.0648	4.127	8.589	0.000
Standard costs are used in the costs planning for responsibility centers	0.5450	3.608	15.379	0.000
Planning budgets are reconsidered to cope with changes when necessary	0.9740	3.718	7.851	0.000
scientific method is followed in determining the performance criteria for each responsibility center	1.1890	3.271	5.941	0.000
The costs and revenues are categorized depending on the responsibility centers	1.1810	3.543	7.812	0.000
Employees in various responsibility centers participate in the preparation of the planned performance standards	1.0100	3.562	6.781	0.000
The direct link between costs and revenue items by the possibility of control depending on director's control ability	1.2010	3.608	14.850	0.000
General average	0.7490	3.633	8.070	0.000

Table 6: Results of the analysis at the level of the components of the reporting system

Question	SD	Mean	Test value = 3	
			t-value	p-value
Reports are considered the performance measure of responsibility centers	1.190	4.120	6.990	0.000
Reports combine accuracy and speed of preparation	1.170	3.070	8.350	0.000
Reports consider non-financial aspects in responsibility centers	1.250	3.890	6.780	0.000
Reports consider financial aspects in responsibility centers	0.917	4.050	8.140	0.000
Data contained in the reports are linked to people responsible for their occurrence	1.250	3.720	5.481	0.000
Causes of deviations are determined	1.130	3.080	4.270	0.000
General average	0.927	3.805	7.250	0.000

Table 7: Results of the analysis at the level of the components of the axis of incentive system

Question	SD	Mean	Test value = 3	
			t-value	p-value
Senior management gives financial incentives upon the individuals' achievement of pre-planned objectives	1.2500	3.02	7.580	0.000
Incentives commensurate with the nature of the responsibility assigned to individuals according to organizational structure	0.9254	2.45	8.251	0.000
Incentives are not affected by personal relationships	1.1500	2.06	7.250	0.000
Employees are satisfied with the system of incentives	0.7510	1.85	3.251	0.000
General average	0.7120	2.49	5.710	0.000

Table 8: Results of the analysis of the availability of the elements of the application of responsibility accounting system in Jordanian industrial companies

Element	SD	Mean	Test value = 3	
			t-value	p-value
Organizational structure	0.6165	4.070	30.480	0.000
Comparison between planned performance and actual performance	0.3580	3.419	35.859	0.000
Determination and analysis of deviations	0.9258	3.034	17.050	0.000
Preparation of planning budgets for performance evaluation	0.7490	3.633	8.070	0.000
Reporting system	0.9270	3.805	7.250	0.000
Intensives system	0.7120	2.490	5.710	0.000
General average	0.9124	3.400	21.491	0.000

Table 4 shows that the mean of the general average of the responses of the respondents was 3.128, $t = 17.05$ and $p = 0.000$ which means that the respondents of the study sample were neutral with statistical significance at the significance level ($\alpha \leq 0.01$) regarding the identification and analysis of deviations between planned and actual performance in general in the Jordanian industrial companies and did not give a clear opinion whether the Jordanian industrial companies do or do not perform this measure as one of the elements of the application of responsibility accounting system.

Table 4 shows that study respondents were neutral in all areas of identification and analysis of deviations between the actual and planned performance in the Jordanian industrial companies which may mean that the Jordanian industrial companies do not perform this procedure efficiently.

Table 5 shows that the mean of the general average for the responses of the study sample had reached 3.633, $t = 8.07$ and $p = 0.000$ which means that there is a conformity with is statistical significance at the significance level $\alpha \leq 0.01$ by the respondents regarding that the Jordanian industrial companies are setting up planning budgets to evaluate the performance as a measure for the application of responsibility accounting system.

Table 5 shows that Planning budgets are used in the revenues and costs planning in the responsibility centers, planning budgets are reconsidered to cope with changes when necessary and that the Jordanian industrial companies are using standard costs in cost planning for responsibility centers and there is a direct link between costs and revenue items by the possibility of control depending on director's control ability. Employees in various responsibility centers participate in the preparation of the planned performance standards and the costs and revenues are categorized depending on the responsibility centers.

Thus and based on the results in Table 5, it can be concluded that the Jordanian industrial companies and with statistical significance, prepare planning budgets to evaluate performance as one of the measures of the application of responsibility accounting.

Table 6 shows that the mean of the general average for the responses of the respondents was 3.805,

$t = 7.25$ and $p = 0.000$ which means that there is a statistically significant conformity at the significance level $\alpha \leq 0.01$ by the respondents that Jordanian industrial companies are reporting as a measure of the application of responsibility accounting system.

The results of Table 6 show that the Jordanian industrial companies believe that Reports are considered as the performance measure of responsibility centers, reports consider financial and non-financial aspects in responsibility centers and data contained in the reports are linked to people responsible for their occurrence. The results also showed that the sample was neutral with respect to determining the causes of deviations, speed and accuracy of reporting.

Regarding the incentives system as one of the elements of the application of accounting responsibility system, Table 7 showed that the mean of the general average for the responses of the study sample had reached 2.49, $t\text{-value} = 5.71$ and $p\text{-value} = 0.000$ which means that there is a statistically significant conformity at the significant level $\alpha \leq 0.01$ of the sample on the lack of incentive system in Jordanian industrial companies as a measure of the application of responsibility accounting system.

The analysis results in Table 7 show that incentives do not commensurate with the nature of the responsibility assigned to individuals according to organizational structure; Incentives are affected by personal relationships so the employees are not satisfied with the system of incentives.

The results did not reach conclusive opinion about the incentives granted by senior management upon the individuals' achievement of pre-planned objectives. Based on the results in Table 7, it can be concluded and with statistical significance that there is no incentive system in the Jordanian industrial companies as one of the measures of the application of responsibility accounting.

The study sought to test the availability of the elements of the application of responsibility accounting system in the Jordanian industrial companies. The results of the study concluded in Table 8 that we cannot say for sure and with statistical significance that the elements of the application of responsibility accounting system are available in the Jordanian industrial companies where the

mean of the responses of individuals in the study sample was 3:40 at the significant level $\alpha \leq 0.01$. The study also concluded that some of the elements of responsibility accounting system are available in the Jordanian industrial companies such as the existence of organizational structure, the existence of a system of reporting and the preparation of planning budgets for performance evaluation.

The study also concluded the lack of incentives system, while the study did not reach statistical evidence regarding the comparison between planned performance and actual performance and the determination and analysis of deviations.

CONCLUSION

The results of the study have revealed the existence of a clear organizational structure in the Jordanian industrial companies and that there is a clear description of the positions of responsibility in the organizational structure also that there is a competent director of each responsibility center and that the appropriate powers are granted to the managers to perform responsibilities and actual performance is compared to the planned performance to determine deviations, the standard cost is mainly considered to measure the actual performance and actual performance of each is measured. The results have also revealed that the Jordanian industrial companies use planning budgets in responsibility centers' revenue and cost planning and these planning budgets are reconsidered to face changes when necessary. The results have shown that the Jordanian industrial companies are using standard costs style in determining responsibility centers' cost and that there is a direct connection between cost and revenue according to the

possibility of control by the center's director. Also, Employees are involved in the preparation of the planned performance standards and that the Jordanian industrial companies categorize costs and revenues according to responsibility centers.

However, all these measures in spite of their importance, did not provide sufficient statistically significant evidence regarding the availability of efficient responsibility accounting system in the Jordanian industrial companies.

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