The Effect Of Application Computer-Based Accounting Information System (CBAIS) On The Quality Of Accounting Information And Managerial Performance Of Sugar Industries In Indonesia

Asep Darmansyah, Tettet Fitrijanti

Abstract: The study aims to determine characteristics of Indonesian sugar industries, as well as the influence of the implementation of computer-based accounting information system (CBAIS) to the quality of accounting information and managerial performance of the sugar industries of Indonesia. The research method was a survey with the research type was a descriptive and verificative. The research population were sugar industries in Indonesia. Data consists of primary and secondary data. Data were analyzed making use of linear regression. This study shows that the sugar mills/industries of Indonesia are mostly located in Java. Most of the sugar industries either in Java or outside Java are owned the central government in the form of state-owned enterprises and the rest is privately owned. Most of them making use of a business area with a mixed pattern between the right to cultivate and the right to build. Most of sugar industries gained canes in two ways namely planted by its company and bought from farmers. Then the first variable, the application of CBAIS of sugar industries is still categorized sufficient, which indicates the condition is not very bad or not very good. The others, the quality of accounting information of sugar industries is good category and its managerial performance is also good. The three variables above have not shown the ideal category namely is very good category. The application of CBAIS significantly affects on the quality of accounting information and the accounting information quality significantly influences on managerial performance of sugar industries.

Index Terms: Accounting Information, Accounting Information System, Cane, Computerized, Managerial Performance, Sugar Industry.

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1 INTRODUCTION

The granulated sugar or white sugar is one of the nine staple food Indonesian society, which is consumed as a sweet flavoring to food or drinks. In addition, granulated sugar is also a raw material in the food and beverage industries. The mention of granulated sugar more often simplified by simply referred to "sugar", therefore the next even this article uses the term of "sugar" for the granulated or white sugar. Currently, to meet the needs sugar of private consumption as well as food and beverage industries, can not be met from domestic production. Indonesia faces a variety of constraints to meet the needs of the domestic consumption. Whereas Indonesia has a comparative advantage in the form of natural resources, human resources and climate are suitable for sugar cane cultivation. Sugar cane plantation business and sugar industry in Indonesia has started since the Dutch colonial era. But the Indonesian sugar industries in its development face some problems. According Khudori (2009) in Yusbar Y. [1],

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Indonesian sugar history shows that the Indonesian sugar industries have experienced the golden era of 1930 to 1940 with high sugar cane production and the second largest exporter in the world. But now Indonesia turned into a second sugar importer after Russia. According Syafa'at, et al. [2], the issues of national sugar industry still revolves around the gap between low productivity, in-efficiency of a sugar factory, and fewer sugar cane plantation area are faced with increased demand for sugar and import sugar. The sugar industries profile is fixed with the old condition that is not efficient, which is characterized by government policies that are not integrated [3]. Due to inefficiency sugar industries, from year to year the number of the sugar industry continued to decline. According to Dewan Gula Indonesia (the Indonesian Sugar Council) [4], from as many as 179 sugar industries in 1930, now (2013) only of 61 sugar industries in Indonesia, they consist of 52 as state-owned enterprises and 9 as private companies. Sugar demand is increasing from year to year due to population growth, economic recovery, and development of food and beverage industry. However, the Indonesian sugar industries productivity is sagging. So it becomes a problem that has lasted a long time, since the Indonesian sugar industry declined from one of the world's sugar producer to become an importer of sugar [1]. The government is targeting self-sufficiency in 2014 with a production target of 5.7 million tonnes to meet the needs of community and industry needs. They had been being launched the National Sugar Industry Revitalization Program that implemented through revamping existing sugar industry and development of new sugar mills. Revitalizing existing sugar industry implemented through "intensification of land" with the increase in land productivity and sugar industries productivity where production in 2009 amounted to 2.55 million tonnes only. New sugar mills revitalization implemented through the "land extensification " of 350,000 hectares with a number of sugar industry of 10

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@15.000 TCD (tons crushed per day) or 25 @ 6.000 TCD [5]. Meanwhile, the Minister of State Owned Enterprises Dahlan Iskan, said that this year's (2014) his ministry has revitalized 12 sugar mills from 22 sugar mills owned by PT Nusantara Plantation which unhealthy condition. Dahlan Iskan explained, the revitalization of 12 sugar mills prioritized in improving management. According to him, the poor management of sugar industries of Indonesia to be the main cause of the national sugar requirement is not fulfilled. "The issue is not on the machine. Using new machine, if management is bad, it will be able to cause failure", he said [6]. In-efficiency resulting in productivity and profitability of sugar companies is low, so that Indonesia can not compete with the other countries in the world. Currently the price of domestic sugar production can not compete with the price of imported sugar. As of June 2012, the price of sugar in the domestic market is Rp . 9,300 per kg, while imported sugar (refined sugar) costs only Rp. 4000-5000 per kg. As an agricultural country, Indonesia should be able to become the world sugar exporter , but now even Indonesia became the second sugar importer after Russia. Of course this is a challenge for management to be able to set the price of sugar is more competitive in the domestic market and the global market. Revitalization Program of the National Sugar should be a planned and integrated program, because the program is cross-sectoral, and have a major impact both economically or politically. Based on the above, the National Sugar Industry Revitalization Program is not enough to just touch the technical aspects only, but also needs revamping the aspects of managerial. This national sugar revitalization program is only focuses on the intensification and extensification of land, establishment and modernization of machinery / equipment for sugar. Therefore , it should also be noted managerial performance through improvement of information systems and technologies, one of which is Computer-Based Accounting Information System (CBAIS). In many ways, the performance of managerial efficiency due to the manager's knowledge of the accounting information system (AIS) and CBAIS is applied, which impact on the quality of accounting information for management decision making. Computer-Based Accounting Information System (CBAIS) provides benefits to the company and the ability to balance the challenges and reduce the communication gap. According to Dahlan Iskan, a lot of people said that to fix the sugar factory, the machines must be replaced with new all, because the engine was old, but the government did not fully believe it. "We have more confidence to reorganize its management and is also important that the plant is open to farmers, do not deceive farmers, cheat its rendemen, the cost of planting and so on, and it was implemented this year and the results were outstanding, " he said. Moreover, Dahlan said, if the previous year there were 22 sugar mills were still a loss, now only one factory that loss, located in South Sulawesi. It was, said Dahlan, because the government proves that the sugar mills can rise without investment of new machinery. " Thus, what is done by the sugar mills with the procedure will be very efficient to sugar mill," he said [7]. Based on the above description, the problems of this research can be formulated as follows:

1) How does the influence of application computer-based accounting information system (CBAIS) on the quality of accounting information sugar industries of Indonesia.
2) How does the influence of the quality of accounting information on managerial performance sugar industries of Indonesia

2 LITERATURE REVIEW

The most important system of information which has been used in management of business organization is accounting system of information. Accounting information system (AIS) of is a strict formalism information system which is in the most direct way had influence on common quality, especially reliable accounting facts, indexes and information on which we build business decisions of user from and outside of company [8]. Accounting information system is a system that provides accounting information for management. Therefore, accounting information system is an internal control for all activities that occur in a variety of procedures and business processes, covering the areas of production, marketing, finance and human resources. Furthermore, according to Mihailovic, et al., [8], accounting information with their qualitative characteristics, especially relevance and reliability, are the most dynamic and realistic part of the information system in company. Therefore, the accounting information, especially those that come from management accounting, are considered as very important resource and as principal instrument in process of decision making at all hierarchical levels of management. According to Soudani, Siamak Nejadhasseini [9], AIS is the whole of the related components that are working together to collect, store and disseminate data for the purpose of planning, control, coordination, analysis and decision making. Weydan [10] in the study to identify the affect of applying accounting information systems on increase the profitability, and reduce the cost of banks in Jordan. The most important results that banks rely on accounting systems, by linking all the banking services of banks each department separately and linking between all departments at the same time, reliance on accounting information systems to satisfy the clients through the implementation of banking clients as quickly and with minimal effort, Thus achieving a competitive advantage among banks, also the some of the actors in the commercial banks that Banks attempt to provide accurate information by showing the financial position for the clients and provide electronic access by the client to their account and make any deposit, withdraw and transfer money using the full connection between the electronic accounting systems. The most important recommendations of the study to provide stafftrained and fully aware of the accounting information systems and taking into consideration the culture of the client bank, which in turn leads to increased competition and attract clients and thus speeding up the implementation of banking services and not to loss of time and then reduce cost. Bawaneh [11], conducted the study to examine the effects of information technology and accounting information system on the quality of accounting university education for Jordanian financial institutions working in Jordan and listed on Amman Stock Exchange in 2010, because these institutions are recruiting the major part of fiesh accounting university graduates by showing the advantages of using information technology and its importance in developing the accounting information system. The study, also, investigates the importance of information technology in developing the accounting information system and then the expectation ability of the quality of accounting university education. It was shown that employers do recognize that advances in information technology and the developing of

accounting information system have a positive interaction effect on the quality of accounting university education. Furthermore, the respondents believed that more applications of information technology in accounting university education, and training hours for accounting students are needed in order to increase the quality of accounting university education and to bridge the gap between theory and practice in accounting education. Jamil Abdallah, Ahmad Adel [12] found that there is a presence of an impact when using the accounting information systems on the quality of financial statements submitted to the Income Tax and sales Department in Jordan, the study recommends to focus on the development of the devices used in the department, train and development of the staff on an ongoing basis to enable them to continue to perform their jobs and improve the quality of financial statements in the department. A well-designed computerized accounting information system (CAIS) can add value to the organization by : improving the quality and reducing the costs of products or services by reducing the amount of wasted materials, improving efficiency of operations by providing more timely information, improved decision making by providing accurate information in a timely manner, and sharing of knowledge by providing competitive advantages. So the information produced by well-designed CAIS can improve decision making [11], [12]. Sulub, Saed Ahmed, [13] investigated the impact of computerized accounting information systems (CAIS) on reducing costs in Somaliland business companies; a case of Telesom Company and Shaam Construction Factory. The study findings showed that there is a significant impact for computerized accounting information systems on reducing costs at Telesom Company and Shaam Construction Factory. It illustrated a positive correlation between each item of accounting information systems (Human resource, Hardware and Equipment, Software, and procedures) and the reduction of costs at Telesom Company and Shaam Factory. The study recommends retaining the highest levels of computerized accounting information systems through keeping up human resources, hardware and equipment, software, and developing work procedures with the development of computerized accounting information systems. And also recommends making further studies to know the impact of CAISs on reducing costs in other companies and sectors. El-Dalabeeh, Abd el-Rahman kh; Alshbiel, Seif Obeid [14] identified the role of computerized accounting information systems (CAIS) in reducing the costs of medical services provided at King Abdullah University Hospital. The study findings showed that there is a significant role for computerized accounting information systems in the reduction medical services costs at the hospital. It illustrated a positive correlation between each component of accounting information systems (human resources, hardware and equipment, software, databases, and procedures) and the reduction of medical services costs at the hospital. The study recommendations included retaining the highest levels of computerized accounting information systems through keeping up with the latest developments in the fields of software, hardware and databases, conducting regular maintenance which helps raise the level of services provided to patients at King Abdullah University Hospital, developing work procedures along with the progress of computerized accounting information systems. Darmansyah, Asep; and Tettet Fitrijanti [15] found solutions for problems related to managerial style, implementation of CBAIS on managerial performance of Indonesian sugar industries. The research resulted that the implementation of CBAIS have a significant positive effect on managerial performance of Indonesian sugar industries. Influence directly and indirectly the application of computer-based AIS on managerial performance of Indonesian sugar industries by 35.5%. According to the above, and based on the findings of previous researches, this study hypotheses can be arranged as follows:

Hypothesis I: Application of computer-based accounting information system (CBAIS) significantly affects on the quality of accounting information sugar industries of Indonesia

Hypothesis 2: The quality of accounting information significantly affects on the managerial performance sugar industries of Indonesia

3 METHODOLOGY

The study aims to determine the characteristics of Indonesian sugar industries, as well as the influence of application computer-based accounting information system (CBAIS) to the quality of accounting information and managerial performance of Indonesian sugar industries. The research using a survey method and the type of this research was descriptive and verificative. The study population was the sugar industries in Indonesia as many as 52 industries of state-owned enterprises. The unit of analysis was the sugar industries. Research data was composed of primary and secondary data. Primary data were obtained directly from respondents through questionnaires via electronic mail / postal mail and or telephone interview. A total of 52 questionnaires were distributed and 31 were received back the which equals to (59.62 %) which is considered good and acceptable. At each company (sugar industry) was taken respondents as much as two people consisting of accounting and finance manager, and director/administrator of the sugar industry. Secondary data was obtained through a literature study and via internet. The first research purpose, the study describes the profile of Indonesian sugar industries and the state of each variable. Second, It examines the relationship inter variables through hypothesis testing. To describe the profile of Indonesian sugar industries and the state of each variable are used descriptive analysis. To determine the state of each variable used as categories assessment presented in Table 1.

Table 1. *Categories Assessment of The Research Variables*

No	Real Score on Variables			Category
	CBAIS (X)	Quality of Accounting Information (Y)	Managerial performance (Z)	
1.	2604 – 3100	2604 – 3100	2473 - 2945	Excellent
2.	2108 – 2603	2108 – 2603	2002 – 2472	Good
3.	1612 – 2107	1612 – 2107	1531 – 2001	Sufficient
4.	1116 – 1611	1116 – 1611	1060 – 1530	Ugly
5.	620 – 1115	620 – 1115	589 – 1059	Very ugly

To examine the relationship inter variables through hypothesis testing, data were processed and analyzed using linear regression by the computer program SPSS (Statistical Program for Social Science). There are two models of linier

regression equation. First, model the effect of application computer-based accounting information systems (X) on the quality of accounting information (Y) sugar industries of Indonesia with the following :

$$Y = a + b X \qquad (1)$$

Second, linear regression model the influence of accounting information quality (Y) on managerial performance (Z) by the equation as follows:

$$Z = a + b Y \qquad (2)$$

4 RESULTS AND DISCUSSION

4.1 Profile of Indonesian Sugar Industries

In this study, Indonesian sugar industries are classified into several criterias based on the location of a mill, company ownership, management, status of land, and ownership of sugar canes. The location of Indonesian sugar industries as much as 79.31 % are in Java and 20.69 % are located outside Java. The location of the sugar industries in Java are scattered in several areas of West Java, Central Java, Yogyakarta and East Java, while outside Java are located in Lampung, South Sumatra, North Sumatra, Gorontalo, and South Sulawesi. Operational state of sugar industries in Java and outside Java are not much different. Both face inefficiencies due to machinery and equipment used are too old, and implementation of a computer-based accounting information systems (CBAIS) are also already out of date. Furthermore, based on the ownership of the company, as much as 91.38 % of sugar industries in Java and outside Java are owned by a government or state-owned enterprise (SOE) and only 8,62 % are owned by the private sectors. Either the sugar industries owned government or private, both are as a limited company. State-owned sugar industries are more heterogeneous compared to private sugar industries, namely are scattered in various regions across the archipelago with various sizes and production capacities. In addition, the state-owned sugar industries have advantages over private sugar industries, which have human resources more experienced than the private sugar industries. In terms of ownership of land used for business, Indonesian sugar industries consist of three types of right to cultivate (RTC), right to build (RTB) and the mix between RTC and RTB. As much as 18.97 % of the sugar industries using the RTC, 25.86 % using the RTB and most of them (55.17 %) use a system of land with a mixture of RTC and RTB. Last of ownership of sugar canes, namely that of sugar canes as raw material for the sugar industries are obtained three ways. First, sugar canes planted and managed by company (self-owned sugar cane), second, sugar cane planted and managed by farmers (purchase to farmers) and third, a mix between the both. The research results show that as many as 86.21 % of sugar industries gain sugar canes with a mixture system namely self-own and purchase to farmers, then 10.34 % of the sugar industries obtain sugar canes from self-own, and 3.45 % of the sugar industries purchase to farmers.

4.2 The State of Variables

Failure IPO (Initial Public Offering) of SOEs in 2013 was a stark warning that the SOEs must be able to meet the expectations of stakeholders and be able to develop innovation, efficiency, and increasing service to customers. It would require no small amount of capital. Inevitably, the SOEs currently require a capital expenditure to develop quality products and services. Unfortunately, investment or additional capital from the state is very difficult to be realized. One of the significant capital expenditures for SOEs is investing in information and communication technology system (ICT) that can improve the performance of the company. Unfortunately , information system investment in the SOEs has been less effective and less according to business needs and too dependent on ICT vendors that service quality is not good [16]. ICT investment of SOEs particularly computerized accounting information system should be able to integrate sub-systems or components of both physical and nonphysical interconnected and cooperate each other in harmony to process transaction data related to financial issues into financial information. This is in accordance with Mc Leod and Schell premise that the accounting information system must be able to collect data and to explain the activities of the company, transforming data into information and provides useful information to users inside and outside the company [16]. One of the components in a computer-based accounting information system (CBAIS) is a human resources (HRs). HRs are a user of the system, therefore the system will be good and bad depending on the quality of human resources operate the accounting information system. Managers and other HRs should have knowledge computer-based accounting information system in the sugar industry include accounting knowledge and information system. Good financial management and transparent requires knowledge and skill in applying accounting information system. The ability of the accounting information system to produce highly qualified accounting information affecting on managerial performance of industry concerned. The research result shows that the state of implementation of the computer-based accounting information system (CBAIS) on the Indonesian sugar industries obtain the real score of 2,038 as shown in Table 2. Based on the assessment category in Table 1 for variable application of CBAIS, the value of this score indicates that the application of CBAIS at Indonesian sugar industries is still included in sufficient category. This result indicates that the application of CBAIS at Indonesian sugar industries has not met the excellent category. This is because the sugar industries are still using outdated AIS components such as hardware, software, brainware, procedure and communication network technology. In this case, the weakest components are the brainware and network information technology. The research result of the variable quality of accounting information on the Indonesian sugar industries obtains the real score of 2,116 as presented in Table 2. Based on the assessment category in Table 1 for variable quality of accounting information, the value of this score indicates that the quality of accounting information generated Indonesian sugar industries is good category. The weakest criteria of quality of accounting information are relevance and reliability. Although the quality of accounting information is good, the management should improve the quality of accounting information into excellent category especially by enhancing the relevance and reliability of information, in addition to other criteria those are included "can be compared", "consistency", and "understandable". The real score of managerial performance is 2,245 as presented in Table 2. Based on the assessment category in Table 1 for variable managerial accounting, it indicates that the managerial performance of

Indonesian sugar industries is good category. This result proves that managerial performance of Indonesian sugar industries has not met ideal category that is excellent. The weakest dimension of managerial performance is the control aspect. Managerial performance can be improved be integrated in various dimensions such as planning, organizing, coordinating, monitoring, representation, investigation, and assessment, and especially suppression of the control.

Table 2 . *Scoring and Category of Variables*

No	Variables	Question items	Expected score	Real score	Category (criteria based on Table 1)
1.	Application of CBAIS	20	3,100	2,038	Sufficient
2.	Quality of Accounting Information	20	3,100	2,116	Good
3.	Managerial performance	19	2,945	2,245	Good

4.3 Effect of Application Computer-Based Accounting Information System (CBAIS) on The Quality of Accounting Information
Further research result of the regression analysis namely the effect of the application computer-based accounting information system on the quality of accounting information. It shows adjusted R square-value of 0.125 , which means 12.5 % of variation in the quality of accounting information (variable Y) can be explained by variations of the application of computer-based accounting information system (variable X), while the remaining 87.5 % is explained by other variables. F value is computed at 5.281 with probability 0.029. Because the probability is smaller than 0.05 , so the regression model can be used to predict the quality of accounting information, or it can be said that the application of computer-based accounting information system significantly affect on the quality of accounting information. Based on the result mentioned above can be made linear regression model the effect of application computer-based accounting information systems (X) on the quality of accounting information (Y) sugar industries of Indonesia with the following :

$$Y = 2.518 + 0.208 \ X \qquad (3)$$

This means that if there is an increase of 10% quality of the application computer-based accounting information system (X) will have effect on improving the quality of accounting information (Y) by 2.08%. The above equation model provides valuable information that the government should not hesitate to make capital expenditures to develop quality products and services through investment in advanced information and communications technology system (ICT). Provided that such investment is able to integrate sub-systems or components in the CBAIS for improving the quality of accounting information.

4.4 Effect of Accounting Information Quality on Managerial Performance of Indonesian Sugar Industries
Furthermore, based on regression analysis, adjusted R square value is 0.542 , which means that for 54.2 % of the variation in corporate managerial performance (variable Z) can be explained by the variation of the variable quality of accounting information (variable Y), while the remaining 45.8 % is explained by other variables. Analysis of variance shows F value calculated at 36.487 with a probability of 0.000 . Because the probability is smaller than 0.05 , the regression model can be used to predict the performance of managerial company or it can be said that the quality of accounting information (variable Y) significantly affect on the managerial performance Indonesian sugar industries (variable Z). Based on the result mentioned above can be made linear regression model the influence of accounting information quality (Y) on managerial performance (Z) by the equation as follows :

$$Z = 0.478 + 0.710 \ Y \qquad (4)$$

This means that if there is an increase of 10 % of the quality of accounting information (variable Y) will give the effect on increasing of managerial performance (variable Z) of 7.10 %. The above equation model provides a stronger argument about the benefit of capital expenditure to develop quality products and services in information and communication technology system (ICT) that is capable of integrating sub-systems or components in the CBAIS thus improving the quality of accounting information. Then, the further positive impact is the improvement of managerial performance of Indonesian sugar industries, which is the basis for victory in the competition enters an increasingly competitive international market.

5 CONCLUSSION AND RECOMENDATION

1) Application of CBAIS at Indonesian sugar industries is still sufficient category which indicates the condition is not very bad or also not very good. This is because the sugar industries of Indonesia still use obsolete or outdated components of CBAIS, especially the brain-ware component and communication network technology.
2) The quality of accounting information generated CBAIS Indonesian sugar industries is good category. This category has not shown excellent category as accounting information quality criteria required in modern business. The critical point of the quality of the accounting information which causes this condition is less relevance and reliability of information. Improving the quality of accounting information has to be more focused on improving both in order to get more relevant and more reliable information.
3) Category of managerial performance Indonesian sugar industries is also good category. Managerial performance should be improved into excellent category on various its dimensions namely planning, organizing, coordinating, monitoring, representation, investigation, assessment, and especially in the aspect of control.
4) As much as 12.5 % variation in the quality of accounting information resulted by variation of application computer-based accounting information system (CBAIS).
5) Application computer-based accounting information system significantly affects on the quality of accounting information.
6) As much as 54.2 % variation in the managerial performance of Indonesian sugar industries caused by variation of the quality of accounting information.

7) The quality of accounting information significantly affects on the managerial performance of the Indonesian sugar industries.

8) Improving the quality of computer-based accounting information system (CBAIS) will result an increase the quality of accounting information and further improve performance of managerial Indonesian sugar industries.

9) Improve quality of application computer-based accounting information system (CBAIS) should be integrated in various components of information system including hardware, software, brain ware, procedure and communication network technology, with emphasis on the weakest components namely brain ware and network information technology. Improving the quality of brain ware done through training of personnel for understanding and to be expert to use CBAIS well and properly to create harmony in the CBAIS. Increasing information network technology done through the development of on-line information system linking among location a mill, plantations, branch offices and headquarter, or among various departments within a sugar industry.

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