

## Analysis of Employee Work Quality Using Statistical Process Control and Compliance with Standard Operating Procedures (Study in the Merchandise Inspection Department of the Foodhall Senayan City)



Eri Marlapa<sup>1</sup>, Aisyah Pratiwi<sup>2</sup>

<sup>1,2</sup>Mercu Buana University, Jakarta, Indonesia

**ABSTRACT:** The objective of this research is to evaluate the effectiveness of employee performance in implementing Standard Operating Procedures (SOP) within the Merchandise Inspection/Receiving Department at The Foodhall Senayan City. This research is of a qualitative descriptive nature, with a focus on Statistical Process Control (SPC) as a measurement instrument. It employs the Implementation of Seven Key Elements in SOP, covering efficiency, consistency, error minimization, problem-solving, and defensive limitations. Five individuals participated in this research: Branch Manager, Receiving Supervisor, and three Receiving Staff members. Data collection techniques were based on direct observation, interviews, and documents used as references for the receiving staff's work procedures. In this study, the author used Statistical Process Control (SPC) on Attribute Control Charts, specifically using P-charts as a measurement tool for Quality Control checks on goods. The Implementation of Seven Key Elements in SOP was used to deepen the investigation into problem-solving that could not be explained using numerical data. Based on the analysis results using Statistical Process Control (SPC) for the current period, the average reversal rate is 0.02, indicating proximity to the Lower Control Limit (LCL) of 0 or zero defects. Meanwhile, regarding the usage of the Implementation of Seven Key Elements in SOP in the Merchandise Inspection/Receiving Department at The Foodhall Senayan City, it is evident that in the implementation of these seven key elements, there are still some shortcomings. These deficiencies include error minimization, process mapping, employee protection, and defensive limitations.

**KEYWORDS:** Statistical Process Control (SPC), Implementation of SOP, Efficiency, Consistency, Error Minimization, Problem Solving, Employee Protection, Process Mapping, and Defensive Limitations.

### INTRODUCTION

#### *Research Background*

With the advancement of time and the complexity and dynamics that occur, the role of Standard Operating Procedures (SOP) is increasingly crucial in companies as a guide in carrying out a work process. Every organization or company that is aware of the importance of this tends to formulate and implement a system, namely Standard Operating Procedures (SOP). These SOPs are applied in every operational activity of the company, especially at PT Swalayan Sukses Abadi, which operates in the retailing sector, aiming to sustain its business effectively and efficiently. Therefore, almost every company worldwide has and implements Standard Operating Procedures (SOP) in its operational processes. With the implementation of SOPs, it is expected that work can be executed well, on time, directed, and accountable.

Based on interviews with direct observations and the brainstorming process, brainstorming, also known as idea generation, is a group activity in which participants share ideas on a specific topic or issue (Ali Kabul Mahi and Sri Indra Triagunarmo, 2017). From the interview with the Store Manager, information was obtained that he suggested the author investigate the most front-line material flow, namely the Merchandise Inspection/Receiving Department. The author attaches data that serves as a reference for the mandatory procedures that Receiving employees must follow when inspecting and receiving goods:

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**Table 1. Reference Procedure for Fresh Goods Reception (Based on Temperature)**

| Standard Temperature for Fresh Products (Fruits, Vegetables, Meat, and Fish) |             |                  |                     |
|--|-------------|------------------|---------------------|
| No   | Description | Temperature      | Description         |
| 1.   | Chiller     | 0° – 4°C         | Meat/Chicken/Fish   |
| 2.   | Frozen      | (-18°) - (-24°)C | Meat/Fish/Ice Cream |
| 3.   | Fruit       | 4° - 8°C         | All Fruit           |
| 4.   | Vegetable   | 5° - 12°C        | All Vegetable       |

**Note:** If the Temperature of Received Goods Does Not Meet the Standard, Please Report to the Branch Manager/Store Manager.

**Source:** SOP Data in the Receiving Department.

In Table 1, it can be observed that when employees receive Fresh goods, the items must meet the criteria/standard temperature rules established by the company. This is done by having employees stamp the Purchase Order (PO) when the supplier arrives with the goods. They should then present the delivery note along with the PO at the Lower Loading section of the Receiving Department to the Security personnel.



**Figure 1. Process of Implementing Procedures by Employees**

**Source:** Company data obtained by the researcher during direct observation.

In Figure 1, it can be seen that the employee checks the temperature of fresh goods, and then records the temperature above the stamped Purchase Order (PO). Subsequently, a photo is taken as documentation and sent to a WhatsApp group, where the manager, who is aware of all receiving activities, is a member. From the image, it is evident that the temperature of the fresh goods is 5.4°C, exceeding the specified procedure. In such cases, the Security personnel are obliged to report to the Branch Manager/Store Manager that the goods have a temperature above the set limit. The manager then decides whether to accept the goods, providing instructions to the Receiving employee, such as rechecking for aroma and color to determine whether the goods are suitable for sale. If the delivery note/PO brought by the supplier does not have the temperature check stamp, the supplier is instructed to return to the lower loading section for temperature inspection. Once the temperature is confirmed to meet the standard, the goods are stamped, and only then can they be further processed by the Receiving employee. This routine activity is carried out daily by the lower loading section's Security personnel.

As for the reference data on the acceptance procedure for grocery items that must be applied by Receiving employees during the goods inspection, it is as follows:

**Table 2. Reference Procedure for Receiving Grocery Items (Food, Non-Food)**

| Table of Reference for Product Acceptance Based on Expiry Date |                              |                                 |
|--|------------------------------|---------------------------------|
| No   | Product Type                 | Accepted Safe Expiry Date Limit |
| 1  | Fresh Milk                   | 1 Week Before the Expiry Date   |
| 2  | Long Life Milk               | 2 Months Before the Expiry Date |
| 3  | Fresh Yoghurt                | 2 Weeks Before the Expiry Date  |
| 4  | Long Life Yoghurt            | 1 Month Before the Expiry Date  |
| 5  | Short Life Cheese & Cream    | 3 Weeks Before the Expiry Date  |
| 6  | Long Life Dairy              | 1 Month Before the Expiry Date  |
| 7  | Fresh Juice                  | 3 Weeks Before the Expiry Date  |
| 8  | Long Life Juice              | 2 Months Before the Expiry Date |
| 9  | Frozen Food (Local & Import) | 3 Months Before the Expiry Date |
| 10   | Ice Cream (Local & Import)   | 3 Months Before the Expiry Date |

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|           |  |  |
|-----------|--|--|
| 11        | <i>Biscuits, Confectionary (candy, chocolate) cereal, jam, flour</i>                     |  |
|           | <i>a. Local</i>  | 6 Months Before the Expiry Date        |
|           | <i>b. Import</i>   | 2 Months Before the Expiry Date        |
| 12        | <i>Canned Food</i>   |  |
|           | <i>a. Local</i>  | 1 Year Before the Expiry Date          |
|           | <i>b. Import</i>   | 6 Months Before the Expiry Date        |
| 13        | <i>Baby Food</i>   |  |
|           | <i>a. Local</i>  | 1 Year Before the Expiry Date          |
|           | <i>b. Import</i>   | 6 Months Before the Expiry Date        |
| 14        | <i>Baby Milk &amp; Powdered Milk (Local &amp; Import)</i>                                |  |
|           |  | 1 Year Before the Expiry Date          |
| 15        | <i>Fresh Bread</i>   |  |
|           | <i>a. Local</i>  | 4 Days Before the Expiry Date          |
|           | <i>b. Import</i>   | 4 Days Before the Expiry Date          |
| 16        | <i>Pet Food</i>  |  |
|           | <i>a. Local</i>  | 1 Year Before the Expiry Date          |
|           | <i>b. Import</i>   | 6 Months Before the Expiry Date        |
| 17        | <i>Non-Food (Shampoo, Lotion, Soap, toothpaste)</i>                                      |  |
|           | <i>a. Local</i>  | 1 Year Before the Expiry Date          |
|           | <i>b. Import</i>   | 6 Months Before the Expiry Date        |
| 18        | <i>Noodle Pasta</i>  |  |
|           | <i>a. Local</i>  | 4 Months Before the Expiry Date        |
|           | <i>b. Import</i>   | 2 Months Before the Expiry Date        |
| <b>No</b> | <b>Product Type</b>  | <b>Accepted Safe Expiry Date Limit</b> |
| 19        | <i>Tempe, Tofu, Cintau, Wet Noodles, Spring Roll Wrappers, etc</i>                       |  |
|           | <i>a. Fresh</i>  | 1 Weeks Before Expiry Date             |
|           | <i>b. Long Life</i>  | 1 Months Before the Expiry Date        |
| 20        | <i>Liquid Dressing/Seasoning (Including pickles, vinegar)</i>                            |  |
|           | <i>a. Local</i>  | 9 Months Before the Expiry Date        |
|           | <i>b. Import</i>   | 2 Months Before the Expiry Date        |
| 21        | <i>Dried Dressing / Seasoning</i>  |  |
|           | <i>a. Local</i>  | 9 Months Before the Expiry Date        |
|           | <i>b. Import</i>   | 2 Months Before the Expiry Date        |
| 22        | <i>Dry Food (Powder, Raw Crackers, Salted Fish, Baking Items, Rice, Dried Mushrooms)</i> |  |
|           | <i>a. Local</i>  | 6 Months Before the Expiry Date        |
|           | <i>b. Import</i>   | 3 Months Before the Expiry Date        |
| 23        | <i>Egg</i>   |  |
|           | <i>a. Local</i>  | 3 Weeks Before Expiry Date             |
|           | <i>b. Import</i>   | 4 Months Before the Expiry Date        |
| 24        | <i>Drink</i>   |  |
|           | <i>a. Local</i>  | 8 Months Before the Expiry Date        |
|           | <i>b. Import</i>   | 2 Months Before the Expiry Date        |
| 25        | <i>Dried Drink (Tea, Coffee, Juice, Creamer)</i>   |  |
|           | <i>a. Local</i>  | 1 Year Before the Expiry Date          |
|           | <i>b. Import</i>   | 6 Months Before the Expiry Date        |
| 26        | <i>Oil</i>   |  |
|           | <i>a. Local</i>  | 1 Year Before the Expiry Date          |
|           | <i>b. Import</i>   | 8 Months Before the Expiry Date        |

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|    |                          |                                 |
|----|--------------------------|---------------------------------|
| 27 | Healthy Food / Diet Food |                                 |
|    | a. Local                 | 9 Months Before the Expiry Date |
|    | b. Import                | 2 Months Before the Expiry Date |

Source: Data from Goods Receipt SOP

In Table 2, it can be observed that the reference procedure for goods receipt must be adhered to by employees working in the receiving department. Additionally, employees must pay attention to the level of quality and quantity indicated on the delivery note and purchase order, comparing them with the physical items. After understanding the Standard Operating Procedure (SOP) in the Merchandise Inspection/Receiving Department, based on pre-survey questions regarding SOP implementation, the identified issues are as follows:

**Table 3. Pre-Survey Results**

| NO | Dept | 1. Common Challenges Faced   | 2. Common Issues Occur   | 3. Most Fatal Errors   |
|----|------|--|--|--|
| 1  | MI   | Minimal supporting factors for work  | Msap network is often slow, barcode printers are not good/many broken lines, and are rarely controlled by IT | None   |
| 2  | MI   | No   | No   | No   |
| 3  | MI   | Complaints   | Often miscommunication   | Forgetfulness  |
| 4  | MI   | Very minimal mainpower, causing a lack of concentration in work (energy drained, insufficient intake/often late meals) | Overcrowded supplier queues, always leaving beyond the allotted time   | Input errors in quantity of goods, (estimates do not match the quantity per carton) causing corrections/Reversal |

Source: Pre-Survey Data

From Table 3, the Pre-Survey results above, the researcher conducted further observations by collecting data on the error rates in quantity made by employees in the Receiving Department during goods inspection. This data was collected overall, from daily to monthly records in the Reversal Request Minutes, as follows:

**Table 4. Data on Quantity Error Rates**

| PERIOD 2022  |               |                |                        |                   |
|--------------|---------------|----------------|------------------------|-------------------|
| Bulan        | Jumlah GR     | Total Reversal |                        | Proporsi Reversal |
|              |               | Salah Input    | Quantity Selisih Harga |                   |
| January      | 800           | 1              | 0                      | 0.001             |
| February     | 850           | 2              | 0                      | 0.002             |
| March        | 850           | 1              | 0                      | 0.001             |
| April        | 870           | 2              | 0                      | 0.002             |
| May          | 850           | 1              | 0                      | 0.001             |
| June         | 900           | 3              | 0                      | 0.003             |
| July         | 950           | 2              | 0                      | 0.002             |
| August       | 900           | 1              | 0                      | 0.001             |
| September    | 800           | 4              | 0                      | 0.005             |
| October      | 650           | 1              | 0                      | 0.002             |
| November     | 750           | 0              | 0                      | 0                 |
| December     | 900           | 3              | 0                      | 0.003             |
| <b>TOTAL</b> | <b>10,070</b> | <b>21</b>      | <b>0</b>               |                   |

Source: Reversal Request Minutes by E-mail.

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In Table 4, it can be observed that the Quantity Error Rate (SQ) is an error committed by receiving employees during the process of inputting the quantity of goods into the M.SAP system (a system used to input/print Good Receipts (GR), and this data affects the store's inventory data). Sometimes, there are errors in Purchase Orders (PO) that still include the tax amount (usually found in fresh vegetable items, as only fresh items are not subject to tax), so this error must be promptly corrected/reversed. Reversal is a correction process. The data that the writer has collected, is then processed and presented using a table.

Therefore, despite the phenomenon that employee performance is slightly hindered due to a lack of manpower, employees in the Receiving department still adhere to standard operating procedures and strive to apply and execute procedures to the fullest. This is because employees have been directed and trained before being directly involved in the field. Alongside this phenomenon, there is also a statement from the first informant, the store manager, explaining that the "maximum tolerance limit given for quantity errors based on all employees in the receiving department is 5 errors in a month. If there are more than 5 errors in a month, then all employees in the receiving department will be given warnings and evaluations." From the interviews conducted in 2022, it can be concluded that the store manager has the authority to make decisions. Based on Table 1.4, the Quantity Error Rate data above, the author then processes it using one of the seven measurement tools, which is the Statistical Process Control (SPC) tool, specifically the p-chart attribute control chart. The attribute control chart is used for data that has the characteristic of "attributes, which are products that can only be measured in two categories, such as defective and good products, or accepted and rejected products" (Dr. Rosalendo Eddy Nugroho, MM, and Dr. Achmad H Sutawidjaya, SE., M.Com., M.Phil, 4th Edition, 2022)

Based on a previous study conducted by Darsini and Novita Wahyingsih (2022) with the title "*Analisis Pengendalian Kualitas Produk Pada Proses Extruder Benang Plastik* (Quality Control Analysis of Products in the Plastic Yarn Extrusion Process.)" The research used the seven tools method, specifically focusing on the P-Chart control chart and fishbone chart. The study aimed to address the most dominant cause, which was employee fatigue due to the high number of targets, resulting in a lack of precision or concentration during work and leading to imperfect plastic yarn production.

Furthermore, this research also refers to previous studies that examined the seven key elements or indicators in SOP, including efficiency, consistency, error minimization, problem-solving, employee protection, process mapping, and defensive limitations. The aim is to identify the causes of the phenomena in the research. One such study is by Gabriele (2018) titled "Analysis of the Implementation of Standard Operating Procedures (SOP) in the Marketing and HRD Department of PT Cahaya Indo Persada (*Analisa Penerapan Standar Operasional Prosedur (SOP) Di Departemen Marketing dan HRD PT Cahaya Indo Persada*)" The research aimed to understand the implementation of SOP in the marketing and HR departments at PT Cahaya Indo Persada. The results showed that employees in the marketing and HR departments had implemented the SOP created by the company. However, there were some shortcomings in the essential elements of the SOP for the marketing department, particularly in terms of efficiency. There were also deficiencies in the areas of problem-solving, employee protection, and process mapping in the SOP for the marketing and HRD departments.

Meanwhile, Ayu Rospianti (2019) conducted a research titled "Analysis of the Implementation of Standard Operating Procedures for Public Service Passport Issuance (A Study at the Immigration Office Class I TPI Kediri)." The research aimed to understand how the standard operating procedures are implemented in public services, specifically in the passport issuance process. The study was conducted at the Immigration Office Class I TPI Kediri. The results of this research state that the implementation of standard operating procedures has the primary goal of ensuring that the execution of tasks is done neatly, orderly, and systematically from start to finish. It serves as a working guide to control activities within the organization, enabling the achievement of desired targets to the fullest extent at the Immigration Office Class I Immigration Checkpoint (TPI) Kediri. This becomes a reference for improving the quality of work. The research methodology used was qualitative, focusing on the seven key elements of SOP, including efficiency, consistency, error minimization, and process mapping.

The similarity with previous studies lies in the commonality of the topic, investigating the implementation of Standard Operating Procedures (SOPs) based on Joko Dwi Santosa's (2014) theory regarding the seven key elements essential in SOPs, including efficiency, consistency, error minimization, employee protection, process mapping, and defensive limitations as indicators for cause and effect measurement. Another similarity is the use of the triangulation method, starting with the acquired data. However, the difference in this study compared to previous research lies in the utilization of Statistical Process Control (SPC) as its measurement tool and the chosen research object. This study is focused on the results of observations and the collection of secondary and primary data through brainstorming techniques gathered by the researcher in the Department of Merchandise Inspection/Receiving at The Foodhall Senayan City.

Based on the background and limitations outlined, the author is interested in conducting a research study with the title, "**Analysis of Employee Work Quality Using Statistical Process Control and Conformity with Standard Operating Procedures (A Study in the Merchandise Inspection Department at The Foodhall Senayan City).**"

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## Research Objectives

The objectives of this research are as follows:

1. To assess the error rate in the Quality Control procedures in the receiving department using Statistical Process Control.
2. To evaluate the implementation of the seven key elements in Standard Operating Procedures (SOP) in receiving, aiming to minimize/achieve zero defects in the defect rate.

## LITERATURE REVIEW

Operational Management is a continuous and effective process that utilizes management functions to integrate various resources efficiently in order to achieve goals (Eddy Herjanto, 2003). Operations Management (OM) is a series of activities that create value in the form of goods and services by transforming inputs into outputs (Jay Heizer, Barry Render, and Chuck Munson, 2017). Quality management is an integrated strategic management system that involves all staff and uses qualitative and quantitative methods to continuously improve processes within the organization to meet the needs, desires, and expectations of customers. Conceptually, quality management can be applied to both goods and services because the emphasis on quality management implementation is the improvement of the quality system. Total Quality Management (TQM) is a company's commitment to providing the best for its customers (Manahan P, 2014). The emphasis is on continuous improvement, which is a quality requirement that can never be completely fulfilled by organizations, making it the next target for operational management to achieve a level of error-free (Zero Defect).

Retail is a business endeavor that aims to market goods and services to end consumers for personal and household purposes. The products sold in retailing encompass both goods, services, or a combination of both (Berman and Evans, 2001).

The Seven Tools of Quality are simple statistical tools used for problem-solving. These tools include: 1. Check Sheet, 2. Pareto Diagram, 3. Cause-and-Effect Diagram (Fishbone Diagram), 4. Histogram, 5. Stratification (Run Chart), 6. Scatter Diagrams, 7. Control Chart (Girish, 2013). This research focuses on the use of a control chart/statistical process control that employs attribute control charting. There are two types of attribute control charts: first, measuring the percentage of defects in a sample called p-charts, and second, counting the number of defects called c-charts. This research uses p-charts, which are the primary means of controlling attributes. Statistical Process Control (SPC) involves monitoring standards, taking measurements, and implementing corrective actions while a product or service is being produced. Samples from the process output are examined; if they fall within acceptable (In-control) limits, the process is allowed to continue. If they fall outside (Out Of Control) a certain range, the process is stopped, and typically, identified causes are found and addressed. Control charts are graphical presentations of data over time that show upper control limits (UCL) and lower control limits (LCL) for the process we want to monitor. Control charts are designed to facilitate a quick comparison of new data with previous performance data. For instance, a sample from the process output and the average plot of each sample are displayed on a chart with specified limits. The upper and lower limits in a control chart can represent units such as temperature, pressure, weight, length, etc. (Jay Heizer, Barry Render, and Chuck Munson, 2017). An attribute control chart, also known as an attribute data control chart, is used to measure a product based on two categories, such as defective and non-defective products (Eddy and Sutawidjaya, 2022).

Operational Procedure Standard (SOP) is a guide or manual used to perform a job task in accordance with the functions and performance assessment tools of non-government or government institutions, non-business or business, based on administrative, technical indicators, and procedural work, procedurally in accordance with work procedures, and work systems in interrelated work units (Tjipto Atmoko, 2011). Within the SOP, there are fundamental aspects that must be considered, as stated by Santosa (2014) in his book, which indicates seven key indicators that SOP is well implemented, as follows:

Efficiency, one of the indicators in executing the Standard Operating Procedure (SOP), ensures that things run smoothly by focusing on efficiency, which is related to cost and time savings.

Consistency is defined as precision or elements that do not change in carrying out activities within an organization. It is also interpreted as a measure indicating the extent to which activities are performed in accordance with principles or regulations established as a determination or work procedure. Therefore, all work activities must be consistent.

Minimalisasi Kesalahan, standar operasional prosedur (SOP) menjadi panduan pasti atau prosedur kerja yang akan membimbing para karyawan dalam melaksanakan kegiatannya agar dapat bekerja secara terarah dan sistematis.

Problem-solving, standard operating procedures (SOPs) are expected to serve as one of the instruments in resolving issues that may arise during the work activities conducted within a company or organization.

Employee Protection involves specific steps where there are procedures in place to safeguard each human resource within the company from potential liabilities and various personal issues of employees to prevent them from getting mixed up with work.

Work Map is a well-organized pattern of activities that allows a task to be executed in one's mind as a definite habit, ensuring that the activity remains focused and does not stray in various directions.



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Defense Limits, in this indicator, the standard operating procedure (SOP) encompasses defense fortifications or defensive measures to withstand inspections from both internal and external entities, preventing them from altering or undermining an organization. In the standard operating procedure, the above-mentioned elements are integral parts, meaning they are interrelated. Working shoulder to shoulder, they form a cohesive unit. Efficiency cannot proceed without consistency, and vice versa; consistency cannot be achieved without efficiency. Both require the minimization of errors and proper problem-solving. Additionally, each component operates with a clear work map, along with definite employee protection measures.

Based on the explanation provided above, the researcher outlines several concepts that will be utilized in implementing this research, as follows:

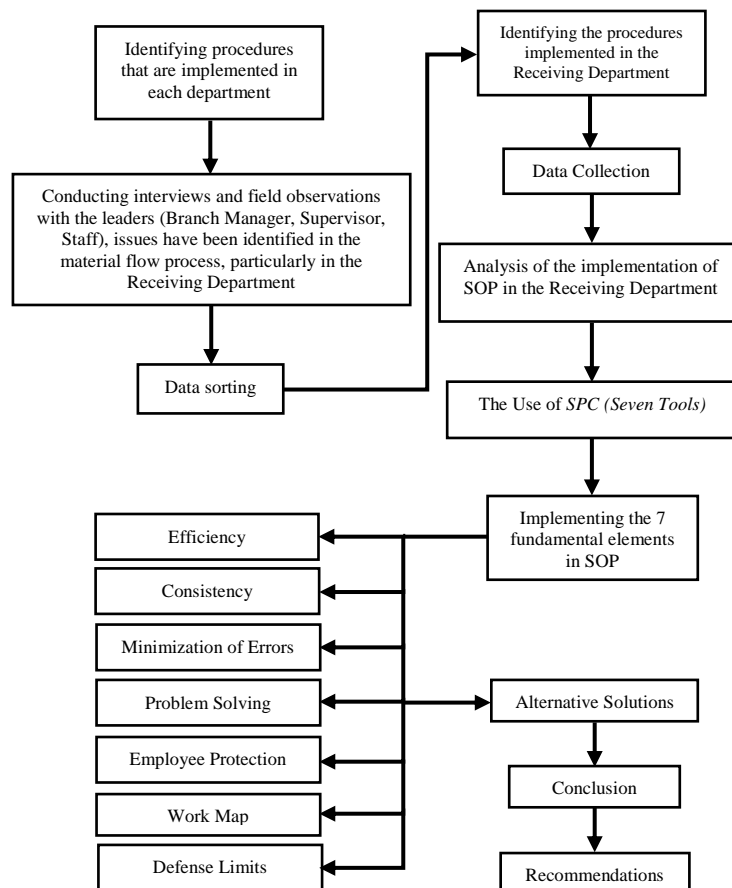


Figure 2. Framework of Thinking

## RESEARCH METHOD

### Research Time and Place

The object of this research was the Standard Operating Procedure (SOP), which served as a guide in performing tasks and as a reference for accepting the quality of goods. This study was conducted at one of the branches of a large company, namely PT Swalayan Sukses Abadi, which was engaged in the retail sector. The research duration was approximately 1 year, from August 2022 to September 2023, at The Foodhall Supermarket in Senayan City Mall.

### Research Design

This research utilized a qualitative descriptive method. Descriptive research aims to draw and interpret an object as it is. The purpose of this research was to systematically and factually address issues regarding the facts and characteristics of the population (Narbuko and Abu Achmadi, 2010). Qualitative Research Methods explore and comprehend meanings attributed by individuals or groups, often derived from social or humanitarian issues (Creswell, 2009). The focus of this study was directed towards Statistical Process Control (SPC) as a measuring tool, further explored through the implementation of the Seven Fundamental Elements in SOP, which encompass efficiency, consistency, error minimization, problem-solving, and defense limits.

### Data Analysis Method

**Descriptive Analysis,** The data analysis method used in this research was qualitative descriptive analysis, which entails the following:

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Measurements used Statistical Process Control (SPC), the formula for the quality p-chart (Jay Heizer, Barry Render, and Chuck Munson, 2017) is as follows:

Given:

$\bar{P}$  = Mean (percentage) of defects in the sample

$z$  = Standard Deviation

$\sigma_p$  = Standard Deviation of sampling distribution

1. The formula for calculating the Central Line is as follows:

$$CL = \bar{P} + \frac{\sum np}{\sum n}$$

2. The formula for calculating  $\sigma_p = \sqrt{\frac{\bar{P}(1-\bar{P})}{n}}$

3. The desired control limit is 99.73%. Therefore, the Z-value (Standard Deviation Required For Desired Level Of Confidence) used is 3.

4. The formula for calculating the Upper Control Limit (UCLP) is as follows:

$$UCL_p = \bar{P} + z\sigma_p$$

5. The formula for calculating the Lower Control Limit (LCLP) is as follows:

$$LCL_p = \bar{P} - z\sigma_p$$

**Qualitative**, This qualitative analysis method consists of three stages (Miles and Huberman Models (Sugiyono, 2012)), as follows:

1. Data Collection, Data collection involved observation, interviews, brainstorming, and document review within the research subject, specifically within the Receiving Department of one of the branches of the large company PT Swalayan Sukses Abadi in the retail sector.
2. Data Reduction, The data obtained from interviews was then compiled into reports or summarized. Key points were selected, focusing on essential aspects. Data collected from informants was categorized and checked through data triangulation. This process filtered and discarded unnecessary data.
3. Data Presentation, The subsequent step involves data reduction or presentation. The data presentation techniques utilized in this research involved the use of the seven tools of measurement. It could take the form of check sheets, statistical process control, graphs, and various data representations such as brief descriptions, charts, category relationships, flowcharts, etc. Data presentation aimed to categorize and organize information to obtain a comprehensive and systematic overview, facilitating conclusion drawing and decision-making. Conclusion Drawing and Verification, To draw conclusions, the researcher needed to understand the significance of various findings by recording regulations, and patterns, documenting each event, and probable configurations. This included cause-effect directions and various propositions. Verification occurred throughout the research in tandem with triangulation, ensuring the significance and meaningfulness of the research results.

### Instrument Testing

In qualitative research methods, instrument testing is not employed; instead, credibility testing, triangulation testing, and transferability testing are utilized. The details of these tests can be explained as follows:

**Credibility Testing**, Qualitative credibility testing according to Creswell (2009) states that researchers validate the authenticity of findings from the perspectives of the researcher, participants, or readers by employing specific procedures. Meanwhile, according to Moleong (2004), the degree of trust or credibility essentially replaces the concept of internal validity in non-qualitative research. Therefore, to ensure the accountability of research results, it is necessary to establish whether the presented data is valid or not, requiring techniques for the validity of data. The validity of data in qualitative research is a crucial aspect of determining the level of confidence in the conducted research. To examine the validity of data in this study, the author utilizes triangulation techniques. By employing triangulation techniques in data collection, the obtained data becomes more consistent, resulting in valid and accountable data.

**Triangulation**, Triangulation in the context of credibility is interpreted as a technique for cross-checking data from various sources, employing different methods and at different times. There are three types of triangulation: source triangulation, method triangulation, and time triangulation. In this research, the triangulation method used is source triangulation. Source triangulation is a technique to test the credibility of data by verifying information obtained from multiple, different sources using the same method (Sugiyono, 2015). In this



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study, data is gathered from the main informants and reinforced by data obtained from supporting informants. The main informants in this research are the Store Manager/Branch Manager and the Supervisor of the Merchandise Inspection/Receiving Department. Additionally, three staff members in the Merchandise Inspection/Receiving Department serve as supporting informants.

**Transferability Testing,** The uniqueness of transferability testing lies in its characteristic as a hallmark of qualitative research (Creswell, 2009). Meanwhile, transferability, or the issue of transferability, is an empirical concern that depends on the similarity between the sending and receiving contexts. To achieve transferability, a researcher seeks and collects empirical occurrences regarding the similarities in contexts. Consequently, the researcher is responsible for providing sufficient descriptive data if decisions about transferability are to be made. For this purpose, the researcher must conduct a small-scale study to ensure the effectiveness of this verification effort (Moleong, 2004).

In this research, the researcher conducted transferability testing through several procedures by formulating sub-problems that served as a guide for interviews, followed by a preliminary study or initial observation before engaging in the interview activities. Subsequently, the researcher conducted interviews and document analysis to gather information and data. Furthermore, the researcher conducted interviews with supporting informants. The data presented consisted of data displays and reductions.

### RESULTS AND DISCUSSION

#### Statistical Process Control (SPC)

This study utilized the first type, namely p-charts. P-charts are the primary method for controlling attributes. While attributes, whether good or bad, follow a binomial distribution, a normal distribution can be employed to calculate the limits of a p-chart when the sample size is large. The procedure is similar to the x-chart approach, which is also based on the central limit (CL).

Table 5. Data Processing for Quantity Error

| PERIOD 2022  |               |   |                  |  |
|--------------|---------------|---|------------------|--|
| Month        | GR Quantity   | GR Quantity<br>Incorrect Input Quantity | Price Difference | Reversal Proportion                        |
| January      | 800           | 1                                       | 0                | 0,001                                      |
| February     | 850           | 2                                       | 0                | 0,002                                      |
| March        | 850           | 1                                       | 0                | 0,001                                      |
| April        | 870           | 2                                       | 0                | 0,002                                      |
| May          | 850           | 1                                       | 0                | 0,001                                      |
| June         | 900           | 3                                       | 0                | 0,003                                      |
| July         | 950           | 2                                       | 0                | 0,002                                      |
| August       | 900           | 1                                       | 0                | 0,001                                      |
| September    | 800           | 4                                       | 0                | 0,005                                      |
| October      | 650           | 1                                       | 0                | 0,002                                      |
| November     | 750           | 0                                       | 0                | 0  |
| December     | 900           | 3                                       | 0                | 0,003                                      |
| <b>TOTAL</b> | <b>10.070</b> | <b>21</b>                               | <b>0</b>         | <b>Average Reversal Proportion (0,023)</b> |

Source: Data Reversal Processed by the Researcher.

Given:

$n$  = Total number of Good Receipts (GR) in 1 year.

$\sum np$  = Number of Reversals in 1 year.

$\bar{p}$  = Average Reversal.

$$\bar{p} = \frac{\text{Total Reversal}}{\text{Total GR}} \times \text{sample} = \frac{21}{10070} \times 12 = 0,025$$

Based on the formulas explained in Chapter 3 in the data analysis method for the p-chart, the results of the calculations are as follows:

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1. The formula for calculating the central line (CL) is as follows:

$$CL = \bar{P} + \frac{\sum np}{\sum n} = 0,025 + \frac{21}{10070} = 0,027$$

2. The formula for calculating  $\sigma_p = \sqrt{\frac{\bar{P}(1-\bar{P})}{n}} = \sqrt{\frac{0,025(1-0,025)}{21}} = 0,034$

3. The formula for calculating the upper control limit (UCL) is as follows:

$$UCL_p = \bar{P} + z\sigma_p = 0,025 + 3(0,034) = 0,127$$

4. The formula for calculating the lower control limit (LCL) is as follows:

$$LCL_p = \bar{P} - z\sigma_p = 0,025 - 3(0,034) = -0,077 \sim 0$$

### Interview Questions (Triangulation Test and Transferability Test)

The interview questions for the five informants regarding the approach to the Implementation of Seven Fundamental Elements in SOP are designed using the snowballing technique. The list of interview questions is as follows:

#### 1. Efficiency

- a. Store Manager:

- 1) Is it essential for the Company to create SOPs?
- 2) How important are SOPs for employees, especially in the Receiving Department?
- 3) Can the Company run smoothly without SOPs?
- 4) Does the implementation of each SOP affect the performance of employees, especially in the Receiving Department?
- 5) Does the implementation of SOPs among employees correlate with customer satisfaction?
- 6) Are there any other policies implemented besides SOPs?

- b. Supervisor & Staff, Merchandise Inspection Department:

- 1) What is SOP?
- 2) What are the benefits of implementing SOPs for employees?
- 3) Are there any other policies implemented besides SOPs?
- 4) Is there any part of the SOP that is still difficult to understand?

#### 2. Consistency

- a. Store Manager:

- 1) Since when was the SOP established?
- 2) During the implementation of SOP, have there been any improvements?
- 3) How do you ensure that employees remain consistent in implementing SOPs as a reference for work?
- 4) Can the impact of miscommunication affect the implementation of SOPs?
- 5) What sanctions are imposed when employees violate SOPs?

- b. Supervisor & Staff, Merchandise Inspection Department:

- 1) What challenges have you faced while executing SOPs?
- 2) Have there been instances of violating SOPs during their execution? (If yes, what sanctions were applied).
- 3) Have you ever forgotten the quality and quantity checking process?
- 4) Have you ever experienced miscommunication within the team?

#### 3. Minimizing Errors

- a. Store Manager:

- 1) How does the store manager control the execution process in the Receiving Department?
- 2) Are there any other policies to prevent an increase in reversals?

- b. Supervisor & Staff, Merchandise Inspection Department:

- 1) Are there tools to assist in the checking process to facilitate employees during inspections?
- 2) In urgent situations, is there often miscommunication between individuals or departments?

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## 4. Problem Resolution

- a. Store Manager:
  - 1) How do you address the continuously increasing reversals?
  - 2) If the reversal process takes a long time, are there any other policies that are considered urgent actions?
- b. *Supervisor & Staff, Merchandise Inspection Department:*
  - 1) How do you address the continuously increasing reversals?
  - 2) How does the reversal process take place?
  - 3) If the reversal process takes a long time, are there any other policies that are considered urgent actions?
  - 4) During the accumulation of incoming goods, do other employees, especially those in the receiving department, assist in the inspection process?

## 5. Workforce Protection

- a. Store Manager:
  - 1) What welfare benefits does the company provide to employees?
  - 2) Does the store have a first aid kit (P3K)?
  - 3) Is the first aid kit in the store sufficiently equipped for emergency treatment?
  - 4) What protective work facilities are provided to employees in the Receiving Department?
  - 5) Is the workload-to-employee ratio appropriate (activities, working hours, income, etc.)?
- b. *Supervisor & Staff, Merchandise Inspection Department:*
  - 1) Is the workload-to-employee ratio appropriate (activities, working hours, income, etc.)?
  - 2) Is the first aid kit in the store sufficiently equipped for emergency treatment?
  - 3) What welfare benefits do employees receive from the company?

## 6. Work Mapping

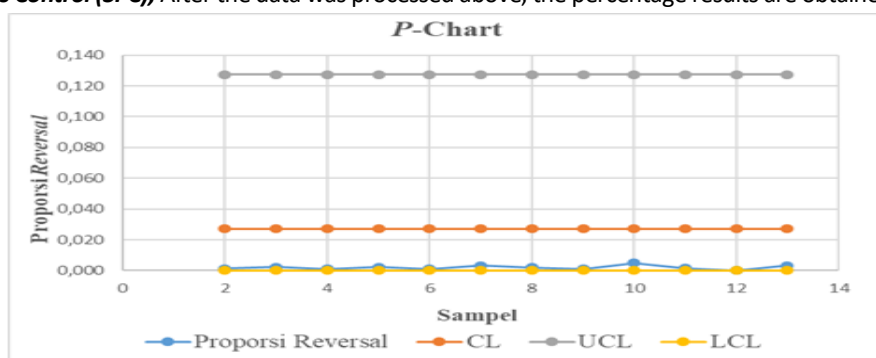
- a. Store Manager:
  - 1) What SOPs are implemented in the Receiving Department?
  - 2) Are there SOPs that regulate the supply chain process from input to output?
- b. *Supervisor & Staff, Merchandise Inspection Department:*
  - 1) What SOPs are implemented in the Receiving Department?
  - 2) Are there SOPs that regulate the supply chain process from input to output?

## 7. Defense Limits

- a. Store Manager:
  - 1) How often does the audit team visit the store?
  - 2) From where do audit teams come to inspect the store?
- b. *Supervisor & Staff, Merchandise Inspection Department:*
  - 1) How often does the audit team visit the Receiving Department?
  - 2) What are the common questions asked by the audit team?
  - 3) Are there any rewards given by the store to employees as a form of appreciation for their diligence/hard work?

## Hasil Analisa Data

**Statistical Process Control (SPC)**, After the data was processed above, the percentage results are obtained as follows:



**Figure 3. P-Chart Graph**

**Source:** Reversal Data Processing Results Based on Quantity Error Levels

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Based on the calculations above, Figure 3 shows the P-Chart graph, explaining that the Central Limit (CL) is 0.07; and the Upper Control Limit (UCL) is 0.127; while the Lower Control Limit (LCL) is 0. So from this process, it can be seen that the UCL and LCL limits are still under control, as indicated by the reversal proportion lines below the Central Limit (CL), and the average proportion is 0.023 or 2.3%. Reversal/error rates during inspection or incorrect input of item quantities into the system are still considered within tolerance. In the years 2021 to 2022, the situation experienced a "New Normal" or economic recovery and stability, a phenomenon felt by the retail business world. This phenomenon is evident in 2022 when companies synergized to improve and renovate stores entirely to create a more comfortable and modern shopping environment to attract customers. This influenced the ordering of goods, where the surge in the increase in the volume of incoming goods fluctuated. This phenomenon can be observed in the number of Purchase Orders (PO) checked at The Foodhall Senayan City store from the beginning of 2023, after the renovation in 2022 at the end of December, where the volume of Purchase Orders (PO) inputted by the system increased to around 70 to 80 Purchase Orders (PO) daily, compared to the range of 30 to 50 Purchase Orders (PO) in 2022.

**Implementation of the Seven Main Points in SOP.** From the interview data on the overall implementation of the Seven Main Points in SOP by the Branch Manager, Supervisor, and relevant staff, the following results were obtained:

### **1. Efficiency**

- a. The store manager and all staff in the Department of Merchandise Inspection/Receiving understand the meaning of SOP itself, both in terms of its functions and the purpose for which the company creates and implements the SOP. Although their understanding of SOP may vary, it indirectly carries the same meaning.
- b. All staff in the Department of Merchandise Inspection/Receiving, from understanding to implementation of SOP, face no obstacles in comprehending, executing, and applying it.
- c. Not only in their respective job desks but the entire team in the Department of Merchandise Inspection/Receiving is aware of the procedural process for receiving goods based on the guidelines specified in the goods receipt procedure.
- d. With the existence of SOP, all tasks become measurable. The efficiency of the implemented SOP brings satisfaction to customers, both in terms of the quality of the goods sold, good layout, and how employees treat customers. This has an interconnected impact, providing "certain satisfaction for the involved Shareholders" (First informant).
- e. "Regarding other policies implemented besides SOP, it depends on the situation, the issues that arise" (First informant).

### **2. Consistency**

- a. The Store Manager has their way of ensuring that each subordinate performs their tasks according to the applicable SOP. This is done through daily monitoring, starting from the manager level to the supervisor level, ensuring that all procedures in their department run as they should. This approach allows any mistakes to be quickly identified and promptly addressed. This insight is based on the interview results from the first informant.
- b. Throughout the implementation of SOP, all staff/team members in the Department of Merchandise Inspection/Receiving have not violated SOP and have not faced any sanctions.
- c. Supervisors and all staff/team members in the Department of Merchandise Inspection/Receiving admit to occasional lapses and miscommunications in certain situations, such as during break times or when there is a high volume of goods arriving from suppliers.

### **3. Minimization of Errors**

- a. Tabs are tools used in the process of checking goods to minimize errors during the counting of quantities and to avoid confusion with closely related types of goods (quality).
- b. However, many of these assisting Tab tools are damaged or non-functional, resulting in staff still conducting manual checks. This information was obtained from the interview with the third informant.

### **4. Problem Resolution**

- a. According to the second informant, the situation is explained as follows: "Reversals actually do not increase, but they exist. It's fluctuating, you know, up and down, depending on the value, depending on events. For example, during the fasting month or approaching Eid, the value of goods is high, and suppliers will come more, so the checking time is limited, while the value of goods and the arrival of goods are quite high. Usually, there is an increase in reversal because maybe they are in a hurry and become less careful." This phenomenon occurs due to a lack of manpower, leading to an increase in purchase orders and a high volume of incoming goods. The limited tools result in staff resorting to manual methods, causing fatigue and a decrease in concentration among the inspection staff.
- b. Supervisors and staff/team members in the Department of Merchandise Inspection/Receiving also assist in checking goods when receiving staff need help from other staff members. However, this method is still less effective if all receiving staff members have high workloads. This event can trigger miscommunication. This information is based on direct observation.

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### **5. Worker Protection**

- a. Based on the interview with the first informant, it was found that calculating the ratio of work to the number of employees related to activities, working hours, and income is difficult. However, the conclusion from interviews with informants 2, 3, 4, and 5 is that the ratio of work to the number of employees related to activities and working hours is insufficient. This is because there is only one staff member in the Department of Merchandise Inspection/Receiving responsible for checking goods, often assisted by a supervisor. If the supervisor does a recap/report once a week, then only one staff member conducts the goods inspection. In certain situations and during busy hours or high volume arrivals, this can lead to staff fatigue, reduced focus, delayed breaks, or even no breaks, potentially resulting in errors in the quality and quantity checking process or in the Good Receipt (GR) process/input into the system, leading to Reversals.
- b. According to the first informant, the completeness of the first aid kit (P3K) in the store includes a wheelchair, stretcher, oxygen, and medications for common ailments such as menstrual pain, headaches, and minor injuries. However, informants 2, 3, and 5, based on interviews, stated that they were unaware of the specific completeness of the first aid kit tools, as it is only available in the back office of the store. Information from informant 4, who is responsible for preparing the kit, provides specific details about its completeness.
- c. According to the first informant, additional safety equipment includes a goods lift, which is maintained monthly to prevent exceeding the maximum limit for loading goods into the lift. Direct observation also revealed the presence of a light fire extinguisher (APAR) and a wheelchair.
- d. Based on interviews with all informants, it was revealed that each job level has different benefits, allowances, and basic incomes, as outlined in the employment contract with employees. Unfortunately, these documents cannot be attached due to confidentiality.

### **6. Work Map**

- a. In the Receiving Department, there is a standard reference SOP for goods acceptance, including temperature standards for fresh items and based on expiry dates for non-fresh items. This was conveyed by informant 2. In the Receiving Department, there is also an SOP for the return process that regulates returned items.
- b. Based on interviews with all informants and direct field observations, there is a lack of clarity in the supply chain process flow from the arrival of goods at the location to the delivery of those goods to customers.

### **7. Defense Limitations**

- a. There are three Internal Audit teams that conduct inspections: the Loss Prevention (LP) team, the Information Technology (IT) team, and the Finance and QA team. This information was obtained from the interview with the first informant.
- b. From the interview with the third informant, it was stated that the audit team conducts inspections once a month. However, due to the New Normal situation, the frequency of inspections has changed, occurring approximately every three months.
- c. The audit team that frequently visits the Department of Merchandise Inspection on a monthly basis is the Finance and QA audit team. They typically inquire about the company's vision and mission, the physical quantity of returns not yet collected by vendors, cleanliness checks, and temperature data checks for the arrival of fresh goods. The checking of reversal data per period is not usually asked. This information was obtained from interviews with informants 2 and 3. It was also mentioned by informants 1, 2, 3, 4, and 5 that the internal audit team from Finance and QA comes regularly once a month after COVID, and in the early part of 2023, they come every three months.
- d. Stock Opname (SO) is conducted every six months. This information was obtained from direct observations and interviews with informants 1, 2, 3, 4, and 5.
- e. Many staff members in the Department of Merchandise Inspection/Receiving are unaware of the rewards given to employees by the company. This was revealed in interviews with informants 2, 3, 4, and 5.
- f. There is no check sheet inside the store to record reversal data periodically. Reversal data is sent in the form of a report to the managerial team for approval, and then it is sent via email.
- g. There is no complaint box, such as a suggestion box, for employees and customers inside the store. This information was obtained from interviews with informants 3, 4, and 5.

Based on the results of this research, there are differences compared to previous studies. This study employs Statistical Process Control (SPC) as a measurement tool to assess the quality of employee performance in implementing Standard Operating Procedures in the Department of Merchandise Inspection, particularly in the process of inspecting incoming goods from vendors brought into the store by suppliers. Before conducting the research, the author distributed questionnaires to identify issues in the Department of Merchandise Inspection / Receiving. After obtaining pre-survey results, the researcher collected reversal data over the past year and analyzed it using SPC as a quality control reference to evaluate employee performance.

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Furthermore, to gain a deeper understanding of employee performance quality, this research also utilizes a qualitative method by applying the seven main points in Standard Operating Procedures. This is because the seven main points in SOP are interconnected; for example, efficiency requires consistency, and vice versa. Each element also necessitates error minimization and appropriate problem resolution. Clear work maps and employee protection are also used to safeguard employees in their work.

The analysis of the implementation of the seven main points in SOP in the Department of Merchandise Inspection/Receiving at The Foodhall Senayan City indicates that the occurrence of reversals is not solely attributed to employee negligence. Other factors, whether intentional or unintentional, also play a significant role. Lack of tools, limited manpower, and high work pressure from superiors or high workload volumes are factors triggering such negligence. This results in the violation of break times, causing employees to lack focus due to fatigue.

## **CONCLUSION AND RECOMMENDATIONS**

### ***Conclusion***

#### **1. Statistical Process Control (SPC)**

Based on the analysis using Statistical Process Control (SPC), the average reversal rate is 0.023 or 2.3%, indicating proximity to the Lower Control Limit (LCL) of 0 or zero defects.

#### **2. Implementation of Seven Key Elements in SOP**

However, the analysis of the implementation of the seven key elements in the Standard Operating Procedures (SOP) in the Department of Merchandise Inspection/Receiving at The Foodhall Senayan City reveals shortcomings in the execution of these key elements. Specifically, in the areas of Error Minimization (out of the 3 tabs provided by the company, 2 tabs are damaged, frequent internet troubles/down, and computer lag); Employee Protection (based on interviews with all informants and direct observations, it was found that the completeness of the First Aid Kit for emergency treatment is inadequate, lacking items such as gauze, adhesive bandages, and even plasters); Process Mapping (lack of clarity in the supply chain process flow from the arrival of goods at the location to the delivery of the goods to customers); Defense Limits (absence of a Check Sheet for reversal data and a summary of the number of Purchase Orders (PO) that have been Good Received (GR) on a daily/monthly/yearly basis, and the absence of a suggestion box for employees or customers).

### ***Recommendations***

Based on the research findings, the author suggests several inputs to the company, with the hope that this research can be beneficial for both the company and future studies. The recommendations are as follows:

#### **2. Managerial Implementation**

- a. The company needs to adopt the Statistical Process Control (SPC) method for control processes and create a check sheet form for checking to determine the number of reversals and the volume of incoming goods based on the number of Purchase Orders (PO) received each week. This information should then be summarized every month. This will facilitate the quality control of employees' work, both individually and as a team. The company can take preventive actions and set development targets for each employee for the coming years.
- b. The company should conduct advanced analysis before establishing a policy update on the maximum number of reversals for employees each month. The author recommends limiting the maximum number of reversals based on the volume of goods/Purchase Orders (PO) received each day. This approach aims to prevent a decline in employee productivity due to pressure from a high volume of incoming goods, thus avoiding a large turnover.
- c. The company needs to implement the seven key elements in the application of Standard Operating Procedures (SOP) to address the essential aspects currently lacking in the SOP.
- d. The company must promptly replace/repair job support equipment, such as tabs and other tools that are damaged and worn out. This will expedite the goods inspection process and the inputting of quantities into the system, minimizing the occurrence of reversals.
- e. The company should conduct further analysis of the internet within the store or implement periodic checks once a month or every two months. This will help reduce prolonged troubles and the accumulation of work on a large scale.
- f. The company needs to add more manpower to the goods inspection section to avoid congestion during the inspection process, improve the productivity and efficiency of employees' work, and provide employees with peaceful breaks without being rushed by queuing suppliers. This indirectly reduces fatigue and enhances employee concentration.



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- g. The company needs to add suggestion boxes for employees and customers in The Foodhall Senayan City store and in each branch. This will facilitate the company in analyzing and evaluating improvements and developments for the future. Suggestion boxes can be in written form with a specific form format or online with a barcode link attached.
- h. The company also needs to conduct socialization regarding every reward given to employees and any changes in the implementation of new policies. This ensures that all employees are informed about the related rewards, motivating them to work more enthusiastically and understand how to adhere to new rules without feeling pressured.
- i. The company can use the flow chart/process flow of the supply chain from goods entry to customers' hands, created by the author, as an additional company SOP.
- j. The company needs to reevaluate the completeness of Occupational Health and Safety (K3)/First Aid Kits (P3K) in every room within the store and each department. The author suggests that First Aid Kits be provided in every location and department.

### **2. Further Research**

The author recommends the following for future research

- a. The author suggests extending the analysis period for reversal data in subsequent research to obtain more accurate research results.
- b. The author recommends that future research conduct more specific analyses to explain the influence of the Seven Key Elements in SOP on Statistical Process Control (SPC). This can be achieved through the use of correlation analysis, six sigma, quantitative methods, or other applicable methodologies.

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