

CHAPTER V

DISCUSSION

5.1 Waste Analysis

The identification of waste in laundry can be complex considering that the operation that happens in service are intangible. Unlike in factories, where idle workers and stacks of inventory are clear signs of broken processes, waste is usually hidden when it comes to services. It tends to lurk between functions, departments or regions, so companies see only glimpses of the problem. Sarkar (2007) in his book stated that wastes are actually symptoms of problems in a process. The belief that wastes are the problem is not true. They are manifestations that need to be identified and problem to be solved by a structured intervention. All that happen during lean problem solving is to identify waste and understand its causes through the use of lean tools and techniques. Identification of waste is one of the major challenges that has to embraced by SMEs' laundry service.

Waste is anything that time, costs, or work that adds no value in the eyes of your customer. All organizations have some waste that, because of how their processes operate today, is required to compensate for internal weaknesses. The amount of waste at each activity is proportional to how long it delays the work. Lean shows us how to recognize and eliminate waste and not simply accept it as how it is.

The first step to determine the waste that happens in SMEs' laundry service is to identify the type of waste in service. In the study that conducted by Andrés-López et al. (2015) stated that there are 8 types of waste in service. These wastes are called as overproduction, delay, unneeded transport or movement, over-quality or duplication, excessive variation or lack of standardization, failure demand or lack of customer's focus, underutilized resources, and manager's resistance to change. After identifying what type of waste in service, a close-ended questionnaire about what type of waste that happening in SMEs' laundry service and an open-ended questionnaire about the causes of waste that happening in SMEs' laundry service are distributed to 30 laundry services in Yogyakarta. The target SMEs of this study are small enterprises and medium enterprises, as defined in Indonesian Presidential Decree no.99/1998.

After distributing questionnaires to 30 laundry services, the validity and reliability test were performed on the close-ended questionnaire. The result of the close-ended questionnaire shows that all 8 types of waste in service are experienced by all SMEs' laundry service. Based on the data processing has been performed above, it is found that there are 8 types of waste that happens in SMEs' laundry service. There are: overproduction, delay, unneeded transport or movement, over-quality or duplication, excessive variation or lack of standardization, failure demand, or lack of customer's focus, underutilized resources, and manager's resistance to change.

Descriptive analysis is conducted to make the data collection more representable, the analysis is performed by using a category based on the value of the frequency distribution. Based on the result of the descriptive analysis, it is shown the frequency of the waste happening in SMEs' laundry service. Waste of overproduction is categorized as happens sometimes in SMEs' laundry service with score 2.67. Waste of delay is categorized as moderate or happens sometimes in SMEs' laundry service with score of 2.80. Waste of unneeded transport or movement is categorized with very often with score of 4.10. waste of excessive variation or lack of standardization with score of 4.17 and categorized as happens very often in SMEs' laundry service. Failure demand or lack of customer's focus with score of 4.10 and categorized as happens very often in SMEs'

laundry service. Waste of underutilized resources with score of 1.97 and categorized as happens rarely in SMEs' laundry service. Lastly, waste of manager's resistance to change with score of 2.00 and categorized as happens rarely in SMEs' laundry service.

Even though with difference frequency, all of the wastes in service are experienced by laundry service SMEs. These wastes are identified not only in laundry services but also generally in industry. It became worse since there are no certain practices in production designated to reduce or eliminate the waste in the service process, such as lean in laundry service SMEs. Waste in service industry is commonly happens since the service process is considered as an expensive process. Service process does tend to have long cycle times, a slow process is prone to poor quality which drives cost up. As Michael George (2003) stated that because of the slow process in service more than half of the cost in service application is non-value-added process which is categorized as a waste. Many complex variables are the second reason why there are many waste in service process. Service process are slow because there is far too much work in process (WIP), because the result of unnecessary complexity within the service or product offering. Michael George (2003) also stated when there is too much WIP in the process, work can spend more than 90% of its time waiting, which doesn't help the customers at all and, in fact, creates or inflicts substantial waste (non-value-added costs) in the process. He also mentioned that 80% of the delay is caused by less than 20% of the activities. By improving the speed of 20% of the process it can affect to an 80% reduction in cycle time and achieve greater than 99% on-time service delivery in the service. Multiple decision points in the process and enhanced by abundant of value-added works does often take place out of sight make the people working in service found that most of the steps in the processes add no value to the service in the customers' eyes. Knowing all of that, it is understandable why laundry service SMEs are full with wastes.

5.2 Root Causes of Waste Analysis

After knowing the waste, knowing the root causes of waste is essential not just to selecting the most suitable lean methodologies but also finding the best solution to solve the core driver to eliminate problem caused by the core driver or in this case the root causes. From 30 open-ended questionnaires that have been spread into 30 laundry services then the data must go through the trustworthiness test and then using inductive analysis techniques by Computer Assisted Qualitative Data Analysis Software (CAQDAS), namely NVivo 11 to perform the data process. Showing the result of questionnaire in analytical map of undesirable effects that happening in SMEs' laundry service. After knowing the undesirable effects that happening in SMEs' laundry service, a current reality tree tools (CRT) is conducted to find the root causes of the waste that happening in SMEs' laundry service.

The first of waste that happens in laundry service is overproduction with score of 2.67 and categorized as moderate or happens sometimes in laundry service. Taiichi Ohno (1988) believed that the waste of overproduction was the most serious of all the waste because it was the root of so many problems and other wastes. Overproduction is making too much, too early or 'just-in-case'. The aim should be to make or do or serve exactly what is required, no more and no less, just in time and with perfect quality. Overproduction discourages a smooth flow of goods or services. Overproduction leads directly to excessive lead time. The waste of overproduction that happens in laundry service SMEs is caused by the absence of procedure to separate laundry based on service type before the it goes to the WIP inventory. The laundry that is not separated will cause a pile in the inventory without any distinction among them. It will be directed to wrong entry data in inputting process that will lead to misconducting or mistreatment of the laundry in the process that causes mixed up service type. The absence of procedure to separate laundry will also cause miscommunication among employees or also called as human error in processing the laundry. Overproduction also impacts on the waste of motion, making and moving things that are not immediately required.

The waste of delay with score of 2.80 and categorized as moderate or happens sometimes in laundry services. Waste of delay is directly relevant to the flow process. In Lean flow of service or customers are more important than keeping operators busy (Ohno, 1988). Delay is directly relevant to lead time, which is an important source of competitiveness and customer satisfaction. The absence of procedure to separate laundry based on service type is also the one that causes waste of delay. In the laundry services case, the causes of waste of delay are, no tagging implementation for laundry and no labeling for work area. No tagging implementation for laundry and added by absence of procedure to separate laundry based on service type become a big problem in laundry service. Absence of tagging is the root causes of unsorted laundry. The laundry should be separated based on the type of service that selected by customers, whether it is express, normal laundry, etc. The laundry also should be separated based on the fabric of the clothes, because every fabric has its own attention in laundry process. By not separating this laundry based on those two indicators, when laundry is forwarded to next process, it will cause next stage of process must be delayed. Since, the laundry needs to be separated for stain removal process, cleaning process, drying process, and ironing process since every type of fabric have different treatment at different stages. Furthermore, the customers' laundry is not supposed to be processed in the same machine making the waiting time become longer.

The waste of unneeded transport or movement with score of 4.10 and categorized as high or very often. This waste refers to needless, non-adding-value movement of resources (people or items), physical (from office to office), or virtual (methods, approaches, paths or tools for performing the same work). The causes of this waste are no labeling for work area in laundry service SMEs. This waste is the root causes that causing unorganized workplace. This causing the employees need to look for tools before using it, or even not putting it back to its proper place after using it, etc. This problem requires extra times that leads to process delay. This problem can waste the employees' movement and time to search for the laundry in process or during the pickup process as stated by Ohno (1988) The poor workplace arrangement will lead to micro waste of movement in the process. These wastes are often repeated many times per day, sometimes without anyone noticing.

The waste of over-quality or duplication with score of 2.63 that categorized as moderate or happens sometimes, is a waste that related to activities or process that do not add value as perceived by customers regarding to the service itself. The cause of this waste is excessive process in laundry process. This excessive process can be found in the drying process and providing perfume to the clothes. In drying process, many laundries dry the clothes by using drying machine and the sun in sequent, with the same dry result. This repetitive process not just involving time to the laundry process, but also cost. While, repetitive perfume exposure in the process happens in the cleaning process when the laundry is processed in the washing machine as well as during the ironing process. This repetitive procedure is not yet can be defined as a non-value added process since the perfume that is given during the ironing process is a kind of clothes lubricant concentrate that not only contains perfume but also other substances that can make clothes become neat, smooth, and prevent spots on clothes while ironing.

The waste of excessive variation or lack of standardization with score of 4.17 categorized as high or very often, refers to the lack of standardization in the process and procedures in conducting the service. In the laundry service SMEs case, the existing SOP is not yet cleared or even, in some laundries there is no SOP for service process. Laundry service SMEs mainly only focus on the general process stage of the laundry process without paying attention to each stage standardization making the service process became worse. It is important to set a standard process for the regular work, so that there is consistency in the process to be followed by the employee. This can be the best process that can be followed as the regular process to ensure everything runs smoothly within the workplace, such as maintenance, admission procedure and others.

The waste of failure demand or lack of customer's focus or in manufacturing term the waste of defects, which scoring 4.10 categorized as high or very often. This type of waste will cost money, both immediate and longer term. The customer that doesn't feel satisfied will consider to switch to other competitors that will affect the business. The costs that SMEs need to pay will escalate the longer they remain undetected. The Toyota philosophy is that a defect should be regarded as a challenge and as an opportunity to

improve (Ohno, 1988). The root causes of this waste are no or lack of SOP in laundry service SMEs. This problem can be caused by no rule available that needs to be followed by the employees, and also because there are no system of punishment or reward designated for employees. These problems can cause lack of discipline and lack of motivation.

The waste of underutilized resources with score of 1.97 is categorized as low. This is a waste of resources, especially human potential, not leveraging employee's talent and potential, under-using their skills, and creative abilities and knowledge. Taiichi Ohno (1988) stated that the real objective of the Toyota Production System was to create thinking people (TPS = Thinking People System). Human potential just not need to be set free. It requires clear communication as to what is needed both from employee and to management, it requires commitment and support, and it requires a culture of trust and mutual respect which can be won, not by mere lofty words, but by example, interest and involvement at the workplace. A basic education is also necessary in this matter. The company's fear on losing trained and skillful employees is wrong, as the fear should be emerged when a company has no intention to train the employees. The waste on manager's resistance to change with score of 2.00 and categorized as low or rarely is a waste that commonly happens in the SMEs, due to employees' low education and the management tends to underestimate the suggestion or participation of employees in improvement process of the company. There are many things that can cause this waste. In this case, the root causes of these two wastes are the absence of transfer skill or knowledge among employees or managerial to employees and there is no two-way communication between employees and managerial.

5.3 Lean Methodologies

Recognizing the waste and root causes of waste discussed before, SVSM, 5S, and Dojo Quality Circle are selected to overcome the waste that happens in laundry service SMEs. This method is selected not just to follow the model that Andrés-López et al., (2015)

proposed, but also considering the capability and the amount of resource that SMEs can handle. According to the proposed frame by Andrés-López et al., (2015) that can be seen in Figure 2.1 every lean methodology can be used to reduce or remove certain waste. According to the result of the questionnaire, laundry service SMEs have all 8 types of waste. All these wastes happen in different frequency among the 30 laundry service SMEs that become the respondent of this research. By identifying the frequency of this waste doesn't mean that we can ignore or even underestimate the waste itself. A waste is still a waste whether it is small or big and can affect the laundry process itself. Thus, three methodologies are selected to overcome this problem, because there aren't lean methodologies that can overcome all 8 wastes entirely. These three methods are selected to overcome certain waste in the laundry service. SVSM is used to overcome waste of overproduction and waste of unneeded transport or duplication. 5S is used to overcome waste of delay, unneeded transport, excessive variation, and failure demand. While Dojo and Quality Circle is selected to overcome the waste of underutilized resources and manager's resistance to change.

According to model that proposed by Andrés-López et al., (2015) SVSM can be used to reduce or remove waste of overproduction, delay, unneeded transport or movement, and over-quality or duplication according to the type of problem that causing this waste. In this research SVSM method is used to reduce or remove waste of overproduction and over-quality or duplication because of the root causes that causing the waste in laundry service is can be solve by SVSM. While the root causes of delay and unneeded transport or movement in this case is not suitable with the SVSM, in fact this root causes can be solved by using 5S. This decision is made by analyzing the root causes of each waste. The root causes of overproduction are lack of coordination and processing item before being required. While, over-quality or duplication is caused by repetitive procedures in the process. All these wastes can be diminished by conducting SVSM in laundry service. While, two remaining wastes can't be solved by SVSM due the root causes that incoherent with the application of SVSM. For example, the root causes of delay based on the result of questionnaire from respondents are unsorted laundry and unorganized workplace, these problems are related to 5S and not SVSM. Thus, for the waste of delay and waste of unneeded transport or movement is assigned to 5S method.

This method is also selected because of a study that was conducted by Matt & Rauch (2013) who assessed lean methodologies that are suitable for SMEs. They stated that value stream mapping (VSM) or in this case SVSM is well suitable for small sized enterprises and very suitable for medium and large sized enterprises. This also applies the new type of VSM known as SVSM because of the straightforward application of VSM to the pure service field is somehow questionable. Due to the lack of process visibility and ownership that can exist, the concepts of both value stream and waste elimination are less tangible for a service than for a manufacturing process (Bonaccorsi et al., 2011). Considering these issues, Bonaccorsi et al. (2011) proposed a new and comprehensive lean approach called Service Value Stream Management (SVSM), which makes it possible to spot the criticalities of a service and enhance its performance. SVSM goes far beyond the potentiality of the standard VSM in that it has been specifically modified to tailor the needs of pure services. Thus, instead of VSM the method that is used in this study is SVSM.

Based on Figure 2.1, 5S can be applied to reduce or eliminate waste of delay, waste of unneeded transport, waste of excessive variation or lack of standardization, and waste of failure demand or lack of customer's focus. As explained earlier the waste of delay and waste of unneeded transport will be solved by using 5S instead of SVSM because their root causes are problems that can be solved in 5S. Waste of delay is caused by unsorted laundry and unorganized workplace, while waste of unneeded transport or movement is caused by unorganized workplace. For the rest of 2 wastes, excessive variation or lack of standardization and failure demand or lack of customer's focus will be solved using these lean methodologies under the same consideration. The other consideration why this method is used in SMEs' laundry service is because, Matt & Rauch (2013) categorized 5S as methods that are applicable in small enterprises, indicating that 5S is very suitable for small, medium, and large enterprises. Knowing all the benefits of 5S, and its capability to solve the problems on waste that happens in the SMEs' laundry service, 5S is chosen as one of lean methodologies to be recommended to SMEs' laundry service.

While, two methodologies that used in this research proposed by Andrés-López et al. (2015) is in line with the finding that Matt & Rauch (2013) research, Dojo and quality circles is rated as suitable for small enterprises, and very suitable for medium and large enterprises. Dojo and quality circle as stated in Figure 2.1 can be used to reduce or eliminate waste of underutilized resources and manager's resistance to change. This lean method is suitable to overcome or dealing with underutilized resources and management resistance to change type of waste. There are also other problems that can be solved like customer service, business growth and profitability, reduction human errors, optimum utilization of working space, training and knowledge development, and cleanliness of the work area and factory premises (Kiran, 2017).

According to Petru & Jozsef (2014) among the objective targeted in the quality circles are raising workers' awareness of the responsibilities that they have in relation to the quality of production and the products delivered, and development of inner leadership and employees' responsibility to the enterprise, in this case the product that meant is service. Those objectives are linear with the root causes of underutilized resources which are lack of responsibility and awareness in work. While root cause of unbalanced workload and uneven skills and experiences can be solved by Dojo as mentioned by Andrés-López et al. (2015) that dojo is a training method in lean environments which consists of the knowledge share through all employees, encouraging their multi-skill capabilities.

Similar with waste on manager's resistance to change in which the root causes were the opposite idea between managerial and employee, managers tend to sort out the suggestions and only prefers one that is managers want without considering others aspects. Manager's is resistance to changes since he assumes that only managerial suggestion that is worth, lack of communication between managerial and employees, and lastly lack of awareness and understanding of the manager or employee toward the problems all of this waste can be manage through quality circle. According Petru & Jozsef (2014) quality circles have numerous advantages like the creation of a communication environment for employees and/ or management based on mutual understanding and good

collaboration, the creation of a state of mind needed to become involved in decision-making activities, establishment of a framework where opinions are heard and work is appreciated, the creation of a climate of trust between operators and leaders, respectively an environment of mutual aid and cooperation, and they have a positive influence on the dynamics of work productivity, working technology optimization and working methods.

To further support the finding of this study, a verification to the 30 selected SMEs is conducted. The questionnaire consisting of the recommendation that generated from these three lean methods are given to the respondents, as the respondents in this research are the owner or the manager of the SMEs itself. The result of these questionnaires in Table 4.10 shows that every recommendation given are approved by the respondents. The recommendation solution generated by using SVSM is indicating score of 4.07 which categorized as agree, and 4.37 for the second solution generated from this method that indicated strongly agree. 5S recommendation shows 4.40 score, 4,33 score, 4,27 score, 4,23 score, 4,23 score, 4,23 score, and 4,37 score which all categorized as strongly agree with the recommendation given. For Dojo and Quality Circle application in SMEs' laundry service the respondents are strongly agree with this implementation of lean method in SMEs' laundry service. All the recommendations that generated from this study have a mean for total of 4.28 which is categorized as strongly agree, which demonstrates that almost all the respondents see these recommendations as an applicable solution of waste problems in SMEs' laundry service.