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THE EFFECTIVE IMPLEMENTATION OF THE 5S CONCEPT ON THE PERFORMANCE: A CASE STUDY OF A MANUFACTURING COMPANY IN MALAYSIA

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Abstract

Purpose-The aim study is to investigate the Impact of the 5S on a manufacturing company's performance in Malaysia. **Research Methodology**-A quantitative method was used in this study. The questionnaire was distributed to an electronic manufacturing company in Malaysia. A total of 62 responses were received out of 150 sampling sizes. The study employed partial least squares structural equation modeling was applied to test a set of hypotheses originating from a conceptual model of the 5S concept and productivity. **Findings**-Empirical results revealed a significant influence of al 5S on the organization's productivity. Likewise, findings also exhibited significant role productivity in implementing the 5S to achieve role performance of the organization. Effective implementation of the 5S concept on the performance of a company can influence productivity. Set in the order of Sort, Straighten, Shine, Standardize and Sustain has a strong positive correlation on productivity. All the 5S variables made a significant contribution to the prediction of the dependent variable **Practical Implications**-The findings of the study imply that the effective implementation of 5S in order set should be considered as a system to achieve the productivity of an organization. The effective implementation of 5S does not improve productivity, but these concepts also allow other concepts such as lean manufacturing, six sigma, Total Productive Maintenance, Kaizen to work side by side to improve overall company productivity.

Keywords: Lean Operations, Lean Production, Total Quality Management, 5S

1. INTRODUCTION

Globalization has a significant impact on the manufacturing sector as it continues to evolve at a rapid pace. Market needs, product designs, product life cycles, production modifications, and technological developments in manufacturing capacities have changed due to globalization, prompting manufacturing industries to respond by implementing proactive measures to stay competitive (Madanhire & Mbohwa, 2016). Manufacturing companies are now focusing more on product quality, cost reduction, and timely delivery. Companies are putting a premium on efficiency. The manufacturing segment is the key driver of economic growth in Malaysia, accounting for 22.1 percent of total GDP.

Manufacturers encounter difficulties and challenges due to the impact of rising costs, inefficiency, quality, and safety in the manufacturing sector (Seddik, 2019). According to Asaad, Saad, and Yusoff (2015), customer demands, desires, and tastes are rapidly changing,

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and manufacturing businesses must adapt. In the manufacturing industry, there are a variety of concepts and approaches for increasing productivity and efficiency. Continuous Improvement (Kaizen), Total Productive Maintenance (TPM), Cellular Manufacturing / One-piece Flow Production Systems, Lean Six Sigma, Just in Time (JIT) Production / Kanban, and Lean Manufacturing are the most well-known and widely used methodologies.

Lean Manufacturing or Lean Operations is a concept under the Toyota Production System (TPS). It is a concept implemented globally because it has superior cost, quality, and flexibility in response. According to Noda (2015), waste elimination and cost reduction are the lean system's main purposes. An article by Kanamori, Sow, Castro, et al. (2015) mentioned that the potential solution for quality improvement for a workplace organization is the 5S lean method. The 5s lean method is a philosophy developed by Hiroyuki Hirano in the 1980s under the Toyota Production System (TPS). This method has used a checklist to perform lean operations. According to Todorovic and Cupic (2017), one of the most relevant tools in lean manufacturing is the 5s concept in which it is a strategy for the changes and learning in organizational development. Kanamori et al. (2015) stated that 5S is a method suggested for quality improvement by removing all factors that do not value and maximize value-added levels in an organization. Similarly, Davis (2018) mentioned that this concept is a proven tool on the factory floor for lean practitioners. The contribution of 5S concept is towards the productivity and quality improvement process (Hernández Lamprea, Carreño and Martínez Sánchez, 2015).

The following section of the paper covers various literature based on the conceptual framework. The following section presented a detailed discussion about the conceptual model's research methods and data analysis methods. The last section is about discussion and result, and conclusion.

1.1 Problem Statement

According to past study, low organizational performance, which can be caused by various variables, is the most common problem in the manufacturing industry. According to Umoh and Torbira (2013), the most significant effect is a decrease in a company's productivity. According to a study conducted by Sánchez, Rodriguez, Maruyama and Salazar (2015) on a metal and rubber manufacturing company, the factory had a dirty and disorderly environment that caused safety issues for employees and hampered product tracking both internally and externally of the manufacturing process. It resulted in numerous concerns with the company's production and product quality.A study was conducted by Gupta and Chandna (2019).

2. LITERATURE REVIEW

2.1 Organizational Performance

In every corporation or organization, one of the fundamental goals of existence and remaining competitive in the market is to create profit. As a result, an organization's performance is critical since it can reveal how well or poorly a company is functioning. According to Ali and Islam (2020), organizational performance is one of the most important constructs in management research. Riaz and Hassan (2019) explained that organizational performance is

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described as an organization's ability to adapt to all systematic processes relating to its goal-seeking behavior to sustain its functions efficiently. According to Huang & Huang (2020), organizational effectiveness cannot be judged by a single metric: manageability.

2.2 Productivity Measurement

Vilasini, Gamage, Kahangamage, et al. (2012), the measurement of quantifying output against the amount of input is called productivity. The link between the quantity of goods and services as output and the quantity of input such as labor, capital, land, energy, and other resources. Similarly, Heizer, Render, and Munson (2016) defined productivity as the division of the output ratio as goods and services by the in-out ratio as resources, labour, and capital. Therefore, productivity measurement efficiency can be described by productivity (FIJI National University, 2020). Islam and Islam (2017) stated that the two main factors in an organization that productivity depends on are external factors that are not controllable and internal factors that are controllable. According to Heizer, Render, and Munson (2016), productivity can be measured by two factors: single-factor productivity and multiple or total factor productivity. Based on US Government (2015), the ratio of goods and services produced (outputs) to two or more resources (inputs) is multiple-factor productivity. On the other hand, the ratio of goods and services produced (outputs) to one resource (input) is single-factor productivity (Heizer, Render, and Munson, 2016). In this research, single-factor productivity is used as the dependent variable.

2.3 The Lean Manufacturing Concept

As manufacturers strive to sustain themselves in the high competition market, many frameworks and concepts developed as a strategy adapting into the production system. The TPS (Toyota Production System) is a philosophy that focuses on continuously developing the company, treating employees with respect, and adhering to standard work norms (Heizer, Render, and Munson, 2016). This concept has contributed to the operations of world-class manufacturing, mainly in the Toyota Motor Corporation. Lean Manufacturing or Lean Operations is a continuous improvement approach under the Toyota Production System (Veres, Marian, Moica, et al., 2018). According to Jasti and Kodali (2015), TPS has two pillars: Just-In-Time and Jidoka. Figure 1 shows the House of TPS (Lai, et al., 2019). The philosophy behind the house of TPS is a framework used to organize manufacturing facilities, provide the best quality product with the lowest cost possible, and achieve the shortest lead time (Harrmann et al., 2008). Continuous improvement and waste removal are the focus of all TPS methods. According to Marodin et al. (2018), Lean Manufacturing improves the effectiveness and efficiency of a company and is more effective from the increase in product quality and customer value.

2.4 The House of TPS

Hill (2018) stated that the approach of this concept on the manufacturing process is to minimize waste and maximize value to the optimum. An article by Jimenez et al. (2018) mentioned that the aim is to identify waste that affects the manufacturing process, such as disruption in the production flow, lead times, quality, and cost. Nassereddine and Wehbe (2018) stated that

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waste elimination and continuous improvement are the two basic LM elements. Similarly, Heizer, Render, and Munson (2016) mentioned that lean operations could supply customers with the customer's exact desire without waste through continuous improvement. Overall, its main objective is to eliminate waste in the production line and improve production efficiency.

2.5 The 5S Concept

The implementation of the 5S method is recommended to identify the waste that occurs in a workplace. A 5S concept is a checklist tool for Lean production in which it focuses on 'housekeeping' as a means of waste reduction (Heizer, Render, and Munson, 2016). The 5S concept is a philosophy developed by Hiroyuki Hirano in the 1980s under the Toyota Production System. Thus, Kanamori et al. (2015), the potential solution for quality improvement for a workplace organization is the 5S lean method. The main objective is to remove waste from the production line. The 5S concept focuses on producing the best possible technique in the production line and developing a 360-degree view to enable a defect-free product (Gupta and Chandna, 2019). The function of 5S is used to reduce unwanted waste and optimize productivity by maintaining a consistent system in the workplace (Houa et al., 2018). Heizer, Render, and Munson (2016) stated that reducing waste can be done by having a neat, orderly, and efficient workplace. Some benefits of the 5S concept are magnifying visibility of the root cause, increasing sense of morale, providing a better impression toward customers, and improving productivity to minimize the search time (Seddik, 2019). According to Davis (2018), the 5S concept consists of: Sort, Straighten, Shine, Standardize and Sustain.

2.6 Total Quality Management

Corresponding to Ramaj et al. (2019), total quality management is an integrative management philosophy with guiding principles representing the foundation of a constantly improving organization. TQM has been regarded as the most critical platform for continous improvement and performance (Ishanka and Gooneratne, 2018). This philosophy seeks to enhance quality and productivity (Sahoo and Yadav, 2018). Interestingly, waste eliminations, quality improvement, shorter lead times, cost reduction, improvement of employee morale, and continuous improvement are the objectives of TQM (Petcharit, Sornsaruht, and Pimdee, 2020). In a broader term, in TQM, there are four philosophies in quality management: Crosby's 14 points of quality are free, Deming's 14 points, Juran's Quality Trilogy, and Feigenbaum's Total Quality Control.

2.6.1 Management Commitment and Quality Improvement Team

Management must set up discussions for quality improvement to emphasize defect prevention (Crosby, 2005). It can be defined as a short and clear quality policy statement for the organization that must be adopted by the management (Alghamdi, 2016). The quality improvement team must take responsibility for the respective departments to commit operations to actions (Crosby, 2005). The improvement methods must include the involvement of everyone in the organization (Alghamdi, 2016).

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2.6.2 Quality Measurement, Cost of Quality Evaluation and Quality Awareness

Quality measurement determines the quality status of the company by establishing quality measurement (Crosby, 2005). By recording quality status, corrective actions and improvement actions can be taken. The non-conformance issue can be identified (Alghamdi, 2016). Cost of Quality (COQ) determines where corrective action is needed, which will be profitable (Crosby, 2005). This is also to determine the cost of quality and set value to the cost of quality (Alghamdi, 2016). Quality awareness creates awareness in the organization by sharing with employees such as supervisors training to orient employees and provide visible evidence by establishing booklets, films, or posters (Crosby, 2005). This is done to increase the awareness among everyone in the organization (Alghamdi, 2016).

2.7 The Impact of 5S on A Company's Performance

Few studies and research have been done on the practical implementation of the 5S concept on the performance of a manufacturing firm. Veres et al. (2018) conducted a case study on the Impact of the 5S method in an automotive company has illustrated some significant relationships between the two variables of the 5S concept and the company's performance. The study was conducted on Hirschmann Automotive in Austria, which was an automotive parts manufacturer. An audit checklist of 5S was used with 17 questions to run a monthly study basis after implementing the 5S concept for a period of 1 year from January to December 2016. According to a research article by Sangode (2018), the 5S methodology was one of the most critical improvement factors of efficiency in the workplace. This study takes a sample of 10 small and medium manufacturing firms in the Nagpur region, India. These include four firms from each sector, such as the chemical industry (2), manufacturing industry (2), agricultural industry (3), and automobile industry (3).

Sharma and Lata (2017) conducted a study on the effectuation of 5S in a Copper Wire Drawing industry in Delhi, India. After the 5S concept is introduced to the company, the problems were removed. The results showed significant improvement. The workplace was seen to be healthy and enjoyable after it was cleaned correctly, and it also reduced frustration levels and increased efficiency. The unnecessary time consumption was reduced by providing personal equipment to the machine operators. That causes the search time to consolidate. The machine has improved its performance and life from the cleaning and proper inspection. After the files and documents were organized, there was an increased positive attitude among employees with no more frustrations and unnecessary disputes. The organization of the storeroom has led to proper functioning in all departments of the company.

A research article by Assad, Saad, and Yusoff (2015) researched the 5S and Kaizen (continuous improvement) Impact on organization performance in a Malaysian Automotive company using Rasch Model. The companies are mainly in the Northern Peninsula of Malaysia. This paper used a quantitative approach of evaluation. Questionnaires are distributed to representatives of management in the organization. The Rasch model is used as the instrument of analysis through items and reliability of the participants.

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Table 1: Comparison of different approaches from different authors based on author's own compilation

Article title	Methodology	Result
The 5S Impact in an Austrain automotive parts manufacturer.	Quantitative approach (Correlation Analysis)	Positive relationship between 5S and productivity. Scrap reduction, reduce cooling time, Reduce cost (half a million).
The 5S effects on a rubber manufacturing company in Serbia.	Qualitative approach (interview)	Safer work environment, strong ethics in the workplace, motivation of employees, waste elimination, time saving, decrease in manufacturing costs, an increase in productivity and efficiency.
Impact of 5S on the efficiency of manufacturing company in India	Quantitative approach (Chi-Square test)	The implementation of 5S into this organization helps in the increase of overall efficiency.
The study on the 5S method on a Copper Wire Drawing industry in India.	Qualitative and quantitative approach (questionnaire and interview)	Healthy work environment, reduce waste time, Increase performance, all departments are more functional.
The 5S and Kaizen Impact on the performance of a Malaysian Automotive company.	Quantitative approach (questionnaire using Rasch model)	A positive relationship between 5S and Kaizen towards organizational performance. It can be used as a tool to improve the performance of an organization. In 5S, determine cleanliness in perpetuity is the most difficult to implement.

Table 1 shows the comparison between the five articles reviewed. It can be seen that each author has a different methodology to approach the research. The methodology consists of a quantitative and qualitative approach. However, the results yield similar positive outcomes. The findings indicated that5s has a positive relationship with organizational performance. It has also contributed to other factors such as waste elimination, cost reduction, time reduction, clean workplace, and increased efficiency.

2.8 Theoretical Exposition

5s is a technique for boosting the production of existing plants. In most cases, a 5-S program is both a part of and the essential component in establishing a visual workplace. The 5S theory emphasizes effective workplace organization, a positive work environment, waste reduction, and quality and safety improvements. Eliminating waste is a win because waste is a loss. Furthermore, as we all know, with a chaotic work environment, wasted time, and scrap, there is no prospect for improving efficiency or quality (Henshall, 2019).

The Lean technique in Business Process Management is based on the concept of waste elimination. In principle, this method seems straightforward - "get rid of faults, cut out stages

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that bring no value" – but putting these ideas into practice needs strategic planning. The 5S methodology is a systematic approach to reducing physical waste and standardizing equipment and processes throughout a functional unit. Cleanliness, organization, and standardization are all critical in developing the most efficient and productive work processes, according to 5S (Celerity, 2020).

2.9 Conceptual framework

The influence of the 5S concept on productivity is the conceptual framework of this research. According to the previous studies done on the related topic, it can be seen that 5S can have a significant impact on a company's performance, defined as 'productivity'. However, the difference in this study is that the analysis will be conducted on the 5S concept individually, as shown in Figure 1 below. The independent variable consists of the elements of the 5S concept, whereas the dependent variable represents the company's productivity. The company's productivity solely relies on how efficient the production line works and the contributors involved.

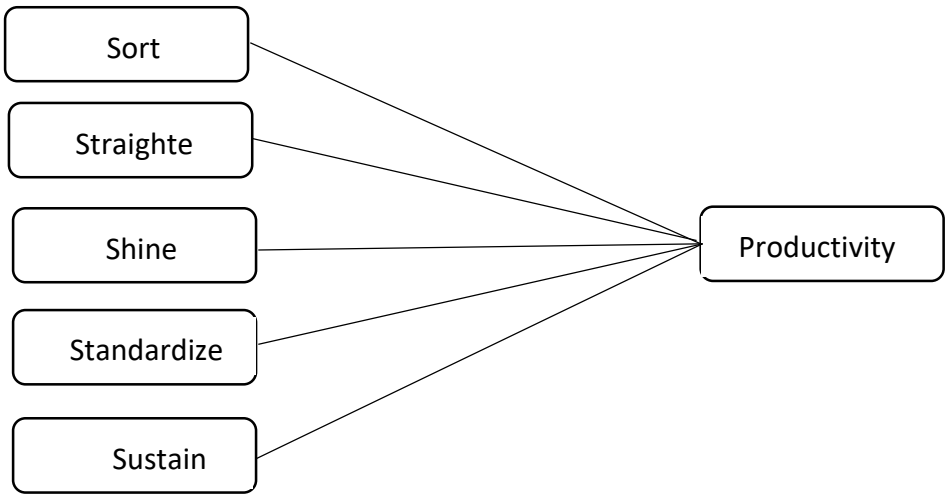

Figure 1: Framework of Independent and Dependent variables (source: own study based on own research)

3. Research Methods

The research design and approach for this project can be seen in Figure 2 below. In each step, proper research and validity are taken to ensure the information is sufficient, and the data are validated.

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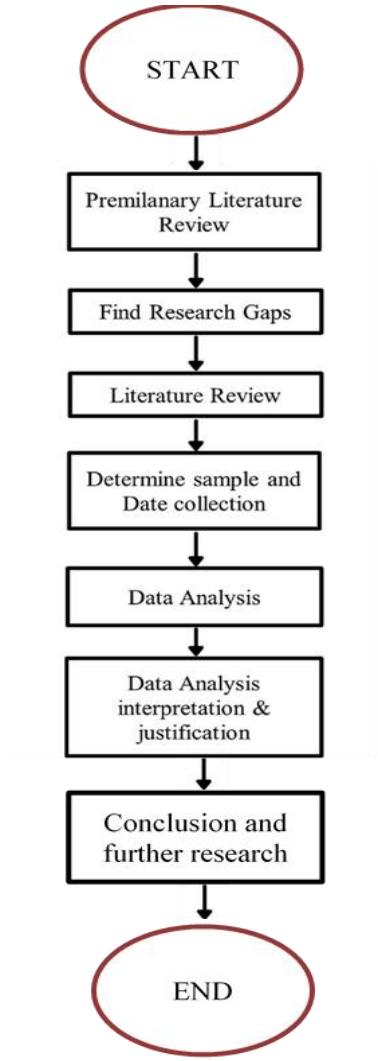

Figure 2: The research methodology (adapted from Lotfi et al., 2018; Mehrjerdi & Lotfi, 2019)

3.1 Population and Sample of the study

The population of the study was the engineers of the manufacturing department of the selected organization. This population was chosen because the 5S concept requires the knowledge of employees in the production line that can provide the outcome to the desired objective of this research paper. The sample size of this research was 100. The technique that is used for this research is convenient sampling. According to Edgar and Manz (2017), convenience sampling is the method of sample collection done by taking samples conveniently located around a location or available at the location.

3.2 Measuring Instrument

The questionnaire consists of 2 parts A and B. In part A, the questionnaire focuses on the

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demographic background of the participants. That includes gender, age, ethnicity, religion, years working, and monthly income range. Part B consists of the audit checklist to measure the 5S implementation in the organization. The questionnaire was taken from previous research and journals based on the 5S concept in a manufacturing company. The of the questionnaire was developed based on Kobarne et al. (2016). These authors used the 5S checklist form to audit a manufacturing company that manufactures piston and piston pins. Similarly, Dulhai & Asachi (2008) conducted the 5S audit with an aim on the improvement of the Autocar Exhaust manufacturing company. Whereas Costa et al. (2018) implemented the 5S methodology in a Metal Working company.

3.3 Data Analysis Method

SEM-PLS was employed for this research (Structural Equation Modelling-Partial Least Squares using Smart-Pls 3.0 to conduct the analysis. According to Davis & Cosenza (1996) and Pituch & Stevens (2016), the research study's most essential and fundamental part is a proper methodology selection. The second-generation multivariate technique applied for the validity and reliability assessment of model measures was called SEM. The first-generation methods, such as multiple regressions, were suitable for assessing constructs and relations between constructs. The first purpose of regression analysis is prediction, while a correlation intends to evaluate the relationship between the dependent and independent variables (Tabachnick & Fidell, 2007).

In research, PLS-SEM has been indicated to be a regularly used alternative in research analysis. It is more adaptable concerning measuring dimensions of the sample and because of the lack of assumptions on the data distribution (therefore, it is known as soft modeling), according to Nitzl (2016). The difference between PLS-SEM and CB-SEM is comparatively easy to understand. If the research objective is to test the theory, that is, its confirmation, the appropriate method is CB-SEM. PLS-SEM is a suitable method for the research (Hair, Ringle, & Sarstedt, 2011). PLS-SEM is not much different from multi regression. However, theoretically, PLS-SEM is comparable to the use of multiple regression analysis. PLS-SEM's primary purpose is to maximize the explained variance in the dependent construct and measure the data's quality based on the characteristics of the measuring model (Hair et al., 2016). The PLS-SEM is called "Partial Least Squares" because the parameters predictably employ a series of least squares. At the same time, the term "partial" originates from the iterative estimation procedure of the parameters in blocks (per latent variable) to the detriment of the entire model concurrently (Lee, Peters, Fayard & Robinson, 2011). PLS-SEM approach not only offers a range of advantages in comparison with the first-generation multivariate techniques, being very flexible in terms of the premises and sample dimensioning. For this study, PLS-SEM was employed, and it is a suitable application for the framework.

4. Result

A total of 100 surveys were sent out through email, with 62 of them being fully completed, yielding a response rate of 62%. It was an electronic manufacturing facility in a prime Malaysian industrial location. The complete demographic information of respondent firms is

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shown in Table 2.

Table 2: Demographic Information

Variables	Frequency (N)	Percentage (%)
Gender		
Male	54	87.1%
Female	8	12.9%
Age		
25 or below	22	35.5%
25 to 30	40	64.5%
30 or above	0	0
Ethnicity		
Malay	11	17.7%
Indian	32	51.6%
Chinese	15	24.2%
Others	4	6.4%

Variables	Frequency (N)	Percentage (%)
Education level		
Diploma	9	14.5%
Bachelor's Degree	48	77.4%
Master's Degree	5	8.1%
Doctoral	0	0
Years of Working		
2 years or less	33	53.2%
2 to 3 years	6	9.7%
3 years or more	23	37.1%

4.1 Measurement Model

The framework of the study is called a reflective model. Therefore, causality is from the construct to its measures (see figure 1). Based on this study, referring to figure 1, the reflective indicators can be seen as a descriptive sample of all the possible items available within the conceptual domain of the construct. Hence, a reflective measure commands that all indicator items are caused by the same construct, indicators related to a particular construct should be highly correlated (Hair et al., 2016). In this context, individual items should be substitutable. Any single indicator item can be left out without changing the meaning of the construct, as long as the construct has sufficient reliability (Hair et al., 2016). In simple, the relationship goes from the construct to its measures suggests that if the assessment of the latent trait changes, all indicators will change concurrently. Therefore, based on PLS-SEM, it referred to

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as a set of reflective measures is commonly called a scale. PLS-SEM is concerned about the assessment of the reflective model. Assessment of reflective measurement models comprises of composite reliability to evaluate internal consistency, individual indicator reliability, and average variance extracted (AVE) to assess convergent validity. Furthermore, the Fornell-Larcker criterion and cross-loadings are used to assess discriminant validity. In the following sections, the author reports each measure for the assessment of reflective measurement models.

Table 3 below presented the measurement model from the output of PLS-SEM. Ahmad & Zin (2010) have suggested that using the newly developed scales that are 0.50 or higher should be retained in the measurement model. Thus, the outer loadings below 0.50 should be removed from the measurement models since they indicate low value > .50 indicators contribute less to these factors. Table 3 exhibits the correlation between items whose loading ranges from 0.134 to 0.949. After deleting indicators P1 and P2, productivity indicators did not meet the trash hold point of >0.50. Therefore, productivity did not meet the trash hold point and was considered unacceptable. Sior1 and 6, Sort 1, 4, 5, and 6, and Sust1 and Sust 5 indicators were deleted to meet the trash hold point >0.5. Only productivity is not acceptable, but other latent variables are reliable.

Hair et al. (2014) and Henseler et al. (2009) indicated that the first step is to establish the reliability, internal consistency, and validity (convergent and discriminant) of the measurement model. To establish the reliability of the constructs (measurement model), composite reliability (CR) and CB alpha tests were utilized. Based on the result in Table 3, the value of CR ranged from 0.859 to 0.960, while the CB alpha ranged from 0.756 to 0.953. The results of both outcomes of the result were well above the threshold value of 0.70, as recommended by Hair et al. (2016). Therefore, it can be concluded that the variables have proven to be more highly reliable and acceptable.

Table 3: Results of Measurement Model Evaluation

Latent Variables	Indicators	Outer Loadings	Composite Reliability	AVE	Discriminant Validity	Alpha
Productivity	P1	Deleted	0.96	0.516	0.718	0.953
	P2	Deleted				
	P3	0.145				
	P4	0.134				

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	P5	0.194				
Shine	Shine1	0.831	0.925	0.674	0.821	0.902
	Shine2	0.901				
	Shine3	0.787				
	Shine4	0.858				
	Shine5	0.767				
	Shine6	0.778				
Straighten	Sior1	Deleted	0.938	0.726	0.852	0.874
	Sior2	0.792				
	Sior3	0.876				
	Sior4	0.853				
	Sior5	0.885				
	Sior6	Deleted				
Sort	Sort1	Deleted	0.859	0.669	0.818	0.756
	Sort2	0.819				
	Sort3	0.829				
	Sort4	Deleted				
	Sort5	Deleted				
	Sort6	0.817				
	Sort7	Deleted				
Standard	Stdn1	0.863	0.926	0.677	0.823	0.904
	Stdn2	0.879				
	Stdn3	0.924				
	Stdn4	0.809				
	Stdn5	0.714				
	Stdn6	0.778				
Sustain	Sust1	Deleted	0.941	0.8	0.895	0.916
	Sust2	0.949				
	Sust3	0.913				
	Sust4	0.895				
	Sust5	Deleted				
	Sust6	0.816				

Table 3 above illustrates the result of AVE via convergent validity, and the AVE value must be ≥0.50. Table 3 shows that the AVE value of all variables is greater than 0.50, so it can be inferred that the convergent validity value of all variables is accepted or proven to be reliable. Fornell and Larcker (1981) proposed that the AVE can be accepted when the value is greater than 0.50.

4.2 Evaluation of Structural Model

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The bootstrapping analysis was conducted to check the significance of each hypothesis. The test result of the inner model can be seen in Table 4. Table 4 shows that the Impact of Shine, Straighten, Sort, Standard, and Sustain on productivity are significant because the T-statistics are greater than 1.96

Table 4. Results of Path Coefficient

Mean, STDEV, T-Values, P-Values						
	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	TStatistics (|O/STDEV|)	P Values	Result
SHINE -> P	0.244509937	0.253317321	0.02538033	9.633835955	0.000	Accepted
SIOR -> P	0.185187195	0.182401815	0.017370573	10.66097221	0.000	Accepted
SORT -> P	0.094152129	0.092764152	0.017289642	5.44558013	0.000	Accepted
STDN -> P	0.334296639	0.329935169	0.023312958	14.33952054	0.000	Accepted
SUST -> P	0.231095238	0.230688802	0.024970001	9.254914972	0.000	Accepted

5. Discussion

The effective implementation of the 5S concept on the productivity of a company was studied and analyzed. It was a conceptual model that tested a sample of 62 engineers of the manufacturing department of a selected organization. The findings showed that all hypotheses made a significant contribution to the prediction of productivity. The results of the path coefficient show that each variable of the 5S concept has a significant relationship to productivity. The function of 5S is used to reduce unwanted waste and optimize productivity by maintaining a consistent system in the workplace (Houa et al., 2018). Heizer, Render, and Munson (2016) stated that reducing waste can be done by having a neat, orderly, and efficient workplace. Some benefits of the 5S concept are magnifying visibility of the root cause, increasing sense of morale, providing a better impression toward customers, and improving productivity to minimize the search time (Seddik, 2019).

The 5S concept focuses on producing the best possible technique in the production line and developing a 360-degree view to enable a defect-free product (Gupta and Chandna, 2019). The function of 5S is used to reduce unwanted waste and optimize productivity by maintaining a consistent system in the workplace (Houa et al., 2018). Heizer, Render According to Assad, Saad, and Yusoff (2015), 5S and Kaizen (continuous improvement) impact organization performance in a Malaysian Automotive company using Rasch Model.

6. Conclusion and Future Research

The study found that the effective implementation of the 5S concept on a company's performance can influence productivity. Based on the analysis, each variable of the 5S concept has a significant relationship to productivity. It can be concluded that set in the order of Sort, Straighten, Shine, Standardize and Sustain has a strong positive correlation on productivity. All the dependent variables made a significant contribution to the prediction of the dependent variable (productivity). The goal of the 5S system is to make the workplace more organized to increase safety and productivity and reduce product defect rates and other wastes. Because of

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its simplicity and ease of recognition, the 5S technique can be implemented in any organization. While the application's findings are produced quickly, an organization's long-term implementation is complicated. The 5S strategy should not be viewed as a one-time project; rather, it necessitates standardization and consistency in rules to ensure long-term implementation plans for achieving organizational goals. A successful 5S implementation depends on the organization's education and training programs being updated.

Based on the findings and analysis, the company can gain a deeper understanding from this research. This research can be used as a guideline to enhance the company's productivity by identifying the errors and defects by adequately implementing the 5S concept. To enhance further productivity, the company is recommended to focus on adequately segregating the necessary and unnecessary products in the production line. When more products are adequately segregated, more space is available, and improved workflow, productivity will increase. Additionally, the company is recommended to continuously maintain proper operating procedures and audit the work area with the 5S concept to make it a habit and culture for the company. When a regular audit is done, the flaws and errors can be shown in which area needs improvement. This can work only when proper action is taken, productivity increases.

Future research can consider other factors in order to improve this study further. Assad, Saad & Yussof (2015) use 5S and Kaizen to find Impact on company's performance. The result showed that the increase in both 5S and Kaizen increases the performance of a company. In lean manufacturing concepts, there are a vast majority of concepts that can improve productivity. Those are Lean six sigma, Total Productive Maintenance, Kaizen, and many more.

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