Pieces Analysis to Improve Performance Cash Sales System: A Case Study on The Darmo Deli Supermarket

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Abstract

Darmo Deli Supermarket is a growing retail company. Cash sales are the primary source of income for that company. The process of obtaining to securing the proceeds of cash sales becomes one of the essential tasks of the company. A good cash sales system plays a crucial role in ensuring all-cash sales are recognised and recorded. This study aims to unveil the performance of the Darmo Deli supermarket cash sales system. A descriptive qualitative approach using PIECES analysis based on observations, interviews, and documentation is used in this study. PIECES analysis has six aspects: performance, information, economics, control, efficiency and service. The study results show that there is no warehouse section in the cash sales accounting information system's Darmo Deli Supermarket. The control aspect in the cash sales system based on PIECES analysis needs to be improved. Upgrading the integrated system between the cashier and the accounting section is urgently needed. The fraudulent sales data reporting can be avoided, velocity and accuracy of financial reports in Darmo Deli Supermarket can enhance.

Keywords: PIECES analysis; cash sales system; system

1.   Introduction

Nowadays, almost all business activities cannot be separated from technology. Such a large amount of data can become a problem for supermarkets if not utilised properly. The more data, the more supermarkets require effort to process the data to be used as helpful information in the future (Nurdin & Astika, 2019). Technology is used to produce information. Information is data that has been managed and processed to provide meaning and improve the decision-making process (Romney & Steinbart, 2018, p. 4). The information obtained will be used to make decisions related to the continuity of an existing system within the company. A company needs an accounting information system to assist

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companies in making the right decisions. With an accounting information system, the company's development can be followed from time to time because sales profits and losses can be detected.

Sales are the primary source of income for a company. Accuracy in recording and reporting sales is vital for the company. The Darmo Deli Supermarket is a growing retail company, with the primary source of income coming from cash sales. The Darmo Deli Supermarket cash sales system has been using barcode scans. However, the recording process to the presentation of reports still uses the manual method to transfer data using a flash disc. Moreover, errors or delays in recording and presenting the reports could occur. PIECES analysis with six variables can improve the cash sales system that has been implemented. Six variables of PIECES analysis are performance, information, economics, control, efficiency and service. PIECES framework will be applied and analysed in the cash sales system, and the result will show which aspects need improvement.

2.   **Literature Review**

2.1.   *Cash sales*

Sales are the total amount charged to customers for merchandise sold by the company, including cash sales and credit sales (Hery, 2011, p. 123). Cash sales are sales revenue, as if service revenue, recorded when earned. Sales revenue is generated when the goods are transferred from seller to buyer (Kieso, 2013, p. 230). The company carries out cash sales by requiring the buyer to pay the price of the goods first before the company hands over the goods to the buyer (Mulyadi, 2013, p. 45). The nominal cash sales at supermarkets are not too large, but the transaction intensity is very high. Therefore, an integrated system is needed to avoid recording errors. According to Syafira & Sularto (2019) results, a manual cash sales system can cause some errors in recording.

2.2.   *Accounting information system*

Accounting information systems include processes, procedures, and systems that capture accounting data from business processes, record accounting data into appropriate records, process accounting data in detail by classifying, summarising, and consolidating and reporting summarised accounting data to internal and external users (Turner, Weickgenannt, & Copeland, 2017, p. 4). An accounting information system is a system that can collect, record, store, and process data to produce information for decision-makers.

2.3.   *Cash sales accounting information system*

Cash sales accounting information systems affect sales effectiveness. Sales effectiveness has not been effective because the procedures and functions used have not been operated optimally. (Kustianti, 2020). The cash sales information system is the processing of cash sales data by utilising the network as a liaison between computers which will later be used to process transaction data as cash sales reports used by management to make financial reports and manage company operations. (Mulyadi, 2013, p. 50) the related functions in the cash sales accounting information system are as follows: 1) sales section, officiate of receiving orders from buyers, editing orders, and requesting approval from the finance department, 2) warehouse/delivery section, while sending, recording and preserving goods, 3) billing section, in charge of making invoices and distributing them to buyers and the accounting department, 4) accounting department, is responsible for posting to the sales journal and periodically posting to the general ledger account. The records used in the cash sales system are as follows: 1) Sales Journal to record and summarise sales data, 2) Cash Receipts Journal to record cash receipts from various sources, including cash sales, 3) General ledger to record the cost of goods sold, 4) Stock Card, Inventory cards

and warehouse cards to record the reduction in the cost of goods sold and to monitor the flow of the inventory in the warehouse. In cash sales transactions, warehouse cards record the reduced quantity of products sold.

The procedures involved in the cash sales accounting information system are as follows:

1. Sales Order Procedure

   This section plays a role in receiving orders from buyers; three copied cash sales invoices will be distributed to the buyer as proof of payment to the cashier, sent to the warehouse, and for the sales order section. A documentation archive that will be stored according to the invoice serial number.

2. Cash Receipt Procedure

   The cashier carries out cash receipts at the same time after receiving a cash sales invoice from the cash sales order section from the buyer, as well as operating the cash register machine to produce cash register evidence which will be affixed to the invoice that has been affixed with a paid off stamp and handed back to the buyer for the benefit of taking goods to the cash register department. Delivery of goods.

3. Goods Delivery Procedure

   After receiving a cash sales invoice from the sales order section, the warehouse prepares goods according to the actual quantity. It records it into a warehouse card which will be submitted to the delivery department.

4. Cash Sales Recording Procedure

   Cash sales transactions are recorded in the sales journal and cash receipts journal and then reduced inventory of goods sold in the inventory card.

5. Procedure for Depositing Cash to Bank

   All cash received requires an immediate deposit in the bank on a day. The cash function devolves the total amount received from cash sales to the bank.

6. Procedure for Recording Cash Receipts

   Deposits slip keystone in recording cash receipts into the cash receipts journal.

7. Procedure for Recording Cost of Goods Sold (COGS)

   The accounting function makes a COGS recapitulation based on the data recorded in the inventory card. Based on this recapitulation, the accounting function makes memorial evidence a source document for recording COGS in the general journal.

2.4. *Internal control*

According to Mulyadi (2013, p. 164), the definition of internal control includes organisational structure, coordinated methods and measures to maintain organisational wealth, check the accuracy and reliability of accounting data, encourage efficiency, and encourage compliance with management policies. Internal control affects sales effectiveness. Sales effectiveness is not yet effective because the control environment, control activities, risk assessment, information and communication quality, and supervision are not yet running perfectly (Kustianti, 2020).

According to the Committee of Sponsoring Organisations (COSO), internal control is a process that is influenced by the board of directors, management and employees designed to assure that the organisation's objectives will be achieved through operational efficiency and effectiveness, presentation of reliable financial statements, compliance with applicable laws and regulations. Company leaders must demonstrate their commitment to implementing strict controls and policies that are consciously and directly followed by their subordinates (Kustianti, 2020).

2.5.   *PIECES analysis*

PIECES (Performance, Information, Economic, Control, Efficiency and Service) is an analysis model used to obtain more specific issues (Nurjamiyah & Dewi, 2018). Analysing a system will usually be carried out on several aspects, including performance, information, economy, control, efficiency, and service. PIECES analysis has a comprehensive framework for analysing a system. It could be used before developing an information system and evaluating an information system that has been running. PIECES analysis can capture the symptoms of the main problem. This method uses six evaluation variables, namely:

1. Performance

   It has an essential role in evaluating processes or procedure that is still possible to improve. Performance is measured from:

   a. Throughput, namely the number of jobs/outputs/deliverables that can be performed/generated at a particular time.

   b. Response time is required to complete a series of activities to produce specific outputs/deliverables.

2. Information

   Assessing whether the current procedures can still be improved, so the quality of the information produced is getting better. The information presented must have a useful value. It can be measured by:

   a. Output, which is the proceeds of processing.

   b. Input is a data source and then processed to become useful information.

3. Economics

   Assessing whether the current procedures can still be increased in benefits (use-value) or reduced costs of its implementation.

4. Control

   Assessing whether the existing procedures can still be improved, so the quality of control is getting better, and its ability to detect errors/fraud is getting better.

5. Efficiency

   Assessing whether existing procedures can still be improved, so operating efficiency can be reached and should be superior to manual systems.

6. Service

   The quality of a system is usually seen in its service (Sintawati & Hartati, 2020). It assesses whether the current procedures can still be improved to escalate service quality. It makes the quality of service very user friendly for users and customers.

3.   **Method**

The research method is qualitative research with descriptive analysis. According to Moleong (2011, p. 6) qualitative research is research that intends to understand the phenomena are experienced by research subjects, such as behaviour, perceptions, motivations, actions and others holistically, through descriptions in the form of words and language in a unique natural context and by utilising various natural methods.

3.1.   *Sample / Participants*

The sample or participants who participated in this research are management and Darmo Deli Supermarket employees associated with the cash sales system. Cashiers, accounting staff and

management, are the participants in this research. They are directly involved in the cash sales system, so they could present clear and precise information regarding the system being implemented.

3.2. *Instrument(s)*

The instrument used in this research is PIECES analysis. Six aspects of PIECES analysis give a comprehensive analysis to escalate the current cash sales system in Darmo Deli Supermarket. A table of performance, information, economy, control, efficiency, and service will be created to observe the cash sales system in Darmo Deli Supermarket.

3.3. *Data collection procedures*

Data collection procedures used by the author are as follows:
1. Observation
   Observations were conducted to perceive the internal conditions of the company. Collecting data is carried out by direct observation and participating in company activities related to cash sales accounting information systems.
2. Interview
   The authors take an interview with all parties in the company who correlates with the cash sales accounting information system.
3. Documentation
   The data collection process is carried out by delve records, reports, files and other documents related to the cash sales accounting information system, such as the Darmo Deli Supermarket cash sales report.

The sequence of activities in the current cash sales system is arranged for data analysis. Furthermore, the sequence of activities was grouped by each section. The author also compiled the flowchart to accelerate readers' understanding. The Darmo Deli Supermarket cash sales procedures, notes and related documents are analysed against standard procedures and the PIECES framework.

4. **Results**

4.1. *Darmo Deli supermarket cash sales accounting information system*

The cash sales accounting information system in Darmo Deli Supermarket begins with the customer coming to choose the goods until be over with the accounting records in the general ledger. The procedure of the Darmo Deli Supermarket cash sales accounting information system is as follows:
1. Customers come to the Darmo Deli Supermarket and choose the items.

2. After selecting the items, the customer goes to the cashier and is ready to pay. The cashier scans the item.

3. Once scanned, cash sales data will be stored in the cash register, and item prices will be connected with a database of inventory, prices and sales. The cashier will inform the customer amount of the receipt.

4. After receiving money from the customer, the cashier will provide a receipt for the customer. Purchase receipts consist of two copies. The first one will be given to the customer, and the second will be submitted to the general section.

5. After the sale ends, the cashier will make a daily sales report. Cash, sales report and receipts are handed over to the general section.

6. Before depositing cash into the bank, the general section matches daily sales reports, receipts and cash. Afterwards, the general section fills the bank deposit slip and deposits money.

7. The general section will archive a bank deposit slip validated based on dates and receipts for purchasing goods and daily sales reports.

8. Every day, the accounting section imports sales data from the cash register using a flash disc.

9. The accounting section in sales income records the imported sales data. Cash sales also are recorded in the cash receipt journal. Journal automatically posted to general ledger and stored in the company database.

Based on the procedure described above, it can be grouped into three sections. Procedures number 1 to 5 are related to the cashier section. Procedure numbers 6 and 7 are related to the general section, and others are related to the accounting section. Figures 1 to 3 present a flowchart of the Darmo Deli supermarket cash sales system. It makes it easier to understand and analyse the cash sales system.
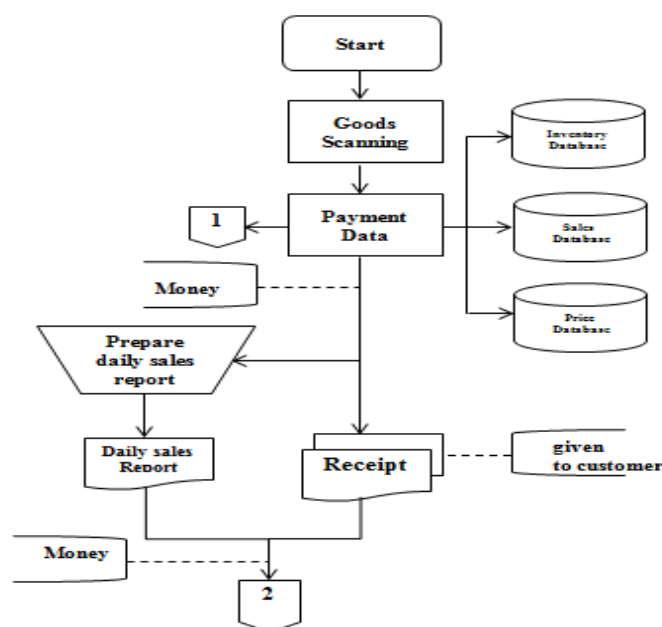
Figure 1. Flowchart cashier function

Figure 1 shows the activities carried out by the cashier. The system used to process cash sales transactions in this section can speed up customer service. It can affect customer satisfaction and increase sales. Using barcode scanning can minimise sales data recording errors.

The activities carried out by the general section are shown in figure 2. The general section manually checks the data received from the cashier. They do not have direct data access to the cash register system. This section has not fully implemented internal control of the cash sales system. The source of the data obtained in the general section comes from the cashier, without having its source data from the system.

The accounting section is the end process of the Darmo Deli Supermarket cash sales system. The activities carried out by the accounting section are shown in Figure 3. The accounting section carries out recognition and recording of cash sales by retrieving data using a flash disc on the cash register. There is no comparable data to ensure the completeness of sales data in the accounting section. The cash sales system data source comes from the cash register, which has not been integrated into the general and accounting sections. Transfering sales data from the cashier to the accounting department is still using a manual method. The potential for fraudulent sales data reporting is very fenceless.
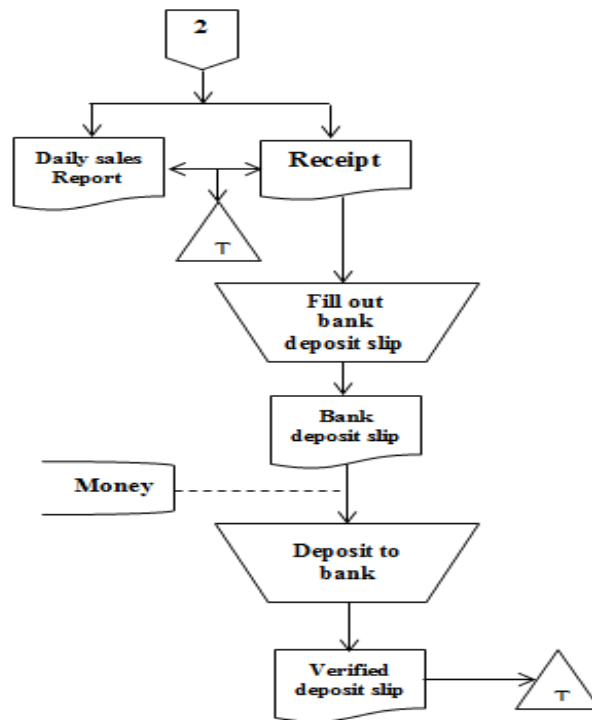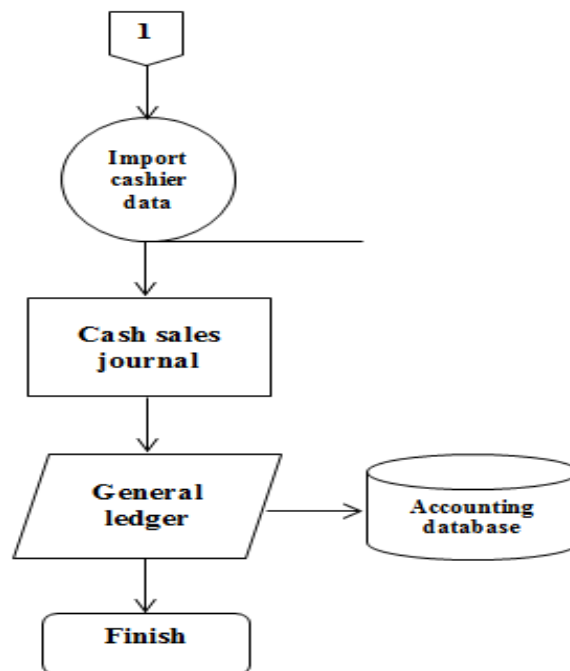
Figure 2. Flowchart general functions

Figure 3. Flowchart accounting function

Based on the flowchart, the Darmo Deli Supermarket cash sales accounting information system has cashier, general, and accounting functions. The Darmo Deli supermarket does not have a warehouse function. The warehouse function is an important part of the cash sales accounting information system because the warehouse function is related to inventory storage and information related to the condition

of the existing inventory. There will be delays in ordering from suppliers if there is no warehouse function, running out of stock, and declining sales.

4.2. *PIECES analysis in Darmo Deli Supermarket cash sales accounting information system*

The procedure and sections in Darmo Deli Supermarket's cash sales system were analysed using PIECES analysis. The results are shown in Table 1.

Table 1. Table of PIECES analysis of the Darmo Deli supermarket cash sales accounting information system

No.	PIECES analysis	Cash sales system in Darmo Deli supermarket
1.	Performance	Cash sales accounting information system's Darmo Deli Supermarket in completing tasks has been done quickly, accurately and reliably. Computers and barcode scan machines accelerate the process of cash sales. The Darmo Deli supermarket does not take long to process every sale.
2.	Information	The information generated by the system at the Darmo Deli Supermarket can be called good because the information produced is relatively short but detailed. Hence, users will be prompt in processing and using information.
3.	Economic	The system used in the Darmo Deli Supermarket every month requires improvement to reduce data loss. It also increases the advantages performance system in the continuity system. Currently, Darmo Deli Supermarket has provided a budget for upgrading the system.
4.	Control	Sales data does not adhere automatically to the accounting section. The accounting section must import data through a flash disc in the cash register. The accounting section records cash sales in the cash receipts journal based on that data. There is no guarantee and control that sales are complete to record. Sales data in the cash register can be obtained and edited by the cashier before accounting imports the data.
5.	Efficiency	The cash sales information system in Darmo Deli Supermarket is able to be upgraded according to the necessity to realise operating efficiency.
6.	Service	The existing system's capability at the Darmo Deli Supermarket in providing satisfaction in services to users is excellent. The cash sales system is supported with software and hardware such as computers, scanner machines, and others. Furthermore, the existing system at the Darmo Deli Supermarket is easy to operate, so the service delivery to users and customer is faster.

5.   **Discussion**

This PIECES analysis gives a comprehensive analysis; then, several problems generally will be found which can become the main problem. Analyses are performance, information, economics, control, efficiency and service. Darmo Deli supermarket has proper performance, information, economics, efficiency and service. One defective aspect is the control aspect. In this aspect, Darmo Deli Supermarket's cash sales data cannot be saved automatically or integrated into the accounting section.

The accounting section needs to import data by flash disc to record data sales in journals. Why can't the author mention that this aspect is proper? Because it can trigger data fraud. The author mentions in the flowchart procedure that the accounting section will import data from the cash register every day. Before the accounting section imports the data, the cashier has the potential to edit the cash sales data; this can be risky for the Darmo Deli Supermarket.

The solution that the author can give is to upgrade the system. The data in the cash register is connected or integrated to the accounting section computer, so the accounting section does not have to import cash sales information using a flash disc. If it is still not possible, immediately connected to the accounting section computer, the author suggests that cash sales information can be temporarily uploaded to the google drive application, whose email can only be accessed by certain parties to minimise and control the occurrence of cash sales data fraud.

6.   Conclusions

Based on the results described, the conclusions can be drawn: Darmo Deli Supermarket's cash sales accounting information system has cashier, general, and accounting functions. There is no warehouse function in the cash sales accounting information system. Based on PIECES analysis, the Darmo Deli supermarket cash sales accounting information system is proper in performance, information, economic, efficiency and service aspects, but still defective in the control aspect.

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Analisis PIECES Untuk Meningkatkan Kinerja Sistem Penjualan Tunai: Studi Kasus Di Supermarket Darmo Deli

Abstrak

Supermarket Darmo Deli merupakan perusahaan ritel yang sedang berkembang. Penjualan tunai merupakan sumber pendapatan utama bagi perusahaan tersebut. Proses mendapatkan hingga mengamankan hasil penjualan tunai menjadi salah satu tugas terpenting dari perusahaan. Sistem penjualan tunai yang baik memainkan peran kunci dalam memastikan bahwa seluruh penjualan tunai telah diakui dan dicatat. Penelitian ini bertujuan untuk menyingkap kinerja sistem penjualan tunai Supermarket Darmo Deli. Pendekatan kualitatif deskriptif dengan menggunakan analisis PIECES berdasarkan hasil observasi, wawancara, dan dokumentasi digunakan dalam penelitian ini. Analisis PIECES memiliki 6 aspek yaitu kinerja, informasi, ekonomi, kontrol, efisiensi dan pelayanan. Hasil penelitian menunjukkan bahwa sistem informasi akuntansi penjualan tunai Supermarket Darmo Deli tidak memiliki bagian gudang. Aspek kontrol pada sistem penjualan tunai perlu ditingkatkan. Supermarket Darmo Deli perlu melakukan upgrade sistem terintegrasi antara bagian kasir dengan bagian accounting, sehingga kecurangan dalam pelaporan data penjualan dapat dihindarkan serta kecepatan dan keakuratan laporan keuangan Supermarket Darmo Deli dapat ditingkatkan.

Kata kunci: analisis PIECES, sistem penjualan tunai, sistem

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