

CHAPTER IV

DATA COLLECTION AND PROCESSING

4.1 Data Collection

In this research, the data was collected from the questionnaires result. The questionnaires were distributed to 30 different laundry services located in Yogyakarta. The respondents of this research was categorized as an expert of that certain SMEs' laundry service. Because of every SMEs is different and unique in their own way. Expertise is the combination of knowledge, experience, and skills held by a person in a specific domain (Germain & Ruiz, 2009). Thus, the respondents of this study is the owner of each SMEs considering the owner is the most knowledgeable regarding to the laundry service SME and the issues discussed in this research.

4.1.1 Respondent's Profile

In this study, the researcher describes respondents profile in term of gender, educational level, and experience level. The respondents selected in this study is the one that believed as expert or in this case is the owner of the SME itself. The study uses a closed ended paper-based survey to categorize respondent's profiles and their responses were analyzed using frequencies and percentage distributions as shown in the following Table 4.1, Table 4.2, and Table 4.3, and Table 4.4.

Table 4.1 Respondent's Profile in term of Gender

Gender	Frequency (Person)	Percentage (%)
Male	22	73.33
Female	8	26.67
Total	30	100

Table 4.1 show that male were the majority respondents as represented by 22 (73.33%) and female were the minority with 8 (26.67%).

Table 4.2 Respondent's Profile in term of Educational Level

Education Level	Frequency (Person)	Percentage (%)
Primary School	0	0
Secondary School	0	0
High School	0	0
Diploma/Undergraduate	23	76.67
Postgraduate	7	23.33
Total	30	100

Based on the education qualification in Table 4.2, over half of the respondents is undergraduate or diploma being 70% of the total respondents, 13,33% even already finishing their postgraduate degree, and 16,67% with high school graduates. These results indicate that majority of the SMEs owner are literate.

Table 4.3 Respondent Profile in term of Experience in Laundry Business

Experience Level	Frequency (Person)	Percentage (%)
< 1 year	0	0
1 - 2 years	12	40.00
3 - 5 years	15	50.00
> 5 years	3	10.00
Total	30	100

Table 4.3 shows that 10% of total respondents have been joining laundry business less than 1 year, 40% of total respondents already in the business for a period of 1-2 years, 40% of total respondents already in the business for a period of 3-5 years, and 10% of total respondents already in the business for more than 5 years. This indicates that the majority of respondents are experts in subject related to the laundry service because the respondents have the knowledge and the experience about laundry business for relatively long period of time.

4.1.2 Result of Questionnaire

By literature reviews, this study applies 8 waste of service industry that Andrés-López et al. (2015) already determined and constructed the questionnaire accordingly to comply with practice and research demands. The questionnaire's subjects for this study were 30 different laundry services that located in Yogyakarta.

Table 4.4 Result of Questionnaire

No	Waste	1	2	3	4	5	Total
1	Overproduction	2	10	14	4	0	30
2	Delay	2	7	16	5	0	30
3	Unneeded Transport or Movement	0	0	7	13	10	30
4	Over-Quality, Duplication	3	9	14	4	0	30
5	Excessive Variation, Lack of Standardization	0	0	6	13	11	30
6	Failure Demand, Lack of Customer's Focus	0	0	7	13	10	30
7	Underutilized resources	7	17	6	0	0	30
8	Manager's Resistance to Change	8	14	8	0	0	30

This research employ Likert five-point scale data, the researcher able to summarize the questionnaire data type of waste that happens in the laundry services. Table 4.4 shows the representation on valid amount of times of the respondents answer by using the five-point scale.

The analysis is performed by using a category based on the value of the frequency distribution. While, the frequency distribution values are performed by using the following formula:

$$\text{Interval} = \frac{\text{Max value} - \text{Min Value}}{\text{Number of Classes}}$$

$$\text{Interval} = \frac{5 - 1}{5} = 0,8$$

Based on the above calculation, then it is obtained the limitation of data valuation category as follows:

1,00 - 1,80	= Very low rating / Never
1,81 - 2,60	= Low rating / Rarely
2,61 - 3,40	= Moderate / Sometimes
3,41 - 4,20	= High rating / Very often
4,21 - 5,00	= Very high / Always

Table 4.5 Summary of Questionnaire

Waste	Mean	Category
Overproduction	2.67	Moderate (Sometimes)

Waste	Mean	Category
Delay	2.80	Moderate (Sometimes)
Unneeded Transport or Movement	4.10	High (Very Often)
Over-quality, Duplication	2.63	Moderate (Sometimes)
Excessive Variation, Lack of Standardization	4.17	High (Very Often)
Failure Demand, Lack of Customer's Focus	4.10	High (Very Often)
Underutilized resources	1.97	Low (Rarely)
Manager's Resistance to Change	2.00	Low (Rarely)

Table 4.5 shows that unnecessary transport or movement, excessive variation or lack of standardization, and failure demand or lack of customer's focus have high category which shown that these types of waste are the most commonly happens in laundry services. Overproduction, delay, and over quality or duplication have moderate category which indicates that these types of wastes sometimes happens in the laundry services. While, underutilized resources, and manager's resistance to change have low category which indicate that these types of waste are rarely happens in laundry services.

4.2 Data Processing

4.2.1 Validity Test

The validity test indicates the extent to which a measuring tool measures what it wants to measure (Kimberlin & Winterstein, 2008). A measuring scale is said to be valid if that scale is used to measure what it should be measured. The software that used in this data processing is IBM SPSS Version 20. A data stated to be valid if the value of r calculation $\geq r$ table. The measurement using fault tolerance of 0.05 / 5% and the value of $df = 30 - 2 = 28$, so that the value r table is equal to 0.361, the results are written follows:

Table 4.6 Validity Test Result

No	Waste	r_{table}	r_{count}	Explanation
1	Overproduction	0.361	0.788	Valid
2	Delay	0.361	0.778	Valid
3	Unneeded Transport or Movement	0.361	0.540	Valid
4	Over-Quality, Duplication	0.361	0.893	Valid
5	Excessive Variation, Lack of Standardization	0.361	0.883	Valid
6	Failure Demand, Lack of Customer's Focus	0.361	0.570	Valid
7	Underutilized resources	0.361	0.702	Valid
8	Manager's Resistance to Change	0.361	0.607	Valid

According to Table 4.6, all attributes are said to be valid because $r_{count} \geq r_{table}$. Thus, there is no attribute should be removed or deleted.

4.2.2 Reliability Test

The reliability test shows the consistency of the data collected. A questionnaire is said to be reliable if the answer to one's question is consistent over time (Ghozali, 2011). Software that used in this data processing is IBM SPSS Version 20. A data stated to be reliable if the value of $r_{\alpha} \geq r_{\text{table}}$. The result of reliability test can be shown on table and table below.

Table 4.7 Reliability Test Result

Cronbach's Alpha	N of Items	Status
0.869	8	Valid

Table 4.7 shows that the value of Cronbach's Alpha on the reliability test is 0.869. Hair et al. (2006) stated that a common threshold for sufficient values of Cronbach's Alpha is 0.6. Thus, the result indicates that the answers to the questionnaire items are consigned or reliable since the value of Cronbach's Alpha ≥ 0.6 .

4.2.3 Trustworthiness Test

a. Credibility

In this research, for testing the trustworthiness of qualitative data that conducted by researcher, in the credibility test Shenton (2004) mentioned several provisions to promote confidence that accurately recorded the phenomena under scrutiny. The adoption of specific procedures, such as the line of questioning pursued in the data gathering sessions, and the subject that is selected for the data gathering is someone that acknowledged as expert in this field namely the owner of the SME or the manager of the SME. The development of an early familiarity with the

culture of participating organizations is also conducted before the data collection. Strategy to help ensure honesty in informants when contributing data, participants is encouraged to be frank from the outset of each session, with the researcher aiming to establish a rapport in the opening moments and indicating that there are no right answers to the questions that will be asked. Checks relating to the accuracy of the data is also conducted on the spot, and at the end, at the end of data collection session.

b. Transferability

According to Merriam as cited from Shenton (2004) stated that external validity is concerned with the extent to which the findings of one study can be applied to other situations. In positivist work, the concern often lies in demonstrating that the results of the work at hand can be applied to a wider population. The data that acquired from the questionnaire with respondents of 30 laundry services are processed through coding that resulting in analytical map of undesirable effect that cover over 30 laundry service and problem situation. They will be used as a representative of the group of small and medium-sized laundry services, as suggested by Stake and Denscombe cited from Shenton (2004) although each case may be unique, it is also an example within a broader group.

c. Dependability

In addressing the issue of reliability, the positivist employs techniques to show that, if the work were repeated, in the same context, with the same methods and with the same participants, similar results would be obtained.

d. Confirmability

Confirmability test was conducted by auditing the results of the research as a whole. Supervisor lecturer acted as an auditor to audit the overall activity of researchers in conducting research.

4.2.4 Analytical Map of Undesirable Effect

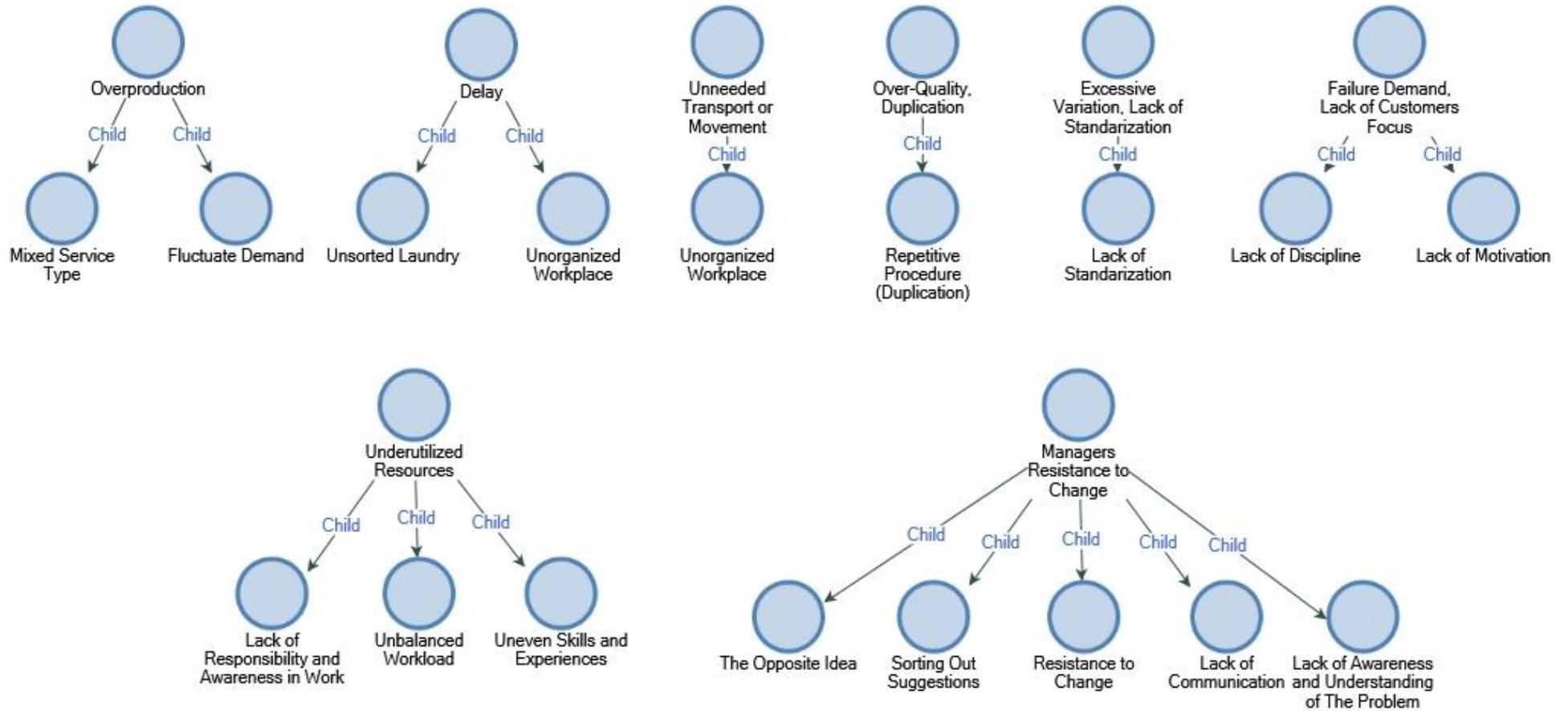


Figure 4.1 Analytical Map of Undesirable Effect

Figure 4.1 above shows the result of the causes of the waste that happens in the laundry service generated from the open-ended question in the questionnaire. The researcher used inductive analysis techniques by Computer Assisted Qualitative Data Analysis Software (CAQDAS), namely NVivo 11 to perform the data process. NVivo is a software used for processing qualitative. The researcher analyzed the data by doing coding and making analytical maps.

In this case, the researcher categorized all the undesirable effects separated by the type of waste from the input of open-ended question. The undesirable effects of overproduction based on the data obtained from the questionnaires are categorized into two categories which are mixed service type and fluctuate demand. The undesirable effects of delay are unsorted laundry and unorganized workplace. The undesirable effect of unneeded transport and movement is unorganized workplace. The undesirable effect of over quality and duplication is repetitive procedure. As the undesirable effect of excessive variation and lack of standardization is lack of standardization. The undesirable effects of failure demand and lack of customer focus are originated from the lack of employee discipline and lack of motivation. The undesirable effects of underutilized resources are originated lack of responsibility and awareness in work, unbalance workload, and uneven skills and experiences among the employees. Lastly, the causes of manager's resistance to change are the opposite idea, sorting out suggestion, resistance to change, lack of communication, and lack of awareness and understanding the problem.

4.2.5 Current Reality Tree (CRT)

According to Goldratt (1999) the first step in conducting current reality tree is to determine the undesirable effects that currently apply to the problem at hand. By conducting coding method, the undesirable effect can be known. Figure 4.1 shows the relationship of the waste in service industry with the undesirable effect that happens in SMEs' laundry service. Effect-cause-effect diagram is conducted to find the root causes of the waste that happens in laundry service SMEs, this diagram is called Current Reality

Tree (CRT). Analysis of the current reality tree is done by looking at how much an entity affects undesirable effects. If an entity affects most undesirable effects compared to other entities, it can be concluded that the entity is the main cause (core driver). The CRT has been chosen due to its simplicity and the visual representation of the causes and effects (Fonseca et al., 2003). After organizing and knowing the undesirable effects in an effect-cause-effect relationship analysis, a current reality tree took shape that identified each waste and try to find its root causes.

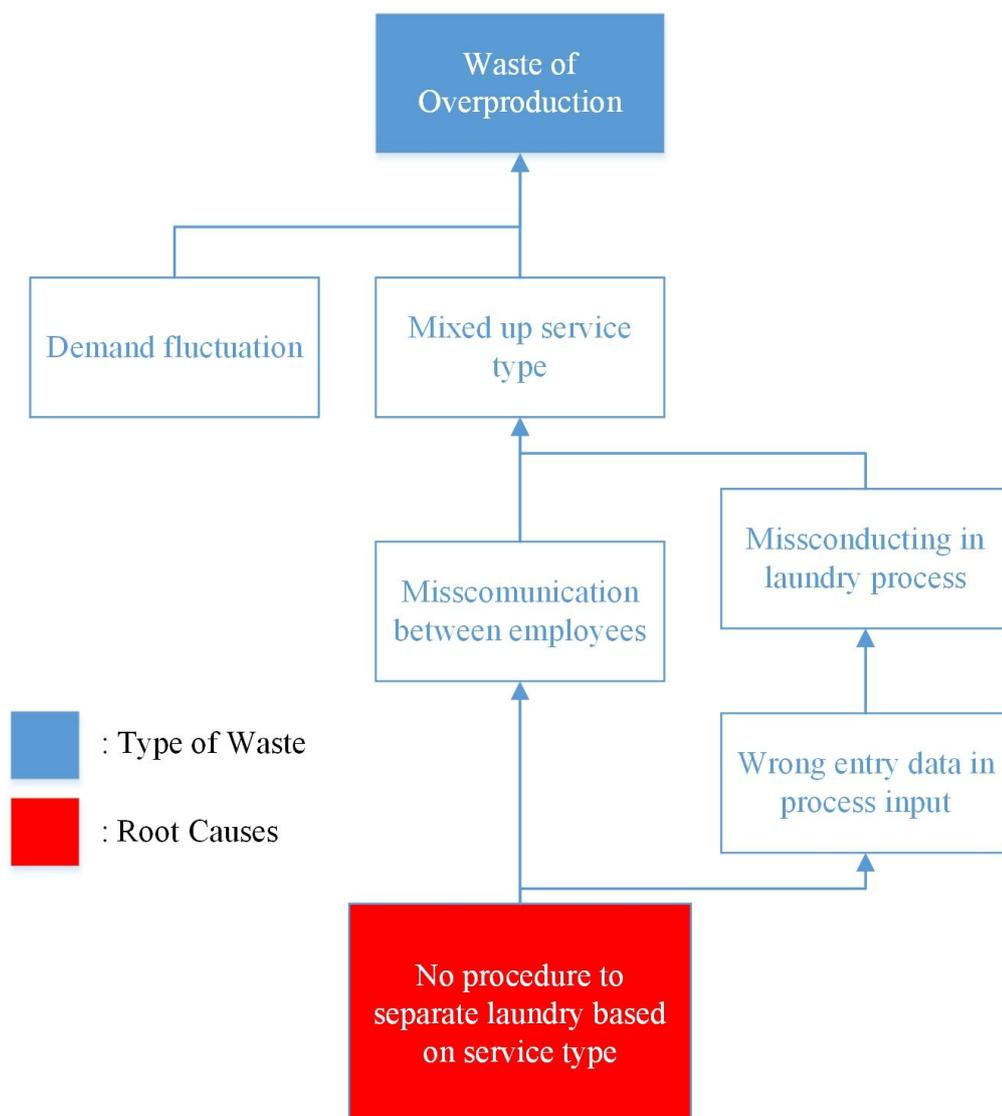


Figure 4.2 Current Reality Tree Waste of Overproduction

Figure 4.2 shows the root causes of the waste of overproduction which are no procedure to separate laundry based on service type. Using the undesirable effects that have been found previously using coding method, a diagram of effect-cause-effect relationship can be made. The result of this diagram shows the core driver or core problem that causing waste of overproduction in SMEs' laundry service.

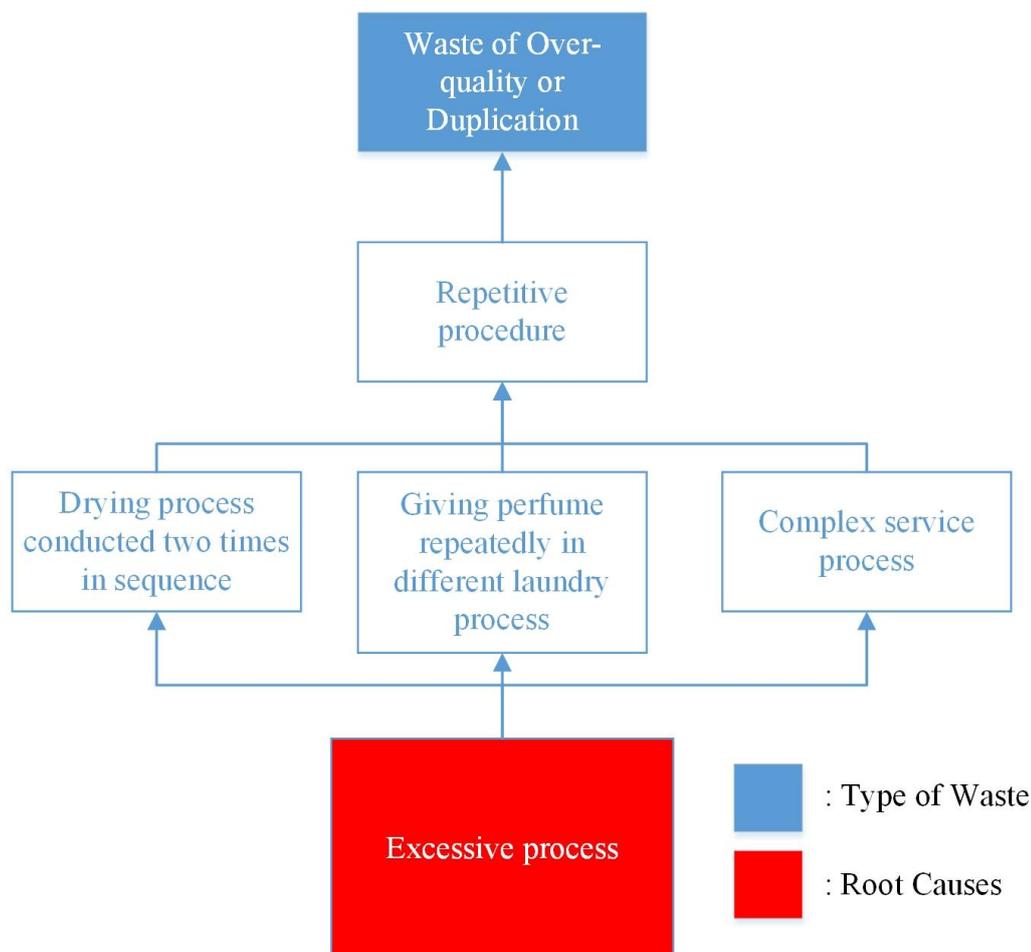


Figure 4.3 Current Reality Tree Waste of Over-quality or Duplication

Figure 4.3 shows the root causes of the waste of over-quality which are excessive process that have been performed by laundry service. This excessive process causes some problem, such as laundry service should carry out two times drying process whether by using drying machine or sun, exposing perfume repeatedly to the laundry, and lastly causing complex service process. All of this problems lead to repetitive procedures in the SMEs' laundry service.

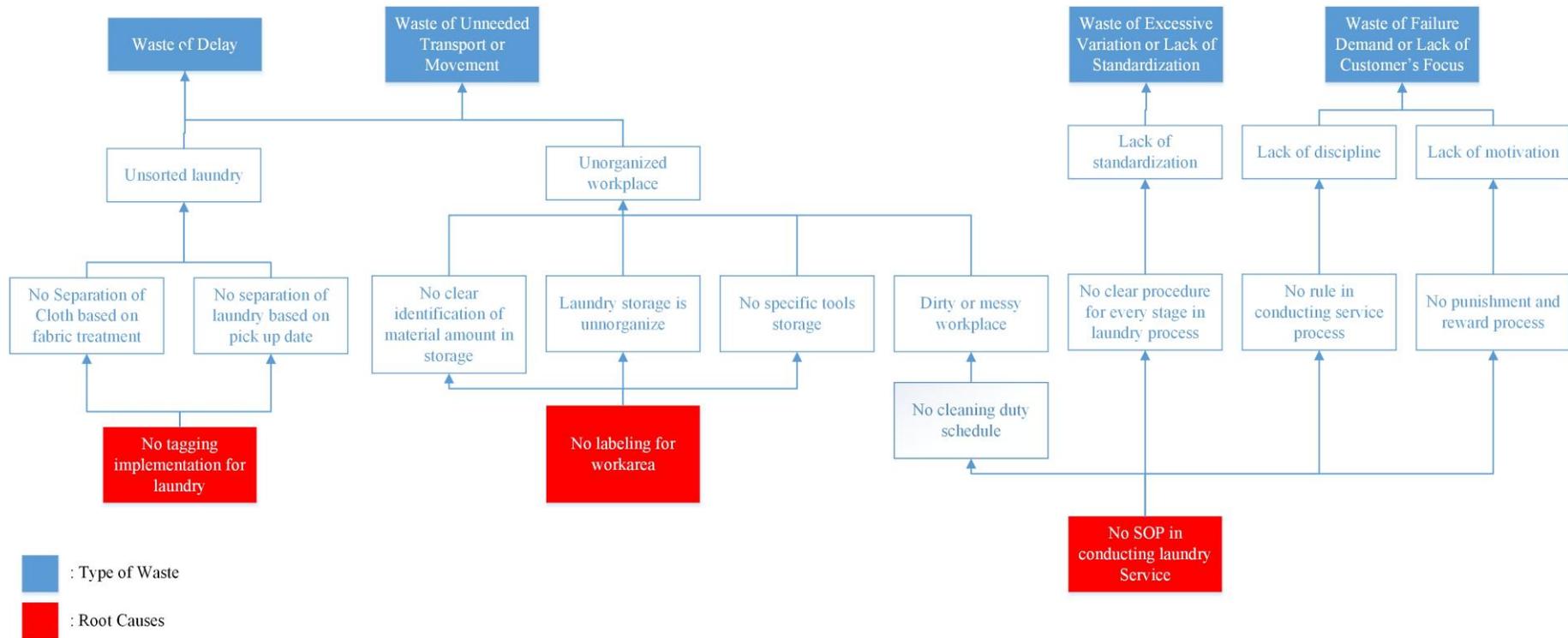


Figure 4.4 Current Reality Tree Waste of Delay, Unneeded Transport or Movement, Excessive Variation or Lack of Standardization, and Failure Demand or Lack of Customer's Focus

Figure 4.4 shows the diagram of effect-cause-effect for waste of delay, unneeded transport or movement, excessive variation or lack of standardization, and failure demand or lack of customer's focus. By recognizing the undesirable effects from these wastes, a current reality tree

map can be made. The result of the current reality map shows that the root causes from these 4 wastes are: no tagging implementation for laundry, no labeling for work area, and no SOP in conducting laundry service.

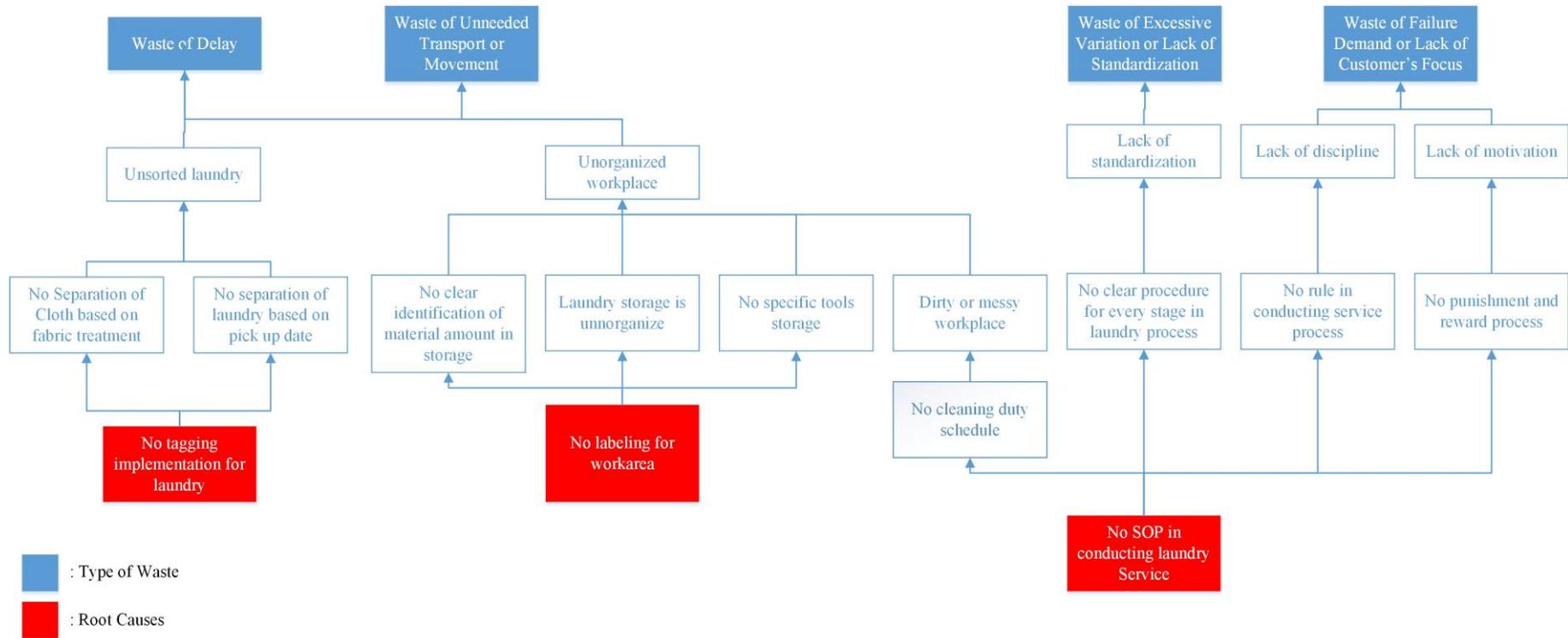


Figure 4.5 Current Reality Tree Waste of Underutilized Resources and Manager's Resistance to Change

Figure 4.5 shows the current reality tree on the waste of underutilized resources and waste of manager's resistance to change. Result from this current reality tree shows that the root causes of these wastes are no transfer skill or knowledge among employees or managerial to employee and no two-way communication between employees and managerial.

4.3 Lean Service Methodologies Analysis

According to the type of waste and the root causes of the waste discussed before. A recommendation is generated using the model that Andrés-López et al. (2015) have proposed. Based on the type of waste that happens and to ensure that the SME can applied the methodologies based on their capability and resource, the methodologies that selected to overcome these problems are SVSM, 5S, and Dojo Quality Circle. SVSM is chosen because SVSM approach is flexible in nature and can be applied to a wide range of different cases. SVSM is also based on a set of conceptual and generic principles organized in a structured framework, which can be used as a roadmap to develop a true lean service. Considering lean is not yet famous in SMEs, this method can help them develop lean and understanding more about lean. The 5S method can be used to solve four type of wastes which are delay, unneeded transport or movement, excessive variation or lack of standardization, and failure demand or lack of customer's focus. The dojo and quality circle method can be used to solve two type of wastes which are underutilized resources, and manager's resistance to change. This method is used because it can be easily implemented in the SME without additional cost and resource, and it's could provide benefit to the systems.

4.3.1 Service Value Stream Mapping (SVSM)

Based on the type of waste and their root causes, the SVMS is recommended to solve the waste of overproduction that caused by no procedure to separate laundry based on service type. Also waste of over quality and duplication that caused by excessive process. SVSM

follows a step by step procedure made of six points: 1) commit to lean; 2) learn about lean; 3) choose the value stream to be improved; 4) map the current state; 5) identify the impact of waste and set the target for the improvement; 6) map the future state (Bonaccorsi et al., 2011).

4.3.1.1 Commit to Lean

Developing a lean process implies a strong commitment and especially the top management of laundry services and the employees must be engaged in the project. An active participation of the employees is fundamental, not only because they are the ones who have the best knowledge of what is happening on the field, but also because they are the winning element of the service. Immaterial attributes such as the rapidity, the efficiency, the willingness and the cordiality of the employees positively/ negatively denote the way in which a service is supplied and this can be even more important than the service itself.

Therefore, it is paramount for the top management to honestly clarify that people are the key of the success and that an effort and possibly a work overload will be required, especially in the first part of the project. Nonetheless, the management must understand that lean is not about cutting staff and resources; instead, it is about focusing people's efforts on creative tasks, by speeding up the operations through the progressive elimination of waste and idle time.

To create commitment, targets and a time schedule for the improvements should be contracted and agreed with all the staff and continuously updated and communicated. It is also advisable to organize a start-up meeting, to formally announce the beginning of the lean project, to explain the strategic issues of change and to present the value stream manager and the employees.

4.3.1.2 Learn about Lean

The second step consists in the organization of learning/training sessions on lean concepts. This has the objective to increase commitment and to develop the skills to identify/resolve operational weaknesses hindering organizational effectiveness and efficiency (Bonaccorsi et al., 2011). All the people involved in the project should participate to these sessions, but the level of involvement should be tailored on their specific needs especially in this case is a laundry services. For instance, everybody should have basic notions on lean and should be acquainted with the wastes of the service industry which is not hard to do.

4.3.1.3 Choose the Value Stream

Services that are asked more frequently (or the ones generating the greatest share of the total revenue) should be chosen for the analysis. If the distinction between the critical few and the trivial many is not clear, services should be grouped into homogeneous families (Bonaccorsi et al., 2011). As for this brief study case the service that selected is basic laundry services that almost every SME's laundry service provides to their customers.

4.3.1.4 Map the Current State

The map is built using a set of standard icons (Figure 2.2), which has been extended to meet the different necessities of the service industry. According to the collected data from the open-ended questionnaire that distributed to 30 laundry services, a current map of SVSM is conducted.

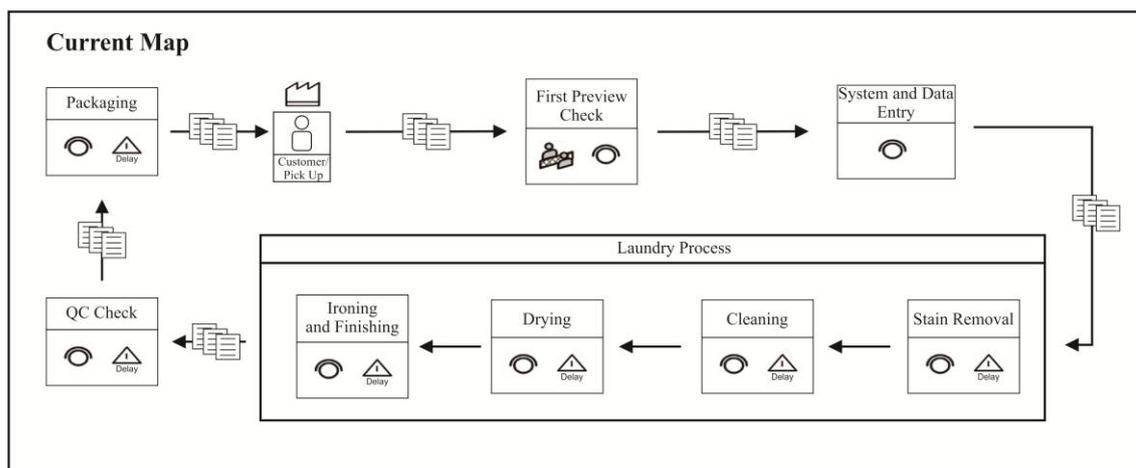


Figure 4.6 Current Map

Figure 4.3 shows the current map of laundry service process. It starts from customer inputting the laundry that will go through first preview check where the laundry will be weighed, and customer can choose the type of service they want, whether it is express or normal. In some laundries the customers also can choose perfume that will be used in laundry process based on customer's preference. After that, the incoming laundry will be put in the system and data entry. Later, it will be forwarded to laundry process, starting with stain removal, and then cleaning or washing process, then drying process, and the last will be ironing and finishing. After all processes are accomplished, there will be quality check and packaging process before restoring it in inventory room until the customers pick up the laundry.

4.3.1.5 Set the target for the Improvement

Each activity must be classified as: 1) value added; 2) non value added but necessary and 3) waste. Attention must be placed in this analysis because it could be cumbersome (Bonaccorsi et al., 2011). For this case the target of improvement that the researchers aim focused on the waste that happens which are waste of overproduction that caused by lack

of coordination and processing time before being due, and waste of over-quality or duplication that caused by repetitive procedure in the process.

4.3.1.6 Map the Future State

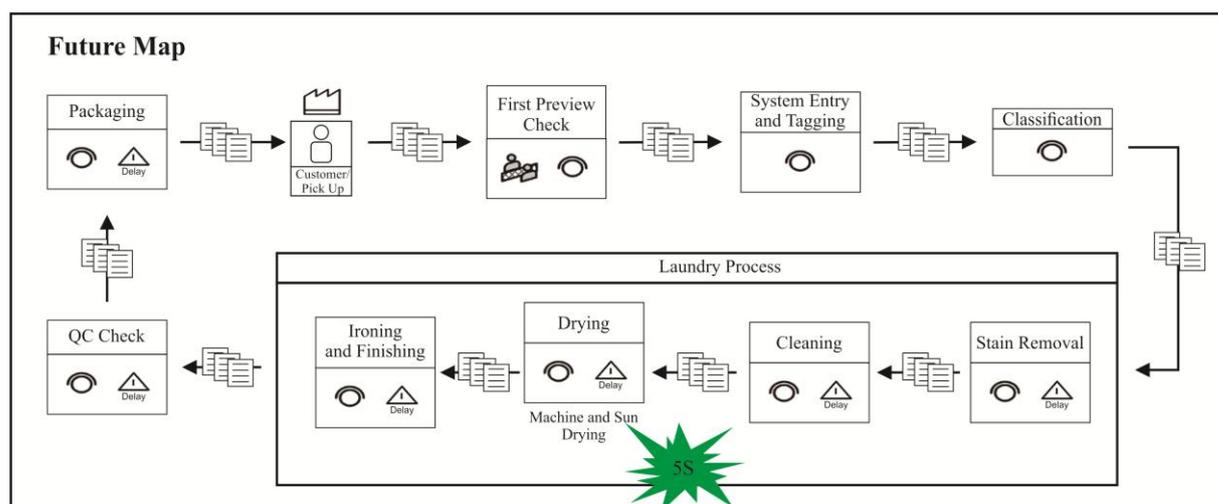


Figure 4.7 Future Map

The figure 4.7 shows the future map of the SVSM. The future map shows the improvement where all recommendation to solve the problem that stated before is happening. To solve the problem that happening in SMEs' laundry service, the laundry service need to add a new procedure to separate the laundry that come into the system based on their type of service, whether it normal or express service. By doing so the employee can know exactly what the type of service they are working on and minimize any error or miscommunication in the process. In the new procedure, the SMEs' laundry service also can add tagging or separation based on the fabric treatment of the customer's laundry. By doing this the process can be much easier and minimizing the human error that happen in the process.

To solve the second problem that happens in SME's laundry service that caused by excessive process, a solution is given by branching the duplication procedures to optimize the use of resources and tools that the laundry already has without adding new tools or resources in the system, the branch can be added in the drying process. Instead of making all the laundry going through all the sequences of drying process, the laundry only needs to go through one type of drying process whether its drying under the sun or using the drying machine. While, the suggested solution to the duplication of perfume used, the laundry can just erase or eliminate the process of giving perfume in the ironing process, but this solution is not yet reliable because some laundry uses this type clothes lubricant concentrate not just because it contains perfume, but also because it can make clothes neat, smooth, and does not cause spots on clothes.

4.3.2 5S

According to Andrés-López et al. (2015) 5S can be used to solve four types of waste that happen in service which are delay, unneeded transport or movement, excessive variation or lack of standardization, and failure demand or lack of customer's focus. To implement 5S into the laundry, finding the current state of 5S in the laundry service is essential. Identifying current state for 5S can be done by using the data gathered from the questionnaire, direct observation, and root causes that obtained from the current reality tree.

1. Sort: According to the result of analytical map that conducted, unsorted laundry is problem that the laundry service has. This problem is emerging due to unsorted laundry from incoming customers before going into the system.
2. Neatness: The result of the analytical map, one of the problems that SMEs' laundry service have is unorganized workplace. This problem is emerged due to messy workplaces and employee habits foe not returning items or tools to the original place.

3. Cleanliness: With unorganized workplace that existed in the laundry services, cleaning the workstation also become hard because of the condition that not yet neat. Lack of cleaning duty schedule also make the work area become dirtier since there is no regular schedule for cleaning the work area.
4. Standardize: It is important to set a standard process for the regular work, so there is consistency in the process and every employee should follow this process. The regular process has to be maintained to ensure everything runs smoothly within the workplace, such as maintenance, laundry procedure and others. According to the result of analytical of undesirable effect, it shows that lack of standardization could become one of problems that happening in SMEs' laundry service. This is caused by no SOP in conducting laundry service.
5. Discipline: With the 5S implementation, it is important to create all these four aspects "Sort, Simplify, Sweep, standardize" in practice to continue to increase the efficiency. Lack of discipline and lack of motivation from employee is also the problems that currently suffered by SMEs' laundry service. Discipline is not to be taken lightly, in fact discipline is a pivotal factor for the production system as a whole (Hirano, 1995).

The 5S checklist was assessed through the result of questionnaire that already been spread to 30 different SMEs' laundry service and based on the direct observation that done by researchers.

Table 4.8 5S Assessment in SMEs' laundry service
 Source: Hirano (2009), Sari, Suryoputro, & Rahmillah (2017)

Category	NO	Item	Score				
			0	1	2	3	4
Seiri (Sort/Organization)	1	Unneeded machines, tools, or other equipment?		1			
	2	Unneeded inventory, supplies, parts, or materials?			2		
	3	Sorting out laundry based on the fabric treatment?		1			
Seiton (Neatness/Orderliness)	4	Are there location indicators for shelves and other storage?		1			
	5	Are there Item Indicators for shelves showing which items go where?		1			
	6	Are there quantity indicators for maximum and minimum inventory amount?	0				
Seiso (Cleaning/Cleanliness)	7	Are floors keep shiny and clean?			2		
	8	Are machines wiped clean often?		1			
	9	Have specific cleaning tasks been assigned?		1			
	10	Has cleanliness become a habit?		1			
Seiketsu (Standardization)	11	Are necessary information related to service process available?	0				
	12	Are standards are known and visible?	0				
	13	Are checklists exist for all cleaning and maintenance jobs?	0				
	14	Is everyone knows his/her responsibility, when and how?		1			
	15	Have rules been established for maintaining the first 3S's?	0				
Shitsuke (Discipline)	16	Do employees obey rules and regulations?		1			
	17	Do success stories are being displayed?		0			
	18	Do reward and recognition for employees is conducted?		1			
	19	Do there any socialization or training for 5S?		0			
Total Score					14		

Table 4.8 shows a 5S checklist in the SMEs' laundry service in general. This checklist is a brief case study related to the finding based on the questionnaire gathered

from the respondents and direct observation in the laundry services. This checklist using 5 scoring system which are: 0 for very bad, 1 for bad, 2 for OK, 3 for good, and 4 for very good. As shown above, the total score for the current service laundry SMEs is 14 with an average of 19 items is 0.736 which means that the application of 5S in the SMEs' laundry service is very bad.

Based on the problem above, it is identified that SMEs' laundry service not yet familiar or apply 5S principle. Introduction and application of 5S surely will bring great impact to the laundry services. Thus, this research tries to give recommendation focusing on the waste and the root causes of waste that happens in SMEs' laundry service using the principles of 5S. The solution that will be proposed are made as realistic and applicable as possible with the understanding of the service laundry capability because too many changes at the same time would not bring successful implementation of Lean (Rexhepi & Shrestha, 2011). Thus, this study proposed some applicable and easy tools and techniques to start creating a Lean culture within the laundry services.

1. Sort: Implementing tagging this will be useful to sort out objects and equipment that are not working or not used. Suppose certain equipment are not working or unnecessary broke are creating cluster around work, then employees will put the tag with short description about the problem. Tagging can be done with different colors and different meaning depending to the problem encountered. For instance, in this case the tagging can be put on the customer's laundry based on their date of pick up and put them in the inventory which already sort out based on the date of pick up. By doing this the employee doesn't need to search through all the inventory to find the customer's laundry and just need to check on the shelf of "today" pick up from the inventory and their tag. The tagging can also be put on the customer's laundry that needs special attention, like easily wear off type of fabric or any other fabric that need special attention. By doing this, employees can easily identify which laundry that need to be checked and avoiding any mistake that can possibly happen in the laundry process because of human error factor. Different color can also be applied for every purpose of the tagging.

2. Neatness: All work areas, cabinets, and machines were cleaned, organized, and labelled for contents (Fairbanks, 2007). Every shelves, cabinet, and inventory is labelled for content that must be put in it. Labeling can come in many forms, for instance labelling for every tool's storage, label for every maximum and minimum amount of material in stock, label for laundry storage, etc. By implementing this, employees can save so much time for searching for tools or item, also employees can know when or what to restock based on the indicator for needed material for laundry process. By labeling the laundry's inventory shelves can also save time for customers when employees are searching the customer's laundry in the inventory.

3. Cleanliness: Liker & Meier, (2007) noted that people, who are not aware of 5S, assume that this tool is used only to clean the workplace. Working environment without waste in process is the result of 4S implementation, while "sweep" or cleanliness is to ensure the clean, tidy place without cluster. With the implementation of suggested tools for "Sort" and "Simplify," working area will be well organized, which will make it easier and faster even for cleaner to clean and maintain the place. Improving the awareness of staff or employee regarding to cleanliness and hygiene can further improve the environments. A daily cleaning task should be assigned for every employee, to maintain tidy and clean workspace.

4. Standardize: Standardize can lead to cost saving, as well as to increase the efficiency in staffs since they will follow the same process that leads to no confusion. To overcome the problem, first, the laundry service needs to make clear SOP and any information related to service process in the laundry services that can be followed by all employees through the service process. The second suggestion is to simplify daily checklists for the employees, the checklist contains primary information about who is responsible on the certain job that concerned.

5. Discipline: Educate & Empower staff for process improvement. Management should educate employees by mentioning the benefits that can be generated from Lean especially 5S in this case and empower them to make improvement.

Management should also display success stories related to implementation of 5S in the place where every employee can see it. By doing so it increases the spirit in employees and encourage them to always apply 5S in service process. Making a reward process for well-performing employees and penalties for employees who work poorly or broke a rule that already been set is also one way to maintain or increase employee motivation in work. In this way, self-discipline can be implemented in the department. Feedback from consumer is also important. After completing service consumer should be suggested to fill feedback form to understand their experience. This will be also helpful to find some area where Lean can be applied or further improved.

4.3.3 Dojo and Quality Circle

In conducting this method, first the SME need to make a group of employees who meet once a week for an hour at a regularly scheduled time. The first few Circle meetings involve teaching the members several techniques for identifying, analyzing, and solving problem. The ground rules for the Circle meetings stipulate that members will not criticize each other, that they will arrive at decisions by consensus whenever possible, and that they will each participate in the problem solving activities in an orderly fashion. Taking turns in a pre-scribed order seems rigid and formal at first, but may be essential to the success of the Circle, it insures equal participation among members and reduces the likelihood of domination of the group by a few members and other "group think" characteristics.

After the first few instructional meetings, the Circle begins the process of identifying a problem. Any problem which is related to the group's work performance is fair game. Circles are typically not permitted to select problems related to wages, benefits, promotions, grievances, interpersonal disputes, issues covered by the existing union contract, or problems related to another person's or group's work performance. Once the problem is analyzed and a plausible solution is developed, the Circle members prepare an

oral presentation which describes the problem and the benefits as well as costs of the proposed solution. Management, including at least one, person from the very top of the organization, is invited to attend a "management presentation" during which the Circle members present the prepared material and ask management to implement the proposed solution.

It is a general rule that management always accepts and implements the Circle solutions. This is only possible due to the fact that the facilitator has kept management informed about each step of the Circle's deliberations and has kept the Circle informed about what is and is not possible from management's perspective. Therefore, any solution which reaches the management presentation stage is an acceptable one. This model can be modifying to some extent to make it fit their organizational and administrative structure. (Roll & Roll, 1983)

By conducting this method there will be knowledge sharing between employees through other employees and awareness between employee will be come to life within the organization, also the knowledge sharing between employees that conducted resulting in the gap of the uneven skill and experience between employee will be closer. By conducting this method, a sharing session also come to life between management and employees. Management can hear what employees want to say and employees can hear what management want to say, making the communication between management and employee goes well within the organization thus resulting in a positive influence on the dynamics of work productivity, working technology optimization and working methods.

4.4 Lean Methodologies Verification

This study resulted in recommendation of three lean method combination and how to implement them in SMEs' laundry service to overcome 8 type of waste that happens in laundry services. SVSM is proposed to overcome the waste of overproduction and waste

of over-quality or duplication. 5S is proposed to dealing with waste of delay, waste of unneeded transport or movement, waste of excessive variation or lack of standardization, and waste of failure demand or lack of customer's focus. Dojo and Quality Circle is proposed to overcome waste of underutilized resources and manager's resistance to change. By combining these three lean methodologies all of waste can be overcome.

To knowing that the three proposed lean method is applicable and can give a good impact in the SMEs' laundry service in eliminating their waste and to try implementing lean concept in the SMEs' laundry service, a survey is conducted to 30 same laundry services. The questionnaire is related to the recommendation that given based on the brief case study conducted before.

Table 4.9 Result of Verification Questionnaire

Attribute	Description	1	2	3	4	5	Total
SVSM1	Add new procedure to separate the laundry not just based on the type and color of the laundry but also based on the type of service that customer choose.	0	0	3	14	13	30
SVSM2	Branch the duplication procedures to optimize the use of resources and tools that the laundry already has without adding new tools or resources in the system	0	0	2	15	13	30
5S1	Implementing Tagging for customers laundry	0	0	3	12	15	30
5S2	All work areas, cabinet, and machines were organized and labelled for contents	0	0	3	14	13	30
5S3	All work areas, cabinet, and machines were cleaned daily.	0	1	3	13	13	30
5S4	Make a simple SOP that can be followed by all employee through the service process and make simple daily checklist for the employee that contains information about who is responsible about certain job that concerned.	0	0	5	13	12	30
5S5	Employees education about the benefit from implementation of lean and empower them to make improvement.	0	0	4	15	11	30

Attribute	Description	1	2	3	4	5	Total
5S6	Making a reward process for well-performing employees and penalties for employees who work poorly	0	1	2	16	11	30
5S7	Making survey about customer feedback for further improvement	0	1	1	17	11	30
D&QC1	Make a group of employee who meet one a week at a regularly scheduled time to discuss the problem that happens and how to solve that, sharing session, etc	0	0	4	11	15	30

Likert five-point scale data are used for this questionnaire as shown in Table 4.9. The score 1 is representing strongly disagree, 2 representing disagree, 3 for neither agree or disagree, 4 for agree, and 5 indicating strongly agree. The analysis is performed by using a category based on the value of the frequency distribution. The frequency distribution values are performed using the following formula:

$$\text{Interval} = \frac{\text{Max value} - \text{Min Value}}{\text{Number of Classes}}$$

$$\text{Interval} = \frac{5 - 1}{5} = 0,8$$

Based on the above calculation, then it is obtained the limitation of data valuation category as follows:

- 1,00 - 1,80 = Very low rating / Strongly Disagree
- 1,81 - 2,60 = Low rating / Disagree
- 2,61 - 3,40 = Moderate / Neither Agree or Disagree
- 3,41 - 4,20 = High rating / Agree
- 4,21 - 5,00 = Very high / Strongly Agree

Table 4.10 Summary of Verification Questionnaire

Item	Mean	Category
SVSM1	4.07	Agree
SVSM2	4.37	Strongly Agree
5S1	4.4	Strongly Agree
5S2	4.33	Strongly Agree
5S3	4.27	Strongly Agree
5S4	4.23	Strongly Agree
5S5	4.23	Strongly Agree
5S6	4.23	Strongly Agree
5S7	4.27	Strongly Agree
DQC1	4.37	Strongly Agree
Mean total	4.28	Strongly Agree

Based on Table 4.10, the respondents or in this case the 30 laundry services are mostly strongly agree with the recommendation given to them. For recommendation SVSM1 the score given by the respondents is 4.07 as the indication of agree with the recommendation and see it as an applicable recommendation within the SMEs' laundry service. SVSM2 result score of 4.37 which indicate strongly agree with the recommendation. 5S1 shows score of 4.4 which indicate strongly agree with the recommendation given, 5S2 with score of 4.33, 5S3 with score of 4.27, 5S4 with score of 4.23, 5S5 with score of 4.23, 5S6 with score of 4.23, 5S7 with score of 4.27 which all indication strongly agree with the given recommendation and see it as an applicable solution given to the limited resources that SMEs have. Lastly DQC1 with score of 4.37 which also the indication strongly agrees with the recommendation. Total mean of all of the recommendation is 4.28 which indicates strongly agree with the recommendation.