5S towards sustainable competitive advantage in franchise retail business

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Abstract. This study aims to find empirical evidence in filling the "how-to” gap of a service company in order to have a sustainable competitive advantage by adopting lean system or known as a workplace organization. This study surveyed 150 customers from three largest franchise minimarts in Bandung City in order to determine the characteristics and interrelations that occur in the three research objects observed, namely 5S or workplace organization, service's waste, and service quality. The method used is descriptive method and structural equation modeling based on the least squares method or PLS-SEM. The statistical tools used are SPSS20 and SmartPLS3. The results reveals that the three largest franchise minimarts in Bandung City, had a high level of service quality, low service's waste, and well-managed workplace organization. The relationship between them shows that the three franchise minimarts continue to survive and continue to grow after operating for more than 3 decades, because they implemented a workplace organization (5S, seiri-seiton-seiso-seiketsu-shitsuke), so that this can reduce the occurrence of service's waste by 82.4 %, where even this has an impact on increasing service quality by 27.9% with a very high model strength of 73.5%.

Keywords: sustainable competitive advantage, workplace organization, franchise minimarts, service quality

1. Introduction
Organizations that have policies and procedures in exploring resources and capabilities become more valuable, rarely, inimitable, and organized (VRIO) will have sustainable competitive advantage [1]. This concept was criticized in 2006, which states that this theory hasn’t been clearly unraveled and considered unable to solve the problem [2], so it was considered to have no implications on managerial aspects. Related to the utilization of resources and capabilities, lean production as a total productive maintenance approach has been allegedly able to improve the performance of manufacturing companies in the last 2 decades because it is beneficial in improving quality, reducing inventory, cost efficiency, and reducing large workspaces [3]. This practice is widely used in manufacturing companies [4], [5], [6], [7], [8], [9]. At present, business people engaged in the service sector have begun to adopt lean production by combining preventive maintenance practices and the concept of total quality, which known as “workplace organization”, or in Japan famous as 5S-Seiri, Seito, Seiso, Seiketsu, and Shitsuke [3], [10], [11].
Today, many studies examining the application of 5S that adopted in to the service sector [12], [13], [14], [15], [16]. Franchise Minimart as one of the retailer service industries that grew in Indonesia in the early 1990s, are now increasingly mushrooming and very easy to find in almost every corner of the city, even in densely populated rural areas, outperforming traditional retailers that first existed [17]. This triggered a curiosity of researchers in an effort to explore the key of sustainable competitive advantage at the retail business in Indonesia.

Sustainable competitive advantage could improve firm performance directly [18], [19], [20]. Firm performance, related to the efficiency could be influenced by the company's internal capabilities, while external capabilities affect firm financial performance [21]. Firm performance can be measured through 3 dimensions, namely productivity, energy efficiency, and environmental performance [22], in this case, environmental performance is characterized by the existence of environmental management that reduces the negative impact on the environment around the company. Some service companies' performance can be measured using financial and non-financial dimensions, such as employee satisfaction, customer satisfaction, and service quality [23]. The organized hypermart or minimart at Portugal is confirmed as the preferred type of retail store, because of the convenience in shopping, more practical, and low prices [24]. Based on the empirical and research gap above, the author will conduct empirical evidence to determine "how-to" an organized retailer (franchise minimart) explore resources and capabilities in improving service quality as one of retailer performance measurement.

2. Literature review
2.1. Relationship workplace organization (5S) on service quality (SQ)
Value and quality are the main factors for customers in assessing products/services produced by a company, so it is important for companies to know how consumers define these qualities. The dimensions of product quality differ from the dimensions of service quality. Quality of service is more related to time, and interactions of employees and customers [3], more specifically stated that service quality in retail business is related to four factors, namely physical structure, reliability, personal interaction and policy [25], this differs from the concept of quality services in the retail banking business, which states that there is no significant relationship between service quality and customer perceived value [26]. Other study states that intercultural competence and personal interaction are important variables for service quality and customer satisfaction of retail outlets in Malaysia [27].

The concept of Evans & Lindsay, as quoted in operation management, states that the service quality of a service company can be measured by measuring time & timeliness, completeness, courtesy, consistency, accessibility & convenience, accuracy, and responsiveness [3]. Recent research developments state that the integration of quality can strengthen the reaction between physical service quality and electronic service quality and it can provide more optimal service quality experience [28]. Refers to the firm performance (in this case measured through service quality), lean paradigm and its implementation that using lean production tools at the manufacturing industry is tested very strongly able to contribute positively to the performance, while in the service industry, its implementation has been adopted in recent years [11] known as workplace organization (often called 5S) and mostly used in the office environment and service environment, like university [13]; hospital [15], [16], etc. The goal of workplace organization is to create a functionally organized work environment, and not just give the impression that everything is organized. The 5S comes from 5 terms in Japanese, describe workplace practices that are conducive to controlling visualization and controlling service activities [11], [29]:

1. Seiri/sort (sorting what is needed).
   Separate what is needed from unneeded items, like tools, spareparts, materials, documents, etc.
2. Seiton/set in order (put something in its place ).
   Arrange neatly what's left, a place for everything and everything in its place.
3. Seiso/shine (keep the 2S clean and organized).
   Clean and wash. Deeper means to conduct inspections through these cleaning activities.
4. Seiketsu/standardize (standardize 3S in the form of policies and procedures).
Cleanliness that results from the regular performance of the first 3S.
5. Shitsuke/sustain (practicing 4S above is sustainable).

Discipline and maintain the system that has been placed while continuous improvement in each first 4S, so it’s never ending process.

The 5S testing at retail companies that have been operating for 35 years shows that lean systems can explain retail performance very well [30]. The implementation of lean principles to some food and agriculture industry retailers in the UK shows positive results on the stability and/or improvement of retail performance, especially profitability, but for most supply chain entities in the industry, lean implementation results in a high level of dependence on buyers and levels low profitability [31]. Based on the literatures review that confirmed about the relationship of lean system in retail industry or known as 5S on service quality, the authors could determine the hypothesis below:

**Hypothesis 1: Workplace Organization (5S) is significant to influence The Service Quality (SQ).**

2.2. **Relationship workplace organization on service’s waste**

Service’s waste is defined as activities that do not add value to services [10]. Ohno published eight types of waste, namely defects, overproduction/services, transportation, waiting, inventory, motion, overprocessing, & unutilized people [10]. Many things have been done to reduce waste, such as what has been done in several restaurants in the UK and the Netherlands by increasing consumer awareness of the negative impact of food waste, encouraging excess food redistribution incentives and enabling recycling of waste [32]. In addition, one study in Bangkok showed that 87.2% of respondents thought that everyone must be responsible and be a part of waste management [33]. Other findings state environmental concerns; corporate profit orientation; support from the community; and habit of doing the 'right' thing is a driving factor in reducing waste in retail companies in New Zealand [34].

When 5S is implemented, that’s when the retailer’s extraordinary opportunity to reduce service waste that has no added value. The implementation of lean system was allegedly able to accelerate the completion of the work of salesmen by 10% -15% [11]. The 5S lean tool can create an orderly flow, improve conditions of working, could reduce unnecessary waste of time, space and unutilized human resources [5]. The application of a lean tool in the form of 5S in managing the workplace turned out to be able to reduce the time and motion of employees who are not useful [10]. Based on the literatures review that confirmed about the relationship of lean system in retail industry or known as 5S in reducing service’s waste, authors determine the hypothesis below:

**Hypothesis 2: Workplace Organization (5S) is significant to influence The Service’s Waste (SW).**

2.3. **Relationship service’s waste (SW) on service quality (SQ)**

The ability to reduce effective service time, resulting in the emergence of the potential time allocation towards proactive sales activities that enable to realize sales growth of 12% -15% from the previous year [11]. Another study states that internal environment quality (reflectioned by physical environment, layout) and outcome quality (reflectioned by excellent shopping experience, minimum waiting time, selection of the things) are proven related to overall service quality positively in retail business [35], and also proven that the utilized personnel in retail business have relationship with retail service quality [36]. Based on the literature review that confirmed about the relationship of service’s waste in retail industry on service quality, the authors could determine the hypothesis below:

**Hypothesis 3: Service’s Waste (SW) is significant to influence The Services Quality (SQ).**
3. Methodology

This research is a survey research, and using descriptive method & structural equation modelling based on the least squares method in order to find and analyze the implication lean sytem (5S) at franchise minimarts in order to improve the sustainability service quality. The objects of research are service quality, service’s waste, and workplace organization. The subject research observed are three different largest franchise minimarts in Bandung City that have spread very fast in the last 3 decades. 150 respondents are customers of the three retail franchises above who are willing to contribute to answering the online questionnaire distributed. In an effort to analyze empirical data obtained from online questionnaire content, the author uses SPSS20 and SmartPLS3 as statistical tools to answer some of the hypotheses proposed. Valid and reliable indicators, as seen in Table 1, that used as a manifestation of each observed variable in this study have been tested using instruments test in the pre-survey.

![Diagram of Research Paradigm]

**Figure 1. Research Paradigm**

| Variables | Indicators |
|-----------|------------|
| SERVICE QUALITY, Measurement of service quality is more related to time and interactions that occur between customers and employees [3] | Completeness (SQ_complete): The availability of complete services provided |
| | Courtesy (SQ_courtesy): Employees always treat customers pleasant |
| | Consistency (SQ_consisten): Service is provided consistently |
| | Accessibility (SQ_access): Easiness to access the service |
| | Accuracy (SQ_accuracy): The service performed right every time |
| | Responsiveness (SQ_response): The company ability in reacting to unusual situations |
| SERVICE’S WASTE, Defined as an activity that does not provide added value in the services performed [10] | Defects (SW_defect): Inefficient time, because doing something incorrectly |
| | Overservices (SW_overserv): Doing something exceeding what is not needed |
| | Waiting (SW_wait): The queue is due to unfinished work |
Workplace Organization (often called 5S), as a combination of total preventive maintenance and total quality techniques currently adopted in several office and service environments [11]

| WORKPLACE ORGANIZATION (5S) | Seiri (WO_seiri) | Seiton (WO_seiton) | Seiso (WO_seiso) | Seiketsu (WO_seiketsu) | Shitsuke (WO_shitsuke) |
|-----------------------------|-----------------|-------------------|-----------------|------------------------|-----------------------|
| (often called 5S)           | Sorting what is needed | Put something right in its place | Keep 2S above, clean, wash, and inspect | Standardize the 3S above, in the form of policies & procedures | Practicing the above 4S sustainable |

4. Finding and discussion

The questionnaire was distributed to 200 consumers of three franchise minimarts, but only 150 respondents were willing to participate in this survey. The following is descriptive analysis of the data obtained. In Figure 2, it can be seen that the average consumer perception of the service quality of the three largest franchise minimarts in Bandung City is 5.74 (on 7 scale), this means that the level of service quality of franchise minimarts is quite high.

Next, Figure 3 shows that the average consumer perception of the implementation of 5S (seiri, seiton, seiso, seiketsu, and shitsuke on the franchise minimarts is also quite high, at 5.74 (on 7 scale). Meanwhile, as seen in Figure 4, the average perception perceived by consumers regarding service waste that occurs in the franchise minimart is very low (2.48 on 7 scale). This can be used as an indicator that service’s waste of the franchise minimarts have been well managed and can be minimized very high.

![Figure 2. Franchise Minimart Service Quality](image1)

![Figure 3. Workplace Organization](image2)

![Figure 4. Service’s Waste](image3)
Verification analysis presented by SEM-PLS using SmartPLS3 as statistical tool. Full model is shown in Figure 5.

Figure 5. Full Model Analysis.

Table 2. Measurement Model Analysis

| Construct               | Reliability & validity | Cr. Alpha | CR      | AVE  |
|-------------------------|------------------------|-----------|---------|------|
| Workplace Organization (WO) | 0.903                  | 0.926     | 0.676   |
| Service’s Waste (SW)     | 0.918                  | 0.938     | 0.753   |
| Service Quality (SQ)     | 0.888                  | 0.918     | 0.691   |

Cr. Alpha: Cronbach’s Alpha; CR: Composite Reliability
AVE: Average Variance Extract

Figure 5 shows all indicator of variables at the full model have outer loading factor > 0.708 and the AVE of each variable (Table 2) is above 0.5, so the convergent validity of the indicators at the full model is declared valid [37], [38]. All variables have Cronbach’s Alpha Value > 0.70 and composite reliability > 0.708, so it can be stated that the variables of workplace organization, service’s waste, and service quality are reliable [39].

Table 3. Structural Model Analysis

| Hypothesis  | Path Coeff. | t Stat | P Value |
|-------------|-------------|--------|---------|
| Hypothesis 1: WO → SQ | 0.613 | 6.512 | 0.000 Sig. |
| Hypothesis 2: WO → SW | -0.824 | 20.386 | 0.000 Sig. |
| Hypothesis 3: SW → SQ | -0.279 | 2.920 | 0.004 Sig. |

WO: workplace organization; SW: service’s waste; SQ: service quality

Table 3 shows the results of structural model analysis at the significance level 5%. The following equations are formed from the analysis of structural model that are running using SmartPLS3.
The substructure-1 Prediction Model:

\[
\text{Service's Waste} = -0.824 \text{Workplace Organization} \tag{1}
\]
\[t\text{ stat} = 20.386; \ p\text{ value} = 0.000; \ R^2 = 0.678\]

Statistically, this result supports the hypothesis 2 significantly at 5% because \(t\)-test value of 20.386 (greater than 1.96) and \(p\)-value of 0.000 (less than 0.05). The workplace organization affects the service’s waste about 82.4% negatively. It means more well managed the workplace organization (or 5S-seiri, seiton, seiso, seiketsu, and shitsuke), more lower the service’s waste occurs. It’s inline with the statement that Lean’s Mandate is eliminate waste [3].

The strength of the model in making predictions, tested through \(R^2\) value. Refer to the rule of thumb, if \(R^2\) value is 0.67; 0.33; and 0.19 respectively, it indicate strong, moderate, and weak prediction model [40], so that the \(R^2\) value in substructure-1 is about 0.678, then that prediction model is classified strong. It means that variations that occur in service’s waste can be explained by workplace organization by 67.8%.

These results are in line with empirical evidence about the benefits of implementing lean tools (5S), which if done well in a long period of time, "lean" is able to produce "more" in managerial implications, such as: (1) employees will have more time to do other things that are beneficial and even profitable, (2) more space to expand / divide jobs without requiring additional capital, (3) more efficient in operational costs, so that it can be allocated to technology investments, etc.; (4) more opportunities to involve employees in improving skills, involving employees in making continuous improvement [41].

The substructure-2 Prediction Model:

\[
\text{Service Quality} = 0.613 \text{Workplace Organization} - 0.279 \text{Service's Waste} \tag{2}
\]
\[WO \rightarrow SQ: t\text{-stat} = 6.512; \ p\text{-value} = 0.000\]
\[SW \rightarrow SQ: t\text{-stat} = 2.920; \ p\text{-value} = 0.004\]
\[R^2 = 0.735\]

Based on the substructure-2 prediction model, statistically the hypothesis 1 is supported and significant at 5%, because \(t\)-test value of 6.512 (greater than 1.96) and \(p\)-value of 0.000 (< 0.05). The workplace organization has a positive effect to the service’s quality directly by 61.3%, it means more well managed the workplace organization, more higher the service quality occurs. Besides that, the service quality is also supported by service’s waste by -27.9% significantly, because \(t\)-test value of 2.920 (greater than 1.96) and \(p\)-value of 0.004 (less than 0.05). It means lower service’s waste, more higher the service quality occurs.

The strength of the model in making predictions, tested through \(R^2\) value. The \(R^2\) value in substructure-2 is 0.735 and it’s classified strong. Based on the substructure-2, the variations that occur in service quality can be explained by workplace organization about 61.3% positively and service’s waste by 27.7% negatively.

Table 4. Indirect Effects and Total Effects

| Hypothesis | Indirect Effects | Total Effects |
|------------|-----------------|--------------|
|            | Path Coeff. | t Stat | P Value | Path Coeff. | t Stat | P Value |
| Hypothesis 1: WO → SQ | 0.250 | 2.756 | 0.006 | 0.843 | 30.318 | 0.000 |
| Hypothesis 2: WO → SW | 0.824 | 20.386 | 0.000 |
| Hypothesis 3: SW → SQ | -0.279 | 2.920 | 0.004 |

WO: workplace organization; SW: service’s waste; SQ: service quality
Based on the Figure 5, the number of direct effects, indirect effects, and the total effects that occur in the research model is tabulated at Table 4. It can be concluded that the service's waste is an excellent mediating variable for the ability of workplace organizations to improve service quality in the franchise minimart in Bandung City. The workplace organization (5S) can affect an increase in service quality by 61.3% directly, but if it is mediated by service's waste, then the ability is increased by 23% so that the total ability of the workplace organization in improving service quality at the franchise minimart in the city of Bandung become 84% significantly.

5. Conclusion
At the end of the study, researchers found that the characteristics of the three largest franchise minimarts in Bandung City had a high level of service quality, low service waste, and well-managed workplace organizations in 3 last decades. In addition, researchers also find empirical evidence in filling the "how-to" gap of franchise minimart to have a sustainable competitive advantage in franchise retail business, is confirmed through the application commonly used in the manufacturing industry namely "lean systems" or in other terms "lean production tool" which is then in the service industry is known as the "workplace organization" or "5S". This 5S system was able to appear as a booster in improving service quality in the franchise minimart in the city of Bandung.

Based on the measurement & structural analysis of the full model, it can be seen that the relationship between 5S, service's waste, and service quality shows a strong relationship, as well as the influencing between variables, is proven empirically very significant. Lean system (5S) is able to reduce service's waste in retail business (in franchise minimart at Bandung City) significantly, this is in line with the results of research that states lean systems can improve the operational efficiency of IKEA DC Älmhult, Sweden in the process of receiving and shipping [42]. Furthermore, the reduction in service's waste and well-managed workplace organizations has been proven could improve the service quality in the observed retail business (in this case the 3 largest franchise minimarts in Bandung City). The influence that occurs between the three variables is varied (positively and negatively) but the testing result is confirmed very significantly.

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