



Digital Accounting Application in Oil Palm Plantation in Indonesia

Muhammad Irsan Nasution

Ilmu Hukum, Universitas Pembangunan Panca Budi, Medan, Indonesia

<http://dx.doi.org/10.47814/ijssrr.v5i6.320>

Email: irsannst@gmail.com

Abstract

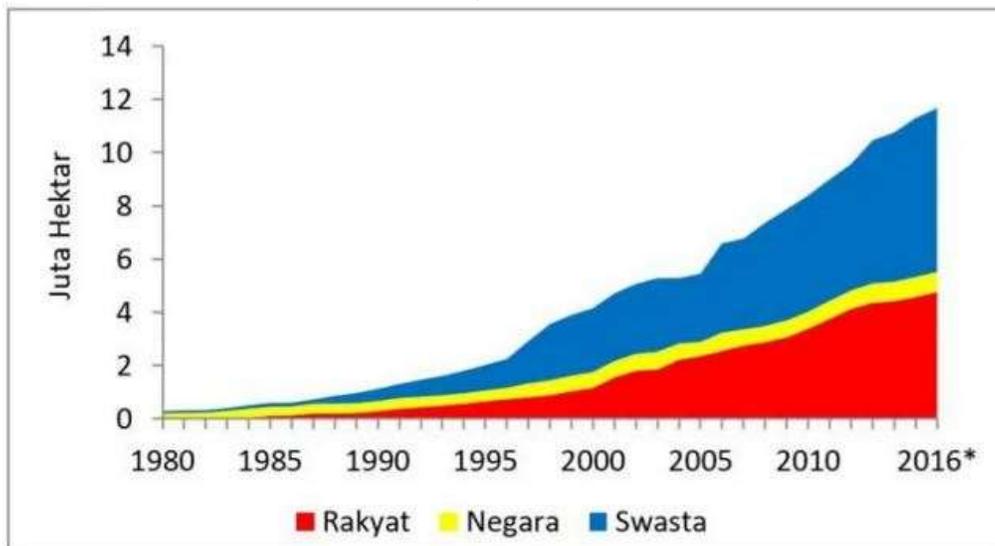
This study is a case study conducted in an Indonesian oil palm plantation company. The study aims to understand the digital accounting application in oil palm plantations. The company has changed its recording systems in the plantation area from manual systems using paper to digital systems using applications and gadgets. This study reveals that the company is committed to applying digital accounting systems and, as much as possible, will do paperless administration in the plantation area. The analysis method is descriptive research, namely by collecting and interpreting the data obtained to provide information. In this study, we observe digital technology's use on a palm oil plantation, fingerprint technology for attendance on a palm oil plantation that is directly integrated with the existing payroll system. It is also integrated with the ERP system that is for recorded labors' attendance and calculates their wages and premiums. It helps the company to make faster, efficient, and more accurate reports. There is also the use of Mobile Harvesting System to record harvest density figures, the yield being harvested, and replicate tools to connect and communicate with the ERP systems. Therefore, using digital technology in plantations for accounting and other purposes much helps accelerate the data collection process. Its accuracy also helps to eliminate fraud effectively, efficiently, and accurately.

Keywords: *Digital Accounting; Oil Palm Plantation*

1. Introduction

The development of plantations in Indonesia, both with new land clearing concept, conversion from other crops such as rubber to oil palm, and rejuvenation of old oil palm plants to new oil palm trees, continues to occur nowadays. Indonesia's oil palm plantations increased from around 300 thousand hectares in 1980 to around 11.6 million hectares in 2016 (<https://gapki.id/news/3971/perkembangan-mutakhir-industri-minyak-sawit-indonesia> accessed on 11th December 2020 20:51) (see Table 1). The times have also required a change in the administration system from a manual system to a digital system.

Table 1
The development of Indonesia's oil palm plantation area from 1980 to 2016 (Ministry of Agriculture, 2015) estimates



Plantations located in a remote location, the quite far distance from the plantation to the administrative center (head office), usually have an unstable supply of electricity, slow development of data technology and the internet to reach remote areas. The limited ability of human resources is also a challenge in the development of administration in plantations.

The trend of middle and upper-scale plantation companies in Indonesia has changed a lot. They have started using digital applications for their administration and accounting systems. However, with the behavior in plantations that is still traditional and slow in technological development, it takes maximum effort to realize digital accounting in plantations.

The slow development of data networks and the internet in plantation areas is also a challenge to overcome. The scattered location of plantations in remote areas and most of the plantation activities carried out in the field that has not been reached by the data network and internet are challenges in implementing the digital accounting system in plantations.

Historical Recording in Plantation Area

Before switching to digital technology, the company used manual recording systems in the field, for example, manually recording workers' attendance in a mobile timesheet. They also recorded the harvest density figure containing fresh fruit bunches' information to be harvested the following days in a harvest density figure sheet. For harvesting, they recorded harvest results in a harvest book and a form called Oil Palm Delivery Sheet as the form brought by the transporter to the mill.

Research Purposes

The purpose of this study is to analyze digital accounting application in an oil palm plantation in Indonesia.

2.Literature Review

2.1.Digital Accounting

Digital accounting, or e-accounting, as a suitable analog, refers to the representation of accounting information in digital format, which can then be manipulated and transmitted electronically. Digital accounting does not have a standard definition but refers to accounting changes due to computing and network technology (Ashutosh Deshmukh, 2006).

2.2.Internet and e-Commerce

The advent of the internet and e-commerce/ e-business continues and, in many ways, accelerate the trend. Internet and e-commerce are changing intra and inter-business processes and challenge the established foundations of business practice. All business areas, including finance and accounting, were under scrutiny as the dot com business boomed. The rise and fall of the electronic revolution are remarkable. The hype and hysteria surrounding the technology's novelty have been saved by the costs and benefits being more realistic. A better analysis from this point of view can be done for changes and constants in accounting (Ashutosh Deshmukh, 2006).

E-commerce emergence supports large and cross-border transactions. Therefore, it is necessary to change the accounting system to ensure that the accounting system's outputs can be made in a more timely manner. The need for on-line and real-time systems will present itself. With the right systems, new and up-to-date financial information can be made available for, among other things, decision making. The accounting system must also capture non-financial information to support financial information in making better decisions (Noor Azizi Ismail, 2003).

Technology has changed the way we live, work, and play. The accounting profession is no exception. The introduction of automation such as Artificial Intelligence (AI), big data analytics, and blockchain is changing various aspects of business, including its financial and accounting functions (Kon Yin Tong, 2019).

3.Methods

The method that we used in this paper is descriptive methods.

4.Results and Discussion

4.1. Results

The company changed the recording system for the workers' attendance in the field from a regular timesheet system to a digital system using a fingerprint device. Before you can use the fingerprint device for attendance recording, the employee's fingerprint data must be registered first into the fingerprint device by the estate manager and HRD. Furthermore, this data will be integrated with the payroll application in the ERP system. Workers' wages are paid according to the fingerprint device's attendance recorded and automatically calculated in the payroll system. By applying this system, the company can eliminate fraud in the field operation. If previously there had been a lot of registration of fictitious workers who had to be paid even though there were no workers, by applying a fingerprint attendance system, fraudulent registration of fictitious workers could be eliminated. Supervision is carried out continuously to ensure that only workers present in the field and do attendance using a fingerprint device are paid their wages.

The next application is recording the harvest density figure into the mobile harvesting system. A harvest density figure is a number that shows how much production is obtained from one day of harvest. The harvest density figure is used to make a harvest plan from the estimated production results. The harvest density figure is obtained from the ratio between the row ready to be harvested with the number of sample plants to be harvested. The number of sample plants used is 3-5% of the total plants to be harvested. Determination of fruit maturity conducts a census of harvest density figure following the criteria for fruit maturity in the estate. The criteria for fruit maturity can vary from estate to estate (Yuanda Pangi Harahap, 2017). Previously, the data was recorded in a harvest density sheet. After using the digital system, Harvesting Foreman will record the harvest density figure to a mobile harvesting system using a gadget.

After recording all the required information, the estimated data will be transferred to the staging computer in the division office in the field as a transitional medium before being entered into the ERP system at the estate office. Staging computers is necessary because of the limitations of data networks and the internet in the field. Most of the plantation fields located in remote areas do not have adequate data and internet networks yet. When operating in the field using gadgets, there is usually rarely adequate network coverage available.

The use of a digital system to record harvest density figure accelerates collecting data from the field and reduces the time consumes and occurrence of errors in recording harvest density figure sheets into the ERP system and eliminating paperwork.

Previously, based on the fresh fruit bunches (FFB) harvested by the Harvester, manually Harvesting Clerk records each of FFB and loose fruit from each Harvester in a separate column between ripe (normal) fruit and raw fruit in the Fruit Receipt Book. By sampling, the Field Assistant will also check the FFB harvested. The results of the recording of the Harvesting Clerk must be matched the next morning (to be checked for accuracy) with the results of the Assistant's examination to prevent errors or possible fraud.

After using the digital systems, Harvesting Clerk will record the necessary to the mobile harvesting system containing Harvester's name, number of bunches, and loose fruit weight. This data will be used as production data and as the basis of the premium to be paid to the Harvester. Next, Field Assistant will check the data in the field and enter the data into the mobile harvesting system. The data from Harvesting Clerk and Field Assistant's input will be synchronized into the system by mobile harvesting system application. Furthermore, the synchronized data will be transferred to the staging computer in the division office in the field as a transitional medium before being entered into the ERP system at the estate office.

Based on the harvest data input into the mobile harvesting system, the system generates an Oil Palm Delivery Sheet. This Oil Palm Delivery Sheet contains data on the number of bunches and the weight of harvested loose fruit. The Oil Palm Delivery Sheet also containing the location of the harvest information.

4.2. Discussion

The company succeeded in changing the recording pattern from a traditional basis to a digital basis because, in addition to the use of technology, the company also carried out change management in all lines, from the operational level in the field to the decision-making level at the head office. Workers in the field are assured that with the application of digital technology their rights as workers will be

immediately recorded according to their work performance and their income will be transferred each month to their personal accounts at the bank without any deductions. Supervisors in the field are convinced that by implementing a digital system their paperwork will be reduced so that the administrative time required will be reduced and the remaining time can be used to maximize the supervisory function in the field. Supporting departments and decision-makers at the head office no longer need to wait for the results of records to be sent from the plantations but can directly access the necessary information because the data that has been inputted into the mobile device can be transferred to the ERP system.

By reviewing explanation above, the application of digital technology in managing plantation management is needed so that it can help companies and management to optimize the use of Human Resources (HR) and other resources effectively, efficiently and accurately.

The application of digital technology is none other than the influence of the application of industry 4.0 which is expected to increase productivity and innovation, reduce operating costs, and efficiency which leads to increasing exports of domestic products.

Conclusion

The use of digital technology in plantations for accounting and other purposes much helps accelerate the data collection process and its accuracy. The use of the fingerprint attendance tool also helps eliminate fraud in labor use because the fingerprint technology is directly integrated with the existing payroll system. The payroll system is integrated with the ERP system so that only registered workers who make attendance with the fingerprint machine are recorded for attendance. Then their wages and premiums are calculated. There is also the use of mobile harvesting system to record harvest density figure, the yield being harvested, and replication tool to connect and communicate with the ERP systems.

Overall, the use of the application of digital technology in managing plantation management is needed. It can help companies and managers optimize the use of Human Resources (HR) and other resources effectively, efficiently, and accurately.

Suggestion

The use of technology for digital accounting must increasingly be continued, and internal controls must also effectively carry on. The use of artificial intelligence and the utilization of big data will help improve the information used and accelerate the acquisition of information. Other technologies, such as drones for data collection in plantation areas, will significantly help the required data's accuracy.

Reference

1. Yuanda Pangi Harahap, Ahmad Junaedi (2017), Harvest Management of Palm Oil (*Elaeis guineensis* Jacq.) Based on ISPO and RSPO Criteria in Sei Batang Ulak Estate, Kampar, Riau, Bul. Agrohorti 5 (2), 190.
2. Ashutosh Deshmukh (2006), Digital Accounting: The Effects of the Internet and ERP on Accounting, Pennsylvania State University – Erie, USA.
3. Kon Yin Tong (2019), Impact of Technology to the Accountancy Profession, AFA Connect.



4. Noor Azizi Ismail, Shamsul Nahar Abdullah, Mahamad Tayib (2003), Computer-Based Accounting Systems: The Case of manufacturing-based Small and Medium Enterprises in The Northern Region of Peninsular Malaysia, Jurnal Teknologi, Universiti Teknologi Malaysia.

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).