

Observation of Sort, Set, Shine, Standardize, and Sustain in a Manufacturing Company Surabaya

Muhammad Aji Satria¹, Meirina Ernawati², Bagus Wicaksono³, Sahrir Sillehu⁴

¹Master of Occupational Health and Safety, Faculty of Public Health, Universitas Airlangga, Indonesia

²Department of Occupational Safety and Health, Faculty of Public Health, Universitas Airlangga, Indonesia

^{1,2}Campus C Mulyorejo, Surabaya, East Java 60115 Indonesia

³EHS Head Department of PT. Albea Rigid Packaging Surabaya, Indonesia

Rungkut Industri IV No.23, Surabaya, East Java 60293 Indonesia

⁴STIKes Maluku Husada, Indonesia

Jl. Kebun Cengkeh, Batu Merah, Sirimau District, Ambon City, Maluku 12345 Indonesia

ABSTRACT

Introduction: The implementation of the Occupational Health and Safety system in industry aims to create a workplace that is safe, healthy, and free from environmental pollution so that it minimizes the probability of occupational accidents and illness. The arrangement of goods and comfortable work environment can affect labour productivity. Creating an orderly and comfortable working environment can be manifested in a good Sort, Set, Shine, Standardize (5S) application. The purpose of this study is to describe the implementation of the 5S program in PT Albea Rigid and Packaging Surabaya. **Method:** This research was a descriptive qualitative research. The data used in this study were secondary data which were obtained from the EHS Department of PT. Albea Rigid Packaging Surabaya which were later analyzed using several theoretical references. Variables in this research were observation of Sort, observation of Set, observation of Shine, observation of Standardize and observation of Sustain. The analyzed data were further interpreted and presented in a narrative form. **Results:** The results show that the implementation of 5S in the Injection Molding Production area of PT. Albea Rigid Packaging Surabaya, before the socialization, had a score of 16 points and after the socialization it increased to 40 points. Even though the score has increased, the implementation of the 5S was still not running optimally. **Conclusion:** The principle of Standardize still had the same score before and after the socialization, while for the other 3 principles, namely Sort, Set and Shine, there was an increase in points after the socialization.

Keywords: secure work, set, shine, sort, standardize, sustain

Corresponding Author:

Muhammad aji satria

Email: muh.aji.satria-2019@fkm.unair.ac.id

Telephone: +6282259973498

INTRODUCTION

The implementation of the Occupational Health and Safety system (OHS) in industry aims to create a workplace that is safe, healthy, and free from environmental pollution so that the probability of occupational accidents and illness can be minimized. The arrangement of a good and comfortable work environment can affect labour productivity (Yenita, 2017). Housekeeping-related jobs such as sweeping, mopping, or cleaning the workplace should also avoid the occurrence of work accidents. Housekeeping is crucial to cultivate a good work environment. In creating an orderly and comfortable

working environment, the implementation of a good 5S needs to be manifested (Suma'mur, 2013).

5S consists of the five Japanese words: Seiri (Sort), Seiton (Set), seiso (Shine), Seiketsu (Standardize) and Shitsuke (Sustain). This system is used as a substructure to achieve an integrated management system. Organizations without a complete understanding of real obstacles of the implementation of 5S with no doubt will fail. The full advantages of 5S cannot be practiced in the business sector until all of these factors connected with implementation of this technique are recognized, fully understood and addressed (Daraei *et al.*, 2015).

Through the 5S principle, the management can make a quality work environment that is comfortable, clean and safe in the organization and can ensure the fulfilment of standards, which will further help sustain the work improvement. The

Cite this as: Satria, M. A. et al. (2022) 'Observation of Sort, Set, Shine, Standardize, and Sustain in a Manufacturing Company Surabaya', *The Indonesian Journal of Occupational Safety and Health*, 11(2), pp. 195-203.

5S principle is a tool for continuously improving the lean management processes, which creates a highly efficient, clean, and ergonomic working environment. However, efforts and participation from top management are key factors that determine the success of the 5S practice (Houa *et al.*, 2018). The 5S implementation will be reached and applied with support from all parties involved, starting from low management, middle management and top management (Christian, 2018).

PT. Albea Rigid Packaging Surabaya is a manufacture company that produces plastic packaging for cosmetics, stocked items, and custom orders for packaging lipsticks, bottles and jars. The 5S implementation at PT. Albea Rigid Packaging Surabaya, especially in the area of Injection Molding Production, has not been carried out optimally. There are several types of machines and supporting tools that are used in the injection molding area, where most of the workforce is associated with these machines. These machines certainly possess hazards which may harm workers. The importance of proper arrangement and regular maintenance can reduce unsafe conditions. The optimum conditions of work environment in the production area must always be maintained in order to gain maximum productivity. Therefore, the implementation of 5S in the Injection Molding Production area of PT. Albea Rigid Packaging Surabaya is very important. The purpose of this study is to describe the implementation of the 5S program in PT Albea Rigid and Packaging Surabaya.

METHODS

The method used was qualitative research method. The data used in this study were primary data obtained through observation, and the secondary data were obtained from the EHS Department of PT Albea Rigid Packaging Surabaya which were later analyzed using several theoretical references. Observations were carried out in the vicinity of workers of the Injection Molding area of PT. Albea Rigid Packaging Surabaya based on the 5S observation checklist instrument of PT. Albea Rigid Packaging Surabaya. This research was conducted at PT Albea Rigid Packaging Surabaya in June 2021. 5S audit in this company was carried out once a year, specifically in the middle of the year. Early observation was made in early June. Socialization about the implementation of 5S was conducted in the middle of June by the EHS department of PT.

Albea Rigid Packaging Surabaya. The socialization process began with a pre-test and ended with a post-test to measure the understanding of workers about 5S. The second observation was carried out at the end of June. The credit score in this study was based on a checklist from PT. Albea Rigid Packaging Surabaya which was sourced from the company’s 5R audit checklist. The initial score was obtained during the early observation and the latter score was obtained after the second observation. Variables in this research were observation of Sort, observation of Set, observation of Shine, observation of Standardize and observation of Sustain. The analyzed data were interpreted and presented in a narrative form. This research has obtained an ethical certificate from the Health Research Ethical Clearance Commission, Faculty of Dental Medicine Universitas Airlangga in 2021 with an approval number 287/HRECC.FODM/VI/2021.

RESULTS

Sort

Based on the results of the 5S checklist in the Sort principle before the 5S program socialization was carried out, in the availability of goods category, it was found that there were more than 3 items in unused condition, so they had a score of -2.

Table 1. Results of a Sort Principle Observation in the Injection Molding Area in 2021

| Category | Actual Condition | Credit | Score | |
|-----------------------|---|--------|--------|-------|
| | | | Before | After |
| Availability of Goods | There were > 3 items in unused condition | -2 | | |
| | There were 1-3 items in unused condition | 4 | -2 | 8 |
| | All items were in used condition | 8 | | |
| Speed | Item Searching > 1 minute | 0 | | |
| | Item Searching took no more than 1 minute | 8 | 0 | 8 |

Moreover, the score for item searching by workers was carried out more than 1 minute, so it had a score of 0.

Based on the results of the 5S checklist in the Sort principle after the 5S program socialization was carried out, in the availability of goods category, it was found that all items were in used condition so that they had a score of 8. Moreover, the score for item searching by workers was carried out no more than 1 minute, so it had a score of 8.

Set

Based on the results of the 5S checklist in the Set principle before the 5S program socialization, in the general category, it was found that all items and goods had a label or identity, so they had a score of 1. In the Red Tag Area category, there were > 3 items a week, so it had a score of 0. Furthermore, in the arrangement of goods category the goods were not placed in accordance with the 3R area mapping, so it had a score of -2.

Table 2. Results of a Sort Principle Observation in the Injection Molding Area in 2021

| Category | Actual Condition | Credit | Score | |
|----------------------|--|--------|--------|-------|
| | | | Before | After |
| General Assessment | All items and goods had a label or identity | 1 | | |
| | There was a Poké Yoke system in the storage area | 7 | 1 | 1 |
| | There was a classification of goods (goods were not mixed) | 15 | | |
| Red Tag Area | There were > 3 items a week | 0 | | |
| | There were 1-3 items a week | 5 | 0 | 0 |
| | There were no items | 10 | | |
| Arrangement of goods | Items were not placed according to the 3R area mapping | -2 | | |
| | Goodswere placed in accordance with the 3R area | 4 | -2 | -2 |

Shine

Based on the results of the 5S checklist in the Shine principle before the 5S program socialization, in the general assessment category, it was found that there were few patches / writings / scribbles that were not updated in the work area / machine or information media, and hence they had a score of 1. In the category of cleaning appliance, cleaning tools were not available at all so they had score of 0. In the cleaning frequency category, the cleaning of the work area was sometimes carried out according to schedule, so it had a score of 5. In the Office / Factory Area category, there were 1-3 items littered by trash / dust / products / cobwebs, so they had a score of 8. In the Machine category (Injection Molding), there were > 3 machines that had oil spills on the engine body, so they had a score of 2.

Based on the results of the 5S checklist in the Shine principle after the 5S program socialization, in the general assessment category, there were few patches / writings / scribbles that were not updated in the work area / machine or information media, and hence they had a score of 1. In the category of cleaning appliance, cleaning facilities / tools were available but not in accordance with the type, quantity and placed in proper areas, so they had a score of 2. In the cleaning frequency category, the cleaning of the work area was sometimes carried out according to schedule, so it had a score of 5. In the Office / Factory Area category, there were 1-3 items littered by trash / dust / products / cobwebs, so they had a score of 8. In the Machine category (Injection Molding), there were > 3 machines that had oil spills on the engine body, so they had a score of 2.

Standardize

Based on the results of the 5S checklist in the Standardize principle before the 5S program socialization, in the follow up category, there was more than 1 type of recurring findings during the previous 1 month, so the score was -3. Moreover, in the category of duties and responsibilities, there were assignments but the 5S program was not clear from the person in charge (PIC) of the area, so it had a score of 4.

Based on the results of the 5S checklist in the Standardize principle after the 5S program socialization, in the follow up category, there was more than 1 type of recurring findings during the previous 1 month, so the score was -3. Furthermore, in the category of duties and responsibilities, there

Table 3. Results of a Shine Principle Observation in the Injection Molding Area in 2021

| Category | Actual Condition | Credit | Score | |
|----------------------|---|--------|--------|-------|
| | | | Before | After |
| General Assessment | There were patches / writings / scribbles that were not updated in the work area / machine or information media | 1 | 1 | 1 |
| | There were no patches, writings and scribbles that were not updated in the work area / machine or information media | 5 | | |
| Cleaning Appliance | Cleaning facilities/ tools not available at all | 0 | | |
| | Cleaning facilities / tools were available but not in accordance with the type, quantity and placed in proper areas | 2 | 0 | 2 |
| | Cleaning facilities / tools were available in accordance with the type, quantity and placed in proper areas | 5 | | |
| | There were > 3 items littered by trash / dust / products / cobwebs | 2 | | |
| Office/ Factory Area | There were 1-3 items littered by trash / dust / products / cobwebs | 8 | 8 | 8 |
| | The entire location / environment was very clean | 15 | | |
| Machines | There were > 3 engines with oil spills on the engine body | 2 | | |
| | There were 1-3 engines that had oil spills on the engine body | 8 | 2 | 2 |
| | No oil spills on the engine body | 15 | | |

Table 4. Results of a Standardize Principle Observation in the Injection Molding Area in 2021

| Category | Actual Condition | Credit | Score | |
|-----------------------------|--|--------|--------|-------|
| | | | Before | After |
| Follow Up | > 1 type of finding repeated during the previous 1 month | -3 | | |
| | 1 type of finding repeated during the previous 1 month | 6 | -3 | -3 |
| Duties and Responsibilities | There were no recurring findings during the previous 1 month | 12 | | |
| | There was job distribution and no monthly 5S program from the PIC of the area | -3 | | |
| | There was no assignment, but there was a 5S program from the PIC of the area | 1 | 4 | 4 |
| | There were assignments but the 5S program was not clear from the PIC of the area | 4 | | |
| | There was job distribution and all 5S programs were clear from the PIC of the area | 8 | | |

were assignments but the 5S program was not clear from the PIC of the area, so it had a score of 4.

Sustain

Based on the results of the 5S checklist in the Sustain principle before the 5S program socialization, the total of overall score was 14. Based on the results of the 5S checklist in the Sustain principle after the 5S program socialization, the total of overall score was 40.

Table 5. Results of a Sustain Principle Observation in the Injection Molding in 2021

| | Category | Score | |
|--------------|-----------------------------|--------|-------|
| | | Before | After |
| Sort | Availability of Goods | -2 | 8 |
| | Speed | 0 | 8 |
| Set | General Assessment | 1 | 1 |
| | Red Tag Area | 0 | 0 |
| | Arrangement of Goods | -2 | 4 |
| Clean | General Assessment | 1 | 1 |
| | Cleaning Appliance | 0 | 2 |
| | Cleaning Frequency | 5 | 5 |
| | Office/Factory Area | 8 | 8 |
| Maintain | Machines | 2 | 2 |
| | Follow Up | -3 | -3 |
| | Duties and Responsibilities | 4 | 4 |
| Total | | 14 | 40 |

DISCUSSION

The 5S program is a very simple concept originating from Japan. 5S is the initial letter of five Japanese words namely Seiri, Seiton, Seiso, Seiketsu and Shitsuke which in Indonesian are translated into 5S Programs, namely Sort, Set, Shine, Standardize, and Sustain. The 5S Movement / 5S Program is a movement that implements all of these five words.

Sort

5S is a Japanese method of organizing the workspace in a clean, efficient and safe manner in order to achieve a productive work environment. The 5S is the starting point for any company that wants to be recognized as a responsible producer (Veres *et al.*, 2018) Sort means arranging everything, sorting items according to certain rules or principles, and setting aside unnecessary items at work and throwing them away. That includes sorting outwork-in-process, unnecessary tools, unused machines, defective products, and papers and documents. The benefits of sorting include a more effective use of space, simplified tasks, a reduction in hazards, and a significant decrease in distracting clutter (Pallawi, 2018). According to Osada (2014), Sort means

distinguishing between what is needed and what is not needed.. Sort also means removing all surplus items from the work center which are not needed for the immediate continual operations (Agrahari *et al.*, 2015). The Sort principle is the first step in the implementation of the 5Ss. Based on the results of the 5S checklist before the 5S program socialization was carried out, in the availability of goods category, there were more than 3 items in unused condition, so they had a score of -2. This is because in the vicinity of the Injection Molding machine area of PT Albea Rigid and Packaging, there were more than 3 unused items such as unused paper, unused baskets and an accumulation of boxes or baskets around the machine area. Furthermore, in regards to the speed category, the search for goods by workers was carried out more than 1 minute, so it had a score of 0. This is because in work areas such as office desks or spare part tooling areas there are still many items that are not needed.

Then, after the socialization of the 5S program there was a change in the checklist score summary. In the category of availability of goods, changes that occurred in the work area included the condition that all goods were in used condition, such as good baskets for goods that would be marketed later, rejected baskets for goods that were damaged or defective, supporting tools, and work tables. Also, there were no excessive stacked boxes. Furthermore, in the category of speed of searching for goods by workers, the change that occurred was that the search for goods took no more than 1 minute. This is because after the socialization of the 5S program, Sort activities have been carried out at the office desk and tooling spare parts so as to remove unnecessary items in the work area, causing the search for goods or tools to be faster.

This is in line with research conducted by Setyanto (2015) which stated that Sort is the first step of the 5Ss and is a very strategic step. This activity must be carried out by workers so that the work activity process is not hampered. If the company does not implement the 5S, it can affect the performance of the workers, which in turn can cause a decrease in productivity due to a decrease in work spirit.

Set

The second step is Set, which means to put the things which are required in a specific position. Set is the process of reducing time consumed to retrieve and store items (Chourasia and Nema, 2016). Set

means designing the work area for effective work by keeping tools and important materials nearby in the workplace (Singh *et al.*, 2015). According to Osada (2014), Set means determining a neat layout so that workers can always find the items needed. Set is the process of eliminating the wasted time that is used to retrieve and store items. Based on the results of the 5S checklist sheet in the general category, all items and goods had a label or identity, so they had a score of 1. This is because in the document cabinet, folder and document holders had a marker label but still have not implemented a poka yoke method and classification of goods. After the 5S program socialization was carried out, there were no changes in the general category. This is because in the document cabinet there has not been a poka yoke method and classification of goods, so there has been no change in the score. Based on Shigeo Shingo in Hudori and Simanjuntak's (2017) research, poka yoke is a theory developed by an engineer from Japan named Shigeo Shingo. Poka yoke comes from Japanese which means mistake proofing or error proofing, which is translated into Indonesian as anti-error. Poka is translated as error, and yoke (yokeru) is translated to prevent. Its purpose is to prevent or attract people's attention when things go wrong.

In the Red Tag Area category, there were > 3 items a week, so it had a score of 0. This is because there were many boxes or baskets in the wip box area that were still waiting for processing, causing accumulation of more than 3 items a week. After the 5S program socialization was carried out, there was no change in the score in the Red Tag area category. This is because the goods are produced very quickly, and there are some production goods that are still waiting for parts from other production machines which cause the accumulation of goods of more than 3 items a week. The existence of work in process (wip) goods along the production road can narrow the production lane and pedestrian areas, so red tagging is needed (Hazmi *et al.*, 2012)

The arrangement of goods category was not placed in accordance with the 3R area mapping, so it had a score of -2. This is because in the machine area there were still a lot of items that did not fit into the place, so the area looked messy. After the 5S program socialization was carried out, the changes that occurred were that the items in the work area were placed in accordance with the 3R area mapping, so they were given a score of 4. The importance of area arrangement and area mapping is explained in the Regulation of the Ministry of Manpower (2018),

namely the obligation to arrange tools and materials in accordance with the determined position. Work tools and materials must be arranged and stored neatly and in an orderly manner to ensure a safe work environment.

Shine

The third principle is Shine. According to Osada (2014), Shine means removing rubbish, dirt and unused items to get a cleaner workplace. It also means that the workspace and all equipment are cleaned and kept clean and ready for the next worker (Jiménez *et al.*, 2015).

According to Osada (2014), Shine means removing rubbish, dirt and foreign items to get a cleaner workplace. Based on the results of the 5S checklist sheet in the general assessment category, there were few patches / writings / scribbles that were not updated in the work area / machine or information media, and hence they had a score of 1. This is because there was a 3S sheet patch that was not updated in the work area / machine. After the 5S program socialization was carried out, there was no change in the writing on the work area or machines. According to Mubarok (2018), labeling aims to help people prevent operational errors, be alert to hazards and instructions, and demonstrate preventive maintenance. It is therefore recommended that in the work area there is tool inspection labels, both weekly, monthly and yearly. Equipment must be labeled with its name and function.

In the category of cleaning appliance, cleaning tools were not available at all, so they had a score of 0. However, after the socialization of the 5S program, cleaning tools were available but still not sufficient in number and were in incorrect placement according to the provisions of each area. This is because the cleaning tools provided by the company were not placed in place by workers after used.

In the cleaning frequency category, cleaning the work area was sometimes carried out according to schedule so that it had a score of 5. After the socialization of the 5S program, there was no change in cleaning because the program has just been implemented. In the Office / Factory Area category, there were 1-3 items littered by trash / dust / products / cobwebs, so they had a score of 8. After the 5S program socialization, there was no change in the cleanliness in the office area. In the Machine category (Injection Molding) there were > 3 machines that had oil spills on the engine body, so they had a score of 2. After the socialization of

the 5S program, there was no change in oil spills on the engine body. According to Siska and Sari (2016), the clean design planning for work stations such as cleaning on a large scale involves mechanics and staff who work at the company and partial cleaning. Partial cleaning is a cleaning activity that is not done as much as in the first stage. Those who are responsible for this partial cleaning are the mechanics who work at the work station, by not allowing garbage and tools that have been used to be left over. This activity is done in the Shine planning application, which takes 2-5 minutes to clean up the work station together before or after work.

Standardize

The fourth principle is Standardize. According to Osada (2014), Standardize means keeping things in order, set and clean, yet still in the personal aspect. Standardize means to constantly and repeatedly maintain Sort, Set and Shine. Thus, Standardize includes personal and environmental hygiene. Standardize also means turning a one-time event into the way one conducts business. Creation of new habits and levels of performance are the most difficult step because the expectations are framed. Making new habits needs constant reinforcement and time before the new habits transform to new standards (Sharma and Lata, 2018).

Standardize means make a consistent way of carrying out tasks and standardization of procedures. This method is used to maintain the first three steps in the 5S concept. It can be defined as the outcome of properly maintaining Sort, Set and Shine. The basic purpose of Standardize is to prevent setbacks in the first three steps, to implement them into a daily habit and to make sure that all three steps are maintained in their fully implemented state. In other words, Standardize combines those three steps into a unified whole. Sustain means to make a habit of properly maintaining correct 5S procedures forever (Kendangamuwa *et al.*, 2015).

Based on the results of the 5S checklist in the Follow Up category, there was more than 1 type of recurring findings during the previous 1 month, so the score was -3. After the 5S program socialization had been carried out, there were no changes in the types of findings. This is because the Injection Molding area of PT. Albea Rigid and Packaging has never conducted 5S-related audits, which led to repeated findings. Furthermore, in the category of duties and responsibilities, there were assignments but the 5S program was not clear from the PIC area

so that it had score of 4. After the socialization, there was no change in the score. This is due to the Injection Molding area of PT. Albea Rigid and Packaging has not had a clear 5S program. The existing program only concerns cleaning that is conducted by cleaning service officers.

Based on Setyanto (2015), there is a need for counseling from the unit leader so that workers are always aware to take care of tools and goods so they are not easily damaged. If the goods and tools are easily damaged, the costs incurred by the company will increase. The first step in implementing maintenance in work environment according to Rochmanto (2015) is making 3R work standardization (sort, set, shine). The work that has been done in 3R (Sort, Set and Shine) is standardized in written rules (standard operating procedures). The standards are determined based on mutual agreement by also taking into account the results that have been obtained. Then, the second step is to communicate existing standards to employees. The communication can be in the form of standard 5S training activities, coordination in each section during pre-work briefings, and dissemination of posters or banners in the work area.

Sustain

The fifth principle is Sustain. According to Osada (2014), Sustain means having personal discipline. This involves the implementation of Sort, Set, Shine and Standardize constantly and efforts to make these activities a habit in daily life. Sustain refers to maintaining standards and keeping the facility in a safe and efficient order day after day, year after year. The implementation of the 5S principle will demand workers the compact self-discipline connected with the implementation and compliance with the rules of regularity in cleaning and sorting. This leads to increased awareness of staff, improvements in the internal communication, a decrease in the number of nonconforming products and processes, and improved relation between workers. It is also important to understand the need to carry out routine inspections on the implementation of the 5S rule. This inspection is executed using a check list and is created on the basis of the radar graph of the 5S (Ashraf *et al.*, 2017).

Sustain relates to employee habits that must be nurtured in order to maintain and improve what is already good. Implementing a Sustain principle at work means maintaining and improving what

is already good or developing positive habits at work. One way to find out the value of this habit is by conducting an audit or doing a 5S checklist at work. Although in this study Sustain was still in bad category, there were significant changes considering that the socialization of the program had only been running for 2 weeks (Jerik and Prasetyo, 2019).

To increase the score in the implementation of the 5S program, the company can implement the 5S performance visualization. Nusannas (2016) in his research stated that every implementation of 5S has a good purpose and positive impact in supporting the achievement of a company's vision as expected, namely the creation of a clean, set, organized work environment that can induce higher discipline at work. To ensure good and consistent management, transparency is needed through the visualization of 5S performance reporting. The report should be cascaded to all parties involved including top management or even customers. The implementation of the 5S territorial visual management system in several companies uses a 5S board or card game that is easily accessed by anyone through the presentation of important information about the implementation of the 5Ss and problems found such as 5S audit schedule, 5S audit results, progress that has been made in carrying out 5S, reports of problems that occur, location of problems, who is responsible for the problems found, and the status of resolutions whether they have been implemented or not.

Standardize means turning a one-time event into the way one conducts business. This step is the most difficult one because the creation of new habits and levels of performance expectations are framed. Forming new habits requires constant reinforcement and time before the new habits transform to standards (Sharma and Lata, 2018). Meanwhile, Sustain has some benefits including the employee involvement which helps to boost the moral value of employees, positive work environment and properly organized work culture (Thapa, Gupta and Qureshi, 2020). The need for having a 5S method implemented represents one of the first steps taken in the Lean Management strategy, which results in the increase of the productivity of the organization. Moreover, due to 5S, the factory becomes a cleaner place, the safety at workplace and the product quality increases, the problems are easy to detect and prevent, waste and costs are reduced, and the products or services fulfill the customer needs in the most efficient manner. Conversely, the lack of efficiency and organization at workplace leads to

waste of time and resources, low quality products, disorganization, safety problems, delivery delays and so on (Veres *et al.*, 2018).

CONCLUSION

Assessment of the 5S application in the Injection Molding Production area of PT. Albea Rigid Packaging Surabaya before the socialization got 16 points, and after the socialization it increased to 40 points. Even though the points have increased, the implementation of the 5S was still not running optimally. There was still no increase in points in the Standardize category even after the socialization. Meanwhile, while for the other 3 categories, Sort, Set, and Shine, the points increased after the socialization program.

ACKNOWLEDGEMENTS

We would like to send our deepest gratitude to PT. Albea Rigid Packaging Surabaya who has given us their permission to carry out this study. The authors also would like to thank all those who have contributed to the writing of this journal. Lastly, the authors would thank the journal review team who have provided input to this journal and successfully sent it to the journal website.

REFERENCE

- Agrahari, R. S., Dangle, P. A. and Chandratre, K. V (2015) 'Implementation Of 5S Methodology In The Small Scale Industry A Case Study', *International Journal of Scientific & Technology Research*, 4(4), pp. 180–187.
- Ashraf, S. R. Bin, Rashid, M. M. and Rashid, D. A. R. M. H. (2017) 'Implementation of 5S Methodology in a Food & Beverage Industry: A Case Study', *International Research Journal of Engineering and Technology*, 4(3), pp. 1791–1796.
- Chourasia, R. and Nema, A. (2016) 'Review on Implementation of 5S methodology in the Services Sector', *International Research Journal of Engineering and Technology (IRJET)*, 3(4), pp. 1245–1249.
- Christian, R. S. (2018) 'Penerapan Evaluasi Ringkas, Rapi, Resik, Rawat, Rajin Pt. Inka (Persero) Madiun', *The Indonesian Journal of Occupational Safety and Health*, 7(1), pp. 11–19.
- Daraei, R. M. *et al.* (2015) 'Identifying and Ranking the Critical Success Factors Affecting

- Implementation of 5S', *American Journal of Service Science and Management*, 2(6), pp. 67–73.
- Hazmi, F. W., Karningsih, P. D. and Supriyanto, H. (2012) 'Penerapan Lean Manufacturing Untuk Mereduksi waste di PT ARISU', *Jurnal Teknik ITS*, 1(1), pp. 135–140.
- Houa, S. C. et al. (2018) 'Implementation of 5S in Manufacturing Industry: A Case of Foreign Workers in Melaka', *MATEC Web of Conferences*, 150, pp. 1–5.
- Hudori, M. and Simanjuntak, J. M. (2017) 'Poka Yoke untuk Pembuatan Palet Package Information di Bagian Shipping', *Industrial Engineering Journal*, 6(1), pp. 16–21.
- Jerik, F. and Prasetyo, W. (2019) 'Penerapan Dan Efektifitas 5s Di Perusahaan Retail Makanan', *G-Tech: Jurnal Teknologi Terapan*, 3(1), pp. 198-201.
- Jiménez, M. et al. (2015) '5S methodology implementation in the laboratories of an industrial engineering university school', *Safety Science*, 78, pp. 163–172.
- Kendangamuwa, K. W. C. U. K. et al. (2015) 'Factors Contributing To The Sustainability Of 5S Programmes In Government Hospitals In Regional Director Of Health Services Area Kurunegala', *International Journal of Scientific & Technology Research*, 4(3), pp. 83–87.
- Ministry of Manpower (2018) Permenaker Nomor 5 Tahun 2018 Tentang Keselamatan Dan Kesehatan Kerja. Jakarta: Ministry of Manpower. (no date).
- Mohan Sharma, K. and Lata, S. (2018) 'Effectuation of Lean Tool "5S" on Materials and Work Space Efficiency in a Copper Wire Drawing Micro-Scale Industry in India', *Materials Today: Proceedings*, 5(2), pp. 4678–4683.
- Mubarok, R. (2018) *Pelaksanaan Ringkas, Rapi, Resik, Rawat, Rajin (5R) Bengkel Teknik Kendaraan Ringan SMK Muhammadiyah Pakem Dalam Mewujudkan Sekolah Berbasis Industri*. Undergraduate Thesis. Yogyakarta: Faculty of Engineering Universitas Muhammadiyah Yogyakarta.
- Nusannas, I. S. (2016) 'Implementasi Konsep Budaya 5R (Ringkas , Rapi , Resik , Rawat Dan Rajin)', *Jurnal Ekonomi dan Bisnis*, 4(1), pp. 93–106.
- Osada, T. (2014) *Sikap Kerja 5R*. Jakarta: Ppm.
- Pallawi, S. (2018) 'Impact Of 5s Methodology On The Efficiency Of The Workplace: Study Of Manufacturing Firms', *International Journal of Research in Commerce & Management*, 9(December), p. 14016.
- Rochmanto, D. P. (2015) *Penerapan Ringkas, Rapi, Resik, Rawat Dan Rajin (5R) Dalam Upaya Pengendalian Kebakaran Di Unit Produksi 2 PT. Kutai Timber Indonesia (KTI)*. Undergraduate Thesis. Jember: Faculty of Public Health Universitas Jember.
- Setyanto, G. E. (2015) 'Analisis Kebijakan Perusahaan Dan Partisipasi Tenaga Kerja Pada Bagian Produksi Terhadap Penerapan 5R PT. Maritim Barito Perkasa', *The Indonesian Journal of Occupational Safety and Health*, 4(1), pp. 74–82.
- Singh, S. et al. (2015) 'Identification of Factors which are Affecting for Effective Implementation of 5S Technique in SMEs of Vadodara Region', *International Journal on Theoretical and Applied Research in Mechanical Engineering*, 4(3), pp. 29–33.
- Siska, M. and Sari, L. F. (2016) 'Analisis Prinsip Kerja 5S dan Motivasi Karyawan di PT. Jasa Barutama Perkasa Pekanbaru Riau', *Jurnal Sains, Teknologi Industri*, 14(1), pp. 57–65.
- Suma'mur (2013) *Higiene Perusahaan Dan Kesehatan Kerja (Hiperkes)*. Jakarta: Sagung Seto.
- Thapa, H. L., Gupta, A. K. and Qureshi, I. (2020) 'Implementation of 5S System in the Small & Medium Scale Industry', *International journal of Research science and Management*, 7(7), pp. 23–27.
- Veres, C. et al. (2018) 'Case Study Concerning 5S Method Impact in an Automotive Company', *Procedia Manufacturing*, 22, pp. 900–905.
- Yenita, R. N. (2017) *Higine Industri*. Edisi 1 Cetakan 1. Yogyakarta: Deepublish.