

THE EFFECTIVENESS OF ACCOUNTING INFORMATION SYSTEM ON OPEN BUDGETING IN INDUSTRIAL SECTOR IN JORDAN

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ABSTRACT

The core purpose of this study is to investigate the effectiveness of accounting information system on open budgeting in industrial sector of Jordan. Basically, the study wants to provide a guideline for the industrial sector that if organizations are implementing or thinking about implementing an open budgeting system in the organization then they must have a proper accounting information system. Population of study is employees of the different industrial sector organizations listed on Amman stock exchange. Study incorporates a sample of 119 employees working in accounts departments of organizations. Qualitative data is collected through questionnaires and empirical analysis found that accounting information system is significantly influential for open budgeting. Thus, organizations implementing open budgeting must focus on the efficiency of their accounting information systems.

Keywords: Accounting Information System, Open Budget, Jordan.

INTRODUCTION

Efficient decision making is the foundation behind every successful organization that enjoys increasing levels of profits and revenues. But quick and efficient decision making requires correct, timely and accurate information therefore the need for proper information systems has gained popularity in recent times (Abdalla, 2013). In recent era, the increasing demand of accounting information system has ignited the need for studying various aspects of accounting information systems because accounting information system is to be highly influential for organizational decision making, managerial performance and profitability of the organization (Alnajjar, 2017). Rapid changes in business markets and their activities advancements in information technology, quick changes in production and manufacturing processes, severe market competition, rapidly changing demands of consumers and even unethically manipulative activities and impulsive business dynamics has highlighted the importance and critical role of accounting information systems in the business and economic discourse, specifically its important contribution in managerial decision making (Al-Delawi, 2020).

Accounting Information System

Accounting indicates the controlling of financial and economic activities of the organizations, while Accounting information system (AIS) incorporates the utilization of IT components in accounting processes to control the economic and financial activities of organization (Wilkinson et al., 2000). Unlike traditional accounting activities that just rely on collecting, recording and disseminating data on financial transactions of the organization, accounting information system works as a complete component that transforms raw data into constructive financial information that will help policymakers in their efficient decision making (Salehi et al., 2010).

Open Budgeting

Annual budget is a very important instrument of financial policy, and the process of budget making and information contained in the budget and crucial for transparency. Preparation of budget and its implementation should be open in a way that relevant information must be readily available about how budget is prepared and implemented i.e. the budget circulars and information about budget process must be available openly to all stakeholders (IMF, 2002). Although the concept of open budget is introduced for national budgets but the concept of open budgeting is also under consideration of organizational stakeholders so that all the relevant people can get the required information and it ensures the transparency of the information Appendix.

The transparency of budget, stakeholders' participation and its oversight plays an important role in promoting discipline among stakeholders because it makes easy the identification of utilization of stakeholders' funds (IBP, 2019). Budgeting is among one of the important managerial decisions that requires stakeholders' trust so its transparency is quite essential. While, transparency of budget depends on the readily available information (IBP, 2019). Based on the definitions provided by IMF and IBP, discussed above, current study uses the quality of financial information of organization as a proxy for open budget of organization. Previous studies has contradictory views about the usefulness and effectiveness of accounting information system in organizational performance, its growth, efficient decision making etc. While current study aims at investigating the effectiveness of accounting information systems on open budgeting.

LITERATURE REVIEW

Accounting information system is a tool implemented by organizations to help their management in improving their control on organizational operations and improving firm's performance. AIS incorporate identification, collection, dispensation and delivering of financial information to stakeholders and decision makers at all organizational levels. It is a complete system used for recording financial transactions of organizations and all of its business activities (Trabulsi, 2018). But different authors have varying views about the effectiveness of such system like Gunawardana (2017) indicates that although information systems are quite useful in processing and disseminating effective information for decision making of organizations and play a vital role in their success, but their security is a critical issue. Such systems are often prone to security breaches that results in disclosure and misuse of sensitive information of organization. While Al-Delawi (2020), found a significant positive relationship of accounting information systems on performance and decision making of organizations. Accounting information system provides guidelines to organization's policymakers and provides a complete and clear picture of the organization for future decision making.

Abdallah (2013) indicate that accounting information systems are crucial parts of managerial information systems and are among the most important components of organizations, while organizations vary in implementation of such systems thus enjoy different benefits from such systems. Besides its implementation every organization is not well aware of the effectiveness of such systems in their organizational progress. Abdallah (2013) investigated the implementation of accounting information system on the quality of financial data provided in financial statements of the organizations and found a significant positive relationship between accounting information systems and the quality of organizational financial data. Moreover, it is found that such systems have a significant positive impact on decision making of stakeholders because required information is readily

available to the stakeholders through such systems.

Al-Delawi (2020) indicates that as accounting information system processes financial information of the organization more appropriately thus management and stakeholders can access the required information more easily. Such systems are also found to have positive relationship with managerial performance. Moreover, the availability of the required data through accounting information systems helps improving the transparency and effectiveness of the decisions of policy makers. Soudani (2012) indicates that financial information is the crucial component for organizational financial decisions because such decisions worth huge amounts and stakeholders are quite sensitive about such decisions. But most of the time such decisions lack quality and transparency while management requires significant preference to the quality of information provided to the stakeholders. While accounting information systems help management cope with such issues by incorporating and disseminating all the required information and ensure the effectiveness of decision making by incorporating all the relevant information in timely manner. Trabulsi (2018) states that accounting information system is one of the crucial organizational mechanisms that is important for effective decision making and controlling of organization and its resources. Trabulsi (2018) investigated the impact of accounting information system on organizational performance in terms of its improved quality, reduced costs and efficient decision making. It is important for organizations to improve their financial decisions that result in improved quality while reduced costs because such factors contribute effectively in annual financial budgets as well. Thus efficient accounting information system of an organization helps management improving their decision making and increasing organizational performance by providing financial benefits to the organization.

Soudani (2012) indicates that AIS improves managerial decision making process that eventually benefits all stakeholders but trust of stakeholders improve when they are also involved in the decision making process. Hence an established and well implemented accounting information system fulfills this discrepancy by providing all financial information in systematic manner. Similarly Trabulsi (2018) indicate that information systems are artificially organized systems that are designed and implemented to help improving the decision making process of the organization because in a well established system, all elements interact with each other and information is better processed. So the quality of information provided by such information system is comparatively improved and enhances the effectiveness of decision making process. Moreover, Cimpoeru and Cimpoeru (2015) indicate that recently stakeholders are more focused on the budgets as they want to be acknowledged about the efficient utilization of their funds. Hence the concept of open budgets is being more popular among stakeholders and policy makers. Thus, availability of the required information in a systematic manner is significantly important for the transparency of the budgets and their relevant decision making.

Research Question

In order to investigate the effectiveness of accounting information system on open budgeting, current study proposes following question:

Q1: Do accounting information system helps implementing effective open budgeting in organization by improving the speed, quality and work simplification of financial data?

Methodology and Empirical Analysis

In order to estimate the effectiveness of accounting information system (hereafter AIS) on open budget in industrial sector of Jordan, the study selects a random sample of 250

employees working in the accounts department of different industrial sector firms in Jordan. Thus the two main variables of study are accounting information system (AIS) and Open Budget. Structured Questionnaire adopted from two previous studies (Al-Dalaien, 2018; Al-Dalabih, 2018) was adopted and sent to the selected sample while 119 responses were collected that are used for further analysis.

Effectiveness of AIS is estimated through 3 different factors i.e. its speed, work simplification and quality of information, while open budget is estimated in terms of the quality and access of financial information to the stakeholders. All the four factors are estimated through different questions for each factor measured on a 5 point Likert Scale where,

1= strongly disagree to 5= strongly agree.

The questionnaire consists of 26 questions; 5 each for speed and work simplification, 4 for quality information and 12 for the dependant variable of quality of financial data.

Cronbach's alpha is applied to the data to find out the reliability of the measuring tool, Arithmetic means are calculated to find out the response of the respondents that whether they consider the effectiveness of AIS in open budgets or not and then regression analysis is applied to investigate the impact of different aspects of AIS on quality of financial data. Sullivan and Artino (2013) indicate that parametric tests like ordinary least square can be applied to the ordinal data like a data from likert scale and provides robust results even when the statistical assumption are violated.

Proposed Hypothesis of study

H₀: Transparency of financial information through accounting information system does not help organization in implementing effective open budgeting.

H₁: Transparency of financial information through accounting information system helps organization in implementing effective open budgeting.

ESTIMATION AND RESULTS

Reliability Test

Cronbach alpha is implemented to find out the reliability of the measurement tools. Results are given in Table 1.

| Questions | Cronbach alpha value (%) |
|--|---------------------------------|
| Questions related to speed | 76.13 |
| Questions related to work simplification | 76.5 |
| Questions related to quality information | 84.54 |
| Questions related to quality of financial data | 82.98 |
| Total | 80.04 |

The results in Table 1 indicate that cronbach's alpha value for each variable are quite high i.e. more than 75% thus indicating the high consistency among questions and high reliability of results.

Arithmetical Averages of the Responses

To evaluate the responses of the questionnaires arithmetical averages and standard deviation arecalculated which are below:

Effectiveness of Accounting Information System

Speed

Table 2 indicates the results of arithmetic averages (A.Avg.) and standard deviations (SD) of responses for Speed.

| No. | Item | A.Avg. | SD |
|------------|--|---------------|-----------|
| 1 | Accounting Information System makes the communication easier among branches. | 4.092 | 0.451 |
| 2 | It reduced the time spent on transactions. | 4.042 | 0.439 |
| 3 | It made an integration and consistency among branches faster. | 4.059 | 0.475 |
| 4 | It performs work very fast. | 4.050 | 0.429 |
| 5 | It helps the management to take timely decisions | 4.042 | 0.439 |
| | Arithmetic avg. Rate | 4.057 | |

The results of arithmetic average of individual items as well as its average rate indicate a value more than 4 hence indicating that respondents are mostly agree that Accounting information system improves speed of information.

Work Simplification

Table 3 indicates the results of arithmetic averages (A.Avg.) and standard deviations (SD) of responses for Work Simplification.

| No. | Item | A.Avg. | SD |
|------------|---|---------------|-----------|
| 6 | Accounting information system brings simplification in work. | 4.059 | 0.475 |
| 7 | It stores and retrieves information easily. | 4.017 | 0.450 |
| 8 | It coordinates various business activities. | 4.034 | 0.450 |
| 9 | It eliminates the repetition of paper transactions and storage space. | 4.050 | 0.467 |
| 10 | It brings high efficiency in storage, classification, and analyses of data. | 4.050 | 0.484 |
| | Arithmetic avg. Rate | 4.042 | |

The results of arithmetic average of individual items as well as its average rate indicate a value more than 4 hence indicating that respondents are mostly agree that Accounting information system improves Work Simplification.

Quality Information

Table 4 indicates the results of arithmetic averages (A.Avg.) and standard deviations (SD) of responses for Quality Information.

| No. | Item | A.Avg. | SD |
|-----|--|--------|-------|
| 11 | It provides accurate and valid information. | 4.025 | 0.441 |
| 12 | It makes the information more credible and understandable. | 4.034 | 0.450 |
| 13 | It provides adequate information at right time. | 4.034 | 0.450 |
| 14 | It provides cost effective information. | 4.008 | 0.441 |
| 11 | It provides accurate and valid information. | 4.025 | 0.222 |
| | Arithmetic avg. Rate | 4.025 | |

The results of arithmetic average of individual items as well as its average rate indicate a value more than 4 hence indicating that respondents are mostly agree that Accounting information system produces Quality Information

Open Budgeting

Quality of Financial Data

Table 5 indicates the results of arithmetic averages (A.Avg.) and standard deviations (SD) of responses for Quality of financial data.

| No. | Item | A.Avg | SD |
|-----|---|-------|-------|
| 15 | The company is distinguished by its accuracy in presenting users' needs of financial data | 4.050 | 0.448 |
| 16 | Accurate financial data help the company make financial decisions | 4.101 | 0.439 |
| 17 | Financial data are judiciously prepared to ensure its accuracy and correctness | 3.992 | 0.460 |
| 18 | The provided financial data are consistent with the users' needs in different financial periods per year | 3.992 | 0.496 |
| 19 | The company's financial data are flexible in its use in various aspects and objectives | 4.008 | 0.512 |
| 20 | The company's financial data are clear and uncomplicated | 3.891 | 0.501 |
| 21 | The company's financial data are easily understood among its various users | 3.958 | 0.511 |
| 22 | The company's financial data are inclusive for all the financial aspects that users need in the decision-making process | 4.076 | 0.523 |
| 23 | The financial data are provided in an appropriate time so they reach the decision maker before losing their ability to influence the taken decision | 4.000 | 0.487 |
| 24 | The company's financial data are adopted in the comparison with other companies within the same sector | 4.017 | 0.504 |
| 25 | The financial data are registered and examined by registering, analyzing, tabulating and classifying them | 4.050 | 0.502 |
| 26 | Financial data that are easily saved, are easily retrieved at any time | 4.101 | 0.494 |
| | Arithmetic avg. Rate | 4.020 | |

The results of arithmetic average of individual items as well as its average rate indicate a value more than 4 hence indicating that respondents are mostly agree that Quality of financial data helps in an open budgeting through providing sufficient, accurate and timely information.

Linear Regression

Following the guidelines provided by Sullivan and Artino (2013) linear regression is applied in order to find out the impact of three factors of accounting information system on quality of financial data. For this purpose, the values of summated likert scale are used as observations for variables under study. Thus, the proposed model is as follows:

Quality of Financial Data = $\alpha + \beta_1$ Speed + β_2 Work Simplification + β_3 Quality Information
While estimation results are as follows:

| Variable | Coefficient | St.Error | t-stats | p-value |
|---------------------|--------------------|-----------------|----------------|----------------|
| C | 0.631769 | 0.529559 | 1.193009 | 0.2353 |
| Speed | 0.286759 | 0.076104 | 3.767970 | 0.0003 |
| Work Simplification | 0.256052 | 0.067214 | 3.809491 | 0.0002 |
| Quality Information | 0.295499 | 0.070662 | 4.181882 | 0.0001 |

The results in Table 6 indicate that all the coefficients of independent variables are having positive values and p-value for each variable is indicating the significance of relationship (at 1% significance level) of independent variables with the dependent variable. The result indicates that the factors of accounting information i.e. speed; quality information and work simplification has positive influence on the quality of financial data. It means improved speed, work simplification and quality information results in improving the quality and accuracy of financial data.

CONCLUSION

Current study investigates the effectiveness of accounting information system on open budgeting. The effectiveness of accounting information system is measured through its efficiency in improving the speed of information, quality of information and work simplification. While open budgeting is measured through the quality of financial data because literature indicates that the accuracy and availability of financial data for its stakeholders is sufficient for open budgeting. The results of study indicate a positive significant relationship between dependant and independent variables. It is found that accounting information systems are effective in implementing open budgets because they improve the quality and speed of information as well as they create work simplification, so the resulting financial data from accounting information systems is of high quality and accuracy. Moreover, data is readily available for stakeholders that are an important feature for open budgets.

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APPENDIX [QUESTIONNAIRE]

Impact of Accounting Information System (AIS) on Profitability of Jordanian Banks
Please give your opinion regarding the role played by AIS in your company on a five point rating scale as 1 stands for strongly disagree, 2 stands for disagree, 3 stands for neutral, 4 stands for agree, 5 stands for Strongly agree respectively.

| No. | Statement | 1 | 2 | 3 | 4 | 5 |
|-----|--|---|---|---|---|---|
| | Speed | | | | | |
| 1 | Accounting Information System makes the communication easier among Branches. | | | | | |
| 2 | It reduced the time spent on transactions. | | | | | |
| 3 | It made an integration and consistency among branches faster. | | | | | |
| 4 | It performs work very fast. | | | | | |
| 5 | It helps the management to take timely decisions | | | | | |
| | Work Simplification | | | | | |
| 6 | Accounting information system brings simplification in work. | | | | | |
| 7 | It stores and retrieves information easily. | | | | | |
| 8 | It coordinates various business activities. | | | | | |
| 9 | It eliminates the repetition of paper transactions and storage space. | | | | | |
| 10 | It brings high efficiency in storage, classification, and analyses of data. | | | | | |
| | Quality Information | | | | | |
| 11 | It provides accurate and valid information. | | | | | |
| 12 | It makes the information more credible and understandable. | | | | | |
| 13 | It provides adequate information at right time. | | | | | |

| | | | | | | |
|----|---|--|--|--|--|--|
| 14 | It provides cost effective information. | | | | | |
| | Quality of Financial Data | | | | | |
| 15 | The company is distinguished by its accuracy in presenting users' needs of financial data | | | | | |
| 16 | Accurate financial data help the company make financial decisions | | | | | |
| 17 | Financial data are judiciously prepared to ensure its accuracy and correctness | | | | | |
| 18 | The provided financial data are consistent with the users' needs in different financial periods per year | | | | | |
| 19 | The company's financial data are flexible in its use in various aspects and objectives | | | | | |
| 20 | The company's financial data are clear and uncomplicated | | | | | |
| 21 | The company's financial data are easily understood among its various users | | | | | |
| 22 | The company's financial data are inclusive for all the financial aspects that users need in the decision-making process | | | | | |
| 23 | The financial data are provided in an appropriate time so they reach the decision maker before losing their ability to influence the taken decision | | | | | |
| 24 | The company's financial data are adopted in the comparison with other companies within the same sector | | | | | |
| 25 | The financial data are registered and examined by registering, analyzing, tabulating and classifying them | | | | | |
| 26 | Financial data that are easily saved, are easily retrieved at any time | | | | | |