

THE IMPLEMENTATION OF 5S WORK CULTURE (*SEIRI, SEITON, SEISO, SEIKETSU* AND *SHITSUKE*) AT KHANSA OTO CARE

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Abstract. Khansa Oto Care is a service provider to pamper vehicles with its services, namely car wash, nitrogen filling, oil and air filter change service, and accessories sale to make vehicles interiors comfortable. The work environment has not implemented the 5S system such as unused items are present in the work environment (*Seiri*), items have no storing place (*Seiton*), there is a lot of oil and plastic waste (*Seiso*), lack of caring for work equipment (*Seiketsu*), and the lack of the workers discipline in implementing the work culture (*Shitsuke*). The purposes of this research were to implement the 5S Work Culture and to find out its effect on the workers activities after the implementation. The approach taken was by observation, distributing questionnaires using the Likert scale method, interviews, and documentation of the 5S implementation. Based on the implementation of the 5S Work Culture, it provided comfort and flexibility for the workers in carrying out their work (*Seiri*), it eased the workers to find the work items (*Seiton*), it provided comfort for the workers in doing their work (*Seiso*), it made the work equipment always in an optimal condition and reduced the risk of machine damage, thus, it could minimize the equipment damage cost (*Seiketsu*), and as an implementation form of commitment of the owner and the work (*Shitsuke*). Based on the program score, the score before the 5S implementation was 34.3% which was in the category of bad. After the implementation, it showed the score of 92.5% which was in the category of very good. It means that all of the workers recognized that the 5S Work Culture had a good impact on the work environment.

Keywords : work culture, 5S, likert scale

1. INTRODUCTION

Technological development gives birth to the change of motorized vehicles from time to time, the examples are cars and motorcycles. Cars and motorcycles are vehicles that are commonly used as a means of daily transportation by individuals and companies. Every day, other than as a means of personal transportation, motorized vehicles are also used for public transportation. The growth of motorized vehicles is increasing rapidly and continuously each year [1]. Each vehicle has different specifications, in terms of engines, features, security systems, and others.

The thing that needs to be considered on a motorized vehicle is to maintain it periodically with various degrees of difficulty. A short-term or routine maintenance can be done alone such as cleaning or washing, controlling brakes, checking fuel adequacy, lights and others. In addition to the routine maintenance, it is necessary to change the oil and air filter regularly, wash the parts that are difficult to clean by our self and check the air pressure. Extra care is needed when the vehicle owner starts to feel uncomfortable with the condition of his/her vehicle. It can be done by visiting the vehicle salon services. Cars need to be maintained and serviced regularly and periodically so that they will always be in a top condition and ready to be used by the owners at any time [2]. In addition to having the advantages of making a dull vehicle shiny, it can also make the vehicle interior clean in detail and smells good so it will be very comfortable when it is being used.

Khansa Oto Care is a service provider to pamper vehicles with its services, namely car wash, nitrogen filling, oil and air filter change service, and also accessories sale to make vehicle interiors comfortable. To ensure

this, Khansa Oto Care applies a clean culture, equipment has its own place, the floor is clean from oil spill, and the workers are committed to maintain it which are in accordance with the 5S goals (*Seiri, Seito, Seiso, Seiketsu, and Shitsuke*) to maintain safety, comfort, cleanliness and a conducive environment [3]. The business which is carried out by Khansa Oto Care is a service business that requires fast time and satisfactory results to win the hearts of customers through quality service.

The problems faced by Khansa Oto Care are related to services that are not optimal to consumers due to the physical condition of the work station environment that is less organized and dirty. This condition is shown at the vehicle washing work station which is not tidy. The unused items remain in the work environment such as sacks filled with dirt and sand from vehicles and plastic waste. To facilitate subsequent use, the workspace and all equipment are kept in a clean and tidy condition [4]. A simple problem also occurs in the vehicle drying work station. Items such as plywoods, small ladders, paint buckets, tables, and other small items are still placed on the storage. The used-soap buckets are not stored in the used-items storage.

The unused items are placed in the improper place such as rags (*Kanebo*), footwear stickers, jack, ring locks and wrenches are not stored properly. Oil spill that has not been cleaned makes the floor slippery, there are used-oil bottles that are not stored in order. These conditions make the workers feel uncomfortable in carrying out their activities. Khansa Oto Care needs to apply the *Seiso* principle, which will give a comfortable effect for its workers [5]. The conditions above can hamper the service process because a lot of time is wasted due to a lot of movement [6]. In addition, the lack of habits and discipline of the workers in caring for the work environment is due to the absent of the three principles of 5S cultures.

Based on the ten observations on the workers activities from taking the hose until turning on the tap, it took 9.51 seconds with a distance of 1.5 meters. The time to turn off the switch and the tap, and to store the hose, it took an average of 9.97 seconds. The worker required 4.41 seconds to take the sponge, in which, the distance between the sponge container and the car was 1 meter. Meanwhile, it took an average of 4.7 seconds to store the sponge in the sponge container. The worker required 4.19 seconds to take the dry cloth (*Kanebo*), in which, the distance between the dry cloth container and the vehicle was 2 meters. Meanwhile, to store the dry cloth, it took an average of 4.67 seconds. The average time for the worker to take the polish bucket was 5.48 seconds, in which, the distance between the polish bucket and the vehicle was 2.5 meters.

A lot of time was wasted because of the repetitive activities of picking up back and forth and the distance was a bit far. Goods or tools to be easily found quickly, proper storage is needed [7], this will make it easier to get them and work efficiency will increase [8]. The Loss of working time can be minimized by applying the 5S management properly and minimizing unnecessary movements [3].

Items or tools to be easily found quickly, need to be stored properly

2. METHODS

This research was conducted at Khansa Oto Care which is a service provider for car washing, nitrogen gas filling, oil and air filter changing, and also accessories sales for vehicle interiors. The research used the 5S method (*Seiri, Seiton, Seiso, Seiketsu, and Shitsuke*). The respondents were 12 workers of Khansa Oto Care. The research used an experimental design with the same subject (treatment by subject design). The treatment was carried out in two ways, namely: (i) car service workers in the initial condition, and (ii) car service workers with the work facilities after the implementation of the 5S method. To measure the success of this study, a questionnaire was given to 12 workers before and after the implementation of 5S with the same questions. Success is seen from the score of the 5S program (%), if after the implementation of 5S the score is greater than before the implementation of 5S then it is said to be good.

3. RESULTS AND DISCUSSION

3.1. Program Score Before and After the 5S Work Culture Application

The questionnaire assessment of 12 respondents was divided into five categories, in which, each category had two kinds of statements and each statement had a Likert scale score from 1 to 5. Score 1 = very bad with the percentage score of 0% -20%, score 2 = bad with the percentage score of 21%-40%, score 3 = average with the percentage score of 41%-60%, score 4 = good with the percentage score of 61%-80% and score 5 = very good with the percentage score of 81%-100%.

The formula for 5S program (%) is as follows. [9]

$$\frac{\text{Total assessment score}}{\text{Maximum total score}} \times 100 \%$$

Information :

Total assessment score = score x total questionnaire score of the respondent

Maximum total score = Total correspondents x Likert scale score x total questions

The program score before the implementation of 5S work culture at Khansa Oto Care is served on Table 1 below.

Table 1 Program Score Before the Implementation of 5S Work Culture

Score	Likert Scale				
	1	2	3	4	5
Questionnaire total score	54	92	90	0	0
Assessment total score	260				
Maximum total score = 600					
Program score 5(%) = (206/600) * 100 = 34.3%					

The calculation result showed the score of 34.3% which is in the percentage of 21% - 40%. It means that the work environment before the implementation of 5S was bad.

Before the implementation of 5S at Khansa Oto Care, all of the workers were given a briefing related to the importance of 5S work culture in a work environment. Some information related to Compactness (*seiri*), Neatness (*seito*), Cleanliness (*seiso*), Maintenance (*seiketsu*) and Diligence (*shitsuke*) which was applied at Khansa Oto Care is shown on Table 2. below.

Table 2 The Implementation of 5S Work Culture at Khansa Oto Care

Category	Information
Compactness (<i>Seiri</i>)	1. The implementation of tidiness (<i>Seiri</i>) which the researchers conducted was by elimination procedure, such as:
	a. Proposing a disposal, sacks filled with sand were taken by the seller of sand/soil backfill once a week so that there was no accumulation of the used sacks.
	b. Moving various items which were not included in the work items to other places.
	2. Making storage rack for work items in the oil change work station.
Neatness (<i>Seiton</i>)	1. Making a label/tool mark for storage place
Cleanliness (<i>Seiso</i>)	1. Making rack for storing large size items.
	2. Proposing a picket agenda for morning and evening.
Maintenance (<i>Seiketsu</i>)	1. Proposing a reward system for the workers
	2. Briefing on 5S
Diligence (<i>Shitsuke</i>)	1. Making 5S work culture posters.

The program score after the implementation of 5S work culture can be seen on Table 3 below.

Table 3 Program Score After the Implementation of 5S Work Culture

Score	Skala Likert				
	1	2	3	4	5
Questionnaire total score	0	0	0	180	375
Assessment total score	260				
Maximum total score = 555					
Program score 5(%) = (555/600) * 100 = 92.5%					

The calculation result showed the score of 92.5% which is in the percentage score of 81% - 100%. It means that the condition of the work environment after the implementation of 5S was very good.

3.2 Result of the Implementation of 5S Work Culture at Khansa Oto Care

3.2.1 The Application of Compactness (*Seiri*)

The application of Compactness (*Seiri*) was carried out by sorting out the important and unimportant items, items that were not important at the work station needed to be disposed. By eliminating the unnecessary

items, the work place become clean [10]. The results of the implementation of Compactness (*Seiri*) provided comfort and flexibility for workers in carrying out their work. The results can be seen on Figure 3.1. An effective Compactness activity will create a feeling of a more spacious space because there are only the necessary items remain, so that workers feel comfortable and more flexible in carrying out their work [11].



Figure 1. Before the Implementation (Left) After the Implementation (Right) in the Washing Work Station

3.2.2 The Implementation of Neatness (*Seiton*)

Determining the neat layout so that the items that will be used will be easily found.

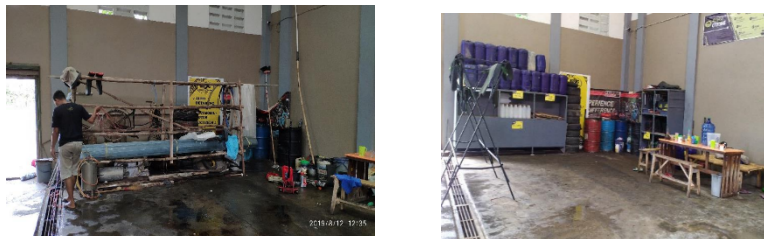


Figure 2a Before the Implementation (Left) After the Implementation (Right) in the Drying Work Place



Figure 2b. Before the Implementation (Left) After the Implementation (Right) in the Oil Change Work Station



Figure 2c. before the Implication (Left) After the Implication (Right) in the Storage Rack

The implication of Neatness (*Seiton*) was carried out by making a place for each items and labeling each place to make it easier for the workers to find the items. Other than making it easier for the workers to find the items, it also saved time, so the workers could do other jobs. In addition, it made it easier for items to be used and returned to their original place because the items were neatly and systematically arranged [10, 12, 13]. The results of the implementation of Neatness for each place are shown on Figures 3.2a, 3.2b, and 3.2c. The Neatness Principle prioritizes functional management and elimination of the search process [14].

3.2.3 The Implementation of Cleanliness (*Seiso*)



Figure 3. Before the Implementation (Left) After the Implementation (Right) in the Oil Change and Dry Stations

The application of Cleanliness (*Seiso*) was carried out by making a picket schedule for the workers to clean the entire work area at the beginning and at the end of the work time so that the work environment was in a clean condition and could provide comfort for the workers in doing their jobs. Although it was difficult to make the workers to comply with the schedule due to the real condition, it needed to be done. One of the functions of the 5S evaluation system is to assess the workers discipline and consistency [15]. The results of the implication of Cleanliness can be seen on Figure 3.3. The purpose of the *seiso* design is to create a clean work environment because the cleanliness of the work environment can also indirectly affect the performance of every worker who works in the work environment [16]. A clean environment can create a pleasant work environment and ultimately can provide an optimal result. A quality work environment condition can be based on a clean and tidy work environment which is expected to lead to a high work performance [17]. An optimal performance can be achieved on a clean environment condition through workers discipline and consistency.

3.2.4 The Implementation of Maintenance (*Seiketsu*)



Figure 4. Before the Implementation (Left) After the Implementation (Right)

The implementation of Maintenance (*Seiketsu*) was done by making a routine checklist schedule for routine maintenance of the work equipment weekly or monthly as needed. The checklist was made so that it could be easily seen (visible) by the workers, so that work equipment would always be in a good condition when it was going to be used. Then, making it as a habit for the workers to see the checklist and carry out the activity on a scheduled basis. A good equipment condition is expected to provide an optimal result, reduce the risk of machine damage, and minimize the cost of equipment damage. The implementation of Maintenance causes efficiency in the use of equipment and materials thus, it can minimize expenses and increase profits [18].

3.2.5 The Implementation of Diligence (*Shitsuke*)

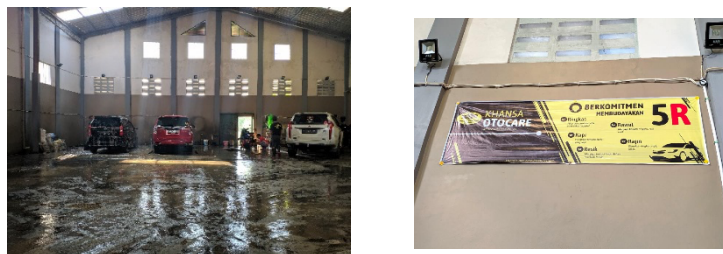


Figure 5 Before the Implementation (Left) After the Implementation (Right) of the Poster Installment

The implementation of Diligence (*Shitsuke*) was carried out by installing 5S Work Culture posters in several places which could be seen easily as a form of Khansa Oto Care's commitment in implementing the 5S Work Culture. In addition to familiarization of the 5S culture at Khansa Oto Care, it also created a more optimal work environment [6]. To familiarize the workers to commit a diligence culture, it was necessary to remind them using posters which were installed on strategic locations, as shown on Figure 3.5. The discipline to make the 5S

become a habit consisted of working according to the rules, agreements, and a strong commitment to implement this methodology [19].

The implementation of the 5S work culture is very good to be conducted in various companies, offices, warehouses, workshops and car services. The physical changes in the work environment at Khansa Oto Care after the implementation of the 5S work culture became visible. One of the biggest obstacles was how to make the 5S practice becomes a habit in the lives of the workers [20]. Even though there are many obstacles, Khansa Oto Care still applies it in the process of serving its consumers.

This research has a direct impact on workers, namely making them comfortable and free to do work, easy to find workpieces, making machines and equipment in prime condition and increasing commitment to the work done. The impact for the service owner of Khansa Oto Care is that it minimizes the level of risk of machine damage and can eliminate the cost of dredging machines or tools, a clean environment makes employee performance increase and makes customers feel satisfied. Overall the implementation of 5S can shorten service time, increase production, and the level of discipline of employees and organizations [21]

5. CONCLUSION

After the implementation of 5S Work Culture at Khansa Oto Care, the total score increased into 92.5% which means that the assessment result on the environment condition was very good. This kind of environment condition has made the workers acknowledge the importance of 5S Work Culture implementation, thus, it is expected that all of the workers will become more discipline in caring and maintaining the work environment. Seeing that the work environment is getting better after implementing 5S for 30 days, Khansa Oto Care services need to continue this program and provide rewards for employees who have achievements in working and running 5S program.

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