

ANALYSIS OF THE DEVELOPMENT AND INFLUENCE OF STANDARD OPERATING PROCEDURES (SOP) TO ASSESS THE EFFECTIVENESS OF THE WORK OF EMPLOYEES OF THE PRODUCTION DEPARTMENT OF PT. X SUMEDANG REGENCY, INDONESIA

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Abstract

Standard Operating Procedures (SOP) are essential to the smooth running of a company's quality objectives, so companies must incorporate them into their work productivity. PT. X is a manufacturing company in Indonesia engaged in the rubber and polyvinyl chloride (PVC) industry, focusing on the manufacture of raw rubber spare parts for vehicles into finished goods. PT. X faces challenges in implementing SOPs due to various obstacles encountered by production staff, such as high work pressure, limited working hours, piece-rate systems, inappropriate leadership styles, and insufficient employee understanding. This study aims to analyze the development and changes in production employees' performance in implementing SOPs, including the challenges and solutions faced by production employees during SOP implementation, the company's solutions to address the suboptimal implementation of SOPs, and the development and comparison of production employees' performance in implementing SOPs. This research uses qualitative data with purposive sampling techniques in sample collection, consisting of 13 respondents: 1 Division Heads, 1 Section Heads, 1 Team Leaders, and 10 Production Operators. Data analysis uses forecasting techniques by collecting interview data, with results based on the strongest and weakest data. The research results indicate that the implementation of SOPs at PT. X from Generation A (1997–2006) to Generation B (2006–present) has improved due to the simultaneous efforts of both superiors and subordinates through training, motivation, and appropriate leadership styles, thereby fully raising production employees' awareness of SOP implementation. As a result, the quality of the products produced has improved, and product returns have decreased.

Keywords: Developments and Changes (Standard Operating Procedures), Employee Performance.

Introduction

All companies have the same goal, which is to generate as much profit as possible (manufacturing companies) and provide perfect service in the eyes of consumers (service companies). Therefore, before implementing core business effectiveness, companies prepare strategies from all aspects, especially regarding internal company effectiveness rules. To achieve their primary objectives, companies establish rules that employees must follow to ensure that work processes run smoothly according to plan and are more structured in terms of work efficiency and employee performance. This is known as Standard Operating Procedures (SOP). Standard Operating Procedures (SOP) play a central role in the effectiveness of products and services within an organization/company, ensuring coordinated implementation while simplifying the process for employees to execute tasks in a regular and conducive manner, thereby making it easier for employees to understand their work (Nur'aini, 2020).

In accordance with Law No. 13 of 2003 concerning Labor: Article 35 paragraph (1) states that every company must have company regulations governing the rights and obligations of workers and employers, including clear work procedures, similar to SOPs, which outline the rules that must be followed by employees and the company/organization. Standard Operating Procedures (SOP) are a workflow process designed to guide employees in performing their work effectively to achieve optimal results in accordance with company regulations (Arief, 2020). The purpose of Standard Operating Procedures is to facilitate the implementation of the company's production activities through a written workflow established and determined by the company. Therefore, production employees must base their production activities on the SOPs established by the company to ensure that the product meets the company's specified standards (Nur'aini, 2020). Additionally, companies must also consider the mental state or condition of their employees and their performance. Many companies have experienced that their employees do not follow SOPs due to certain factors, such as work pressure, limited

working hours, incomplete tools, machine malfunctions (troubles), excessive work targets, unprofessional leadership, and so on. These factors have a significant impact that companies must consider to balance product and service quality with issues related to employee performance. According to Aulia Putri et al. (2025), employee performance evaluation is crucial for companies to measure, assess, and improve individual or overall company performance. Companies can assess the extent of employee underperformance and solutions to address these shortcomings by implementing motivation strategies to boost employee performance and providing the necessary tools, as outlined in the research objectives based on the problem statement:

1. To identify the obstacles faced by production employees when implementing SOPs, which prevent SOPs from being implemented optimally, and to find solutions.
2. To identify PT. X's solutions for addressing the suboptimal implementation of SOPs.
3. To track the progress of SOP implementation in production operations over time.
4. To assess the results and comparisons before and after employees implement SOPs, as well as the impact on product output.

Therefore, Standard Operating Procedures (SOP) are very important in the effectiveness of companies towards their employees, especially manufacturing companies that produce products. However, there are still companies that do not pay sufficient attention to and thoroughly examine the compliance of their employees in implementing these SOPs, necessitating an analysis to assess the extent to which employees have developed in applying SOPs to enhance production effectiveness (Muchlisin et al., 2022; Prasetyo & Andrianti, 2023).

PT. X, a manufacturing company in the rubber and polyvinyl chloride (PVC) industry that produces rubber spare parts for vehicles, located in Sumedang Regency, West Java Province, Indonesia, serves as a concrete example of this issue. It is mandatory to implement SOPs in production processes, as is the case with manufacturing companies across all industries worldwide. However, there is a gap between the implementation of SOPs in other general companies and PT. X. Generally, companies, especially manufacturing companies, automatically carry out work activities based on SOPs established by the company and strictly enforce SOP implementation in their operations (Rahmawati et al., 2024; Pratikno et al., 2023). Unlike PT. X, the company currently conducts production operations without emphasizing the established SOP procedures, as production employees have not fully understood the importance of SOP implementation. This is a critical issue as it affects the specifications of the products produced by the company, as well as the losses incurred by the company and consumers (Okpala & Korzeniowska, 2023). Previous research on the implementation of SOPs at PT. X found that the company prioritized the physical condition of the products produced without emphasizing the existing SOP procedures (as long as the products were good and perfect), without thoroughly analyzing that the perfection of the products was influenced by the SOP processes that must be carried out (Reitsma et al., 2023).

Therefore, the company assigned the internal audit team to review, assess, and determine the final outcome and solutions to prevent such issues from recurring (product defects) (Hakim & Suryatimur, 2022). Internal audit is a role assigned by the company to provide assurance and independent and objective consultation aimed at helping the company improve and evaluate activities within the company based on compliance with existing regulations (Judijanto et al., 2024; T. E. Putri et al., 2023).

Methods

This research method was conducted using a descriptive qualitative approach because the researcher wanted to review in depth by seeking informants, collecting, analyzing, interpreting data, and drawing conclusions about the effectiveness of the Standard Operating Procedures (SOP) of production employees at PT. X. Data collection was carried out using participant observation and interviews with several informants selected by the researcher from a sample group. Participant observation is a technique in which the researcher is directly involved in the activities of the object being studied (Romdona et al., 2025). The researcher included interview techniques to gain a deeper understanding of the research subject, making it more realistic and having multiple sources, as stated by Rachmad et al. (2024).

To determine the subjects to be selected by the researcher, the researcher used Purposive Sampling, which is a sampling method where the researcher selects several individuals who are most knowledgeable about the data or information needed by the researcher (Sulistiyono & Indonesia, 2023). In this study, the researcher selected 13 respondents as the sample, including: 1 Department Head, 1 Section Head, 1 Team Leader, and 10 Production Operators. Data analysis was conducted by collecting written responses from each respondent and then drawing conclusions using the forecasting method by selecting the strongest and weakest data (Rosenblad, 2021). The data sources used in this study were primary and secondary data. Primary data was obtained directly by the researcher from informants through interviews, while secondary data was obtained indirectly by the researcher from previous research journals and books related to the research topic. Data obtained from previous research journals were obtained from the Google Scholar journal provider website, and data obtained from books were obtained from the Google Books e-book website and physical books. Both types of data were

collected within a publication year range of up to 5 years from now so that the researcher could analyze them in accordance with the scope of the research and current developments.

Results and Discussions

PT. X has been established since 1997 and is known as a manufacturing company that pays its production employees on a piecework basis. The piecework wage system is a method of remuneration or payment based on the results or volume of work performed by individual production employees, without any restrictions on daily, weekly, or monthly income targets (Bagus, 2023). This system encourages individual productivity, leading to mass production of goods. However, a drawback of this system is that production employees tend to prioritize quantity over quality, resulting in suboptimal productivity in accordance with Standard Operating Procedures (SOPs). In this context, Standard Operating Procedures (SOPs) play a crucial role in ensuring consistency in quality, workplace safety, and process efficiency, thereby minimizing defective products (NG/Not Good) that impact overall work effectiveness (Kunwar et al., 2024).

The development of SOP implementation at PT. X can be seen from the differences between two leadership periods: Generation A (1997–2006) and Generation B (2006–present). Generation A implemented permissive SOP implementation, meaning that existing SOPs were not strictly enforced, and the company granted production employees freedom to enhance productivity without adhering to SOPs. This resulted in products that did not meet the specified quality standards. This occurred because the company was still in its early growth phase, prioritizing quantity over quality, which led to employees having limited understanding of SOPs. In Generation B, production is now required to follow established SOPs, so the company no longer prioritizes quantity alone but also systematically and formally focuses on quality.

The effectiveness of production employees' work is measured not only by the number of products produced but also by the quality of the products, as the products produced by PT. X pose risks to users, necessitating the company to improve operational efficiency (Lu et al., 2025). However, this creates a tension for the company in balancing the piecework system with the SOP compliance that production employees must adhere to. Therefore, to address this issue, the role of leaders becomes the appropriate solution to balance between the piecework system and compliance with SOPs that must be followed by production employees in terms of productivity (Sunarso, 2023).

Overall, the findings indicate that the successful implementation of PT. X's SOPs is influenced by leadership support to enhance employee work effectiveness, thereby motivating employees to follow formal production processes and avoid hindering income generation.

Challenges and solutions faced by production employees in implementing SOPs

Due to the changes and developments between Generation A and Generation B, employees who are comfortable in their previous positions (Generation A) will become an obstacle for employees to adapt to the latest changes (Annisa, 2024). The obstacles that arise are common obstacles that often occur when employees begin to adapt to these changes, such as:

1. Due to the requirement to follow SOP procedures, the products produced are slightly different from usual, which hinders income (due to the piecework wage system).

The solution implemented by PT. X production employees is to speed up their own work, so that the faster they work, the more they can balance the income generated from the products and the requirement to follow SOP procedures.

2. There are many types of products produced per day, so the SOPs that must be carried out also vary depending on the product type.

The solution implemented by PT. X production employees is to work on product types with more complex SOPs first, then move on to products with simpler SOPs. This approach helps to expedite the process and minimize time gaps caused by the differing SOPs for each product type. Additionally, it avoids any issues with SOP implementation when working hours are limited. Furthermore, employees address downtime caused by waiting for products to be processed by utilizing that time to perform production processes for other product types.

3. Pressure from superiors to meet daily targets. Although the work system and wages are based on a daily rate without specific work targets, it is still possible for superiors to assign tasks outside the scope of the current product, thereby increasing the number of products to be produced and extending the time required to implement SOPs for different products.

The solution implemented by PT. X production employees is to explain to supervisors that they should assign other employees with fewer production processes, or another solution is to divide the assigned

product quantities among peers (with the same job roles) to be completed fairly without overburdening any single employee.

4. Quality Control (QC) requirements for the final product, as each QC may have differing opinions.

The solution implemented by PT. X production employees is to adhere to the QC requirements and explain the differing opinions to the other QC to find a middle ground.

5. Limited working hours, forcing employees to choose between income targets and operational time.

The solution implemented by PT. X is to balance revenue targets with operational time constraints in SOP implementation, such as practicing extensively from small to high targets while balancing work time, finding unique tricks without altering SOPs, improving efficiency, and adapting to individual employees without changing product SOPs.

PT. X's solution to address SOPs not fully implemented by all production employees

The issue of SOPs not being fully implemented by some production employees is critical for the company, especially regarding product quality for consumers, which directly impacts company revenue. Therefore, the company decided to address this issue to ensure all production employees comply with and perform their tasks in accordance with SOPs in every aspect of their work. The solution implemented by PT. X involves providing material understanding of SOP implementation through training, offering motivation both mentally (personal motivation to encourage employees in performing their tasks) and visually (income bonuses, door prizes, vacations, and so on), and most importantly, applying the appropriate leadership style (fair, firm, clear, responsible, and highly professional) as discussed by (Azfa & Solihah, 2025). Leadership style is a leader's way of leading his company or group by influencing the mindset of his members through attitudes and behaviors that are in accordance with company goals (R. D. Z. Putri et al., 2024). Leadership style needs to be considered before ordering to its members, if the leadership style of a leader is hard then the employees will feel uncomfortable and feel burdened even though the performance is regular, but if the leadership style of a leader is soft employees will feel too comfortable so that they feel no restrictions at work or feel free to work without any rules. Both styles have their own advantages and disadvantages, so that a very effective leadership style to get good performance results and employees feel comfortable even though accompanied by rules is by balancing between the two traits, namely being a leader who has a fair, firm, straightforward, and responsible nature. As explained by Moh. Dwi Kharis Rifai (2024), the selection of the right leadership style can affect a more effective and responsive leadership approach in the future.

Until now, the company has made continuous developments by always assessing the performance of production employees to facilitate the company in making developments. Employee performance is an activity carried out by employees personally which is produced based on their thoughts (Silaen et al., 2021). Therefore, employee performance appraisals are mandatory for companies to facilitate and monitor the effectiveness of the performance of production employees at PT. X.

Development of SOP implementation in production employee operations

After researcher conducting an analysis of PT. X regarding Standard Operating Procedures (SOP) and their effectiveness on production employees, the results indicate that PT. X has improved over time compared to the A generation. The development from Generation A (1997–2006) to Generation B (2006–present) has been remarkably different. In Generation A, production employees still overlooked the importance of SOP implementation due to a lack of understanding of both the work environment and the material. Production employees in Generation A relied solely on manual labor to achieve production efficiency, following a simple process of “start – produce – finish” without prioritizing the importance of reporting work results. In contrast, in Generation B, PT. X began improving production processes by requiring production employees to adhere to SOPs to enhance production efficiency and product quality.

These differences were caused by several factors reviewed by the researcher at PT. X. In Generation A, production employees lacked understanding of the importance and impact of SOPs in performing production tasks, resulting in more products being imperfect or non-compliant with standards compared to compliant products. This led to numerous product returns from consumers to the company due to defective items upon delivery (Rakhman et al., 2024). As a result, the company suffered significant losses, both in terms of revenue and the loss of customers. As explained by Harahap et al. (2023) that employees without an understanding of the job have a serious impact on the company because employees play an important role in the existing management performance system both on company management and the company's production process.

In Generation B, changes and improvements in employee performance regarding SOPs were initiated. Employees began to adhere more strictly to the company's rules. The company decided to enhance efficiency on employee performance by enforcing discipline and requiring employees to follow the company's SOP regulations during production. Although this change was challenging for employees to adapt to, leaders sought to provide appropriate solutions. As a result, PT. X in Generation B has begun to operate more efficiently,

surpassing the performance of Generation A, due to increased understanding among production employees, supervisors providing proper guidance and encouragement, and the company's ability to support the improvements implemented.

Comparison of production employees' adherence to SOPs before and after the changes

During the implementation of improvements made by PT X, employee performance has become more effective and organized than before in generation A, in terms of the effectiveness of production employee performance and product quality has increased over time. In accordance with the analysis conducted, the implementation of training to increase understanding of the implementation of product SOPs to production employees has a positive effect on the quality of the products produced, the results of the interview stated that from the initial estimate of the number of return products from consumers of $\pm 70\%$ currently decreased to $\pm 30\%$. Although not yet classified as perfect, the company prioritizes the quality of products that will be sent to consumers by conducting repeated checks before being sent to consumers, this can minimize errors that will occur again. Table 1 compares the changes between generation A and generation B in implementing the SOP.

Table 1. Implementation of Standard Operating Procedures (SOP) for Production Employees at PT. X

| No | STANDARD OPERATING PROCEDURES (SOP) | IMPLEMENTATION OF SOP GENERATION A | | IMPLEMENTATION OF SOP GENERATION B | |
|----|---|------------------------------------|-------------|------------------------------------|-------------|
| | | Maximum | Not Maximum | Maximum | Not Maximum |
| 1 | Materials and sub material compound | ✓ | | ✓ | |
| 2 | Compound type suitability of each product item | ✓ | | ✓ | |
| 3 | Product size suitability | ✓ | | ✓ | |
| 4 | Machine temperature | ✓ | | ✓ | |
| 5 | Curing time | ✓ | | ✓ | |
| 6 | Machine condition | ✓ | | ✓ | |
| 7 | Finishing | ✓ | | ✓ | |
| 8 | Checking and packaging Product | ✓ | | ✓ | |
| 9 | Product storage compatibility by box color | | ✓ | | ✓ |
| 10 | Product quantity compatibility per box | | ✓ | ✓ | |
| 11 | Machine cleanliness or maintenance | ✓ | | ✓ | |
| 12 | Product measuring tools (micro meter, sigmat, jig, thickness bonding, etc.) | ✓ | | ✓ | |
| 13 | Work tools (scissors, cutter, marking pen, gloves, etc.) | ✓ | | ✓ | |
| 14 | Daily report | | ✓ | ✓ | |

Source: Data Processing Result Of PT. X, 2025

In Generation A, there were three SOPs that were not fully implemented for certain reasons, namely the suitability of product storage per box color, the suitability of the quantity of products per box, and daily reports. These SOPs have not been fully implemented because, at that time, employees in Generation A lacked understanding of the SOPs despite the rules already being in place. This was not considered a major issue affecting the final product quality, but it does not mean the SOPs were completely ignored; rather, they were not fully implemented or not all employees followed them. The third reason the SOPs were not fully implemented by Generation A employees: (1) The issue of product storage consistency by box color was not fully implemented due to the limited number of boxes for each color, as each color serves different purposes, resulting in mixed storage (no color separation). (2) Product quantity consistency per box was not fully implemented for products still in the follow-up process stage. Generation A employees still prioritize the final product quality and quantity per box, without considering that products still in the subsequent process must also meet the quantity per box requirement, so employees are still free to store products in boxes in any quantity. (3) The implementation of daily reports is not yet optimal because Generation A employees are only focused on products and the environment, which are still not strictly enforced or are still allowed to be flexible regarding daily reports.

Meanwhile, in Generation B, SOP implementation has begun to develop regarding rules that were not fully implemented in Generation A. However, in Generation B, there is one aspect that is not yet fully implemented: the consistency of product storage per box color. This has not been fully implemented because the number of boxes for each color is still limited, so Generation B employees still prioritize boxes for final products to be shipped to consumers, while products in the production process and defective products are still using whatever boxes are available.

The results of the comparison between generation A and generation B have similar SOPs that have not been maximized, namely the storage of products that have not been maximized from each box color. This does not mean that PT X is unable to provide, but many boxes are lost or damaged, many boxes are still outside the company environment or are still used for shipping, and the increase in product items from time to time. The increase in product items affects the number of boxes that must be increased and reproduced. The use of boxes of each color has different uses for each product, this is to facilitate the arrangement of products to be more effective and efficient (Sulaiman, 2021). So that to overcome the problem of boxes that are still limited in each color, now the company prioritizes the use of boxes for products that have important conditions, such as storage of products to be sent to consumers, storage of machine-processed products, storage of raw materials, and so on. Meanwhile, products that are still in the follow-up process still use boxes with existing colors (other than red because red boxes are boxes for defective goods).

The research results indicate that the implementation of SOPs at PT. X still faces challenges experienced by production employees. This is due to a lack of conducive discipline, resulting in production employees having insufficient understanding of SOPs, pressure from the piece-rate wage system, and weak periodic supervision. Therefore, the company decided to improve the situation by providing training, motivation, strict sanctions, and increasing the involvement of appropriate leadership styles. With these solutions, the implementation of SOPs has brought about rapid progress for the company, both in terms of product quality and quantity, as well as a significant reduction in product failure rates regarding product returns.

This synthesis of findings underscores the importance of leadership, training, and motivation in evaluating production employees regarding SOP implementation. However, this research has not yet comprehensively covered external factors such as technology or workplace culture. Therefore, further studies are recommended to expand the scope of analysis to include these dimensions, thereby yielding more in-depth and comprehensive insights into the effectiveness of the company's SOPs in supporting holistic operational efficiency.

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