THE INTERNATIONAL JOURNAL OF BUSINESS & MANAGEMENT

Factor Analysis of Employee Motivation towards 5S Culture

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Abstract:
The 5S system is a system of elimination, tidiness, cleanliness, continuous standardization and habitual behavior. Implementing the 5S system requires employee motivation so that the application of 5S becomes effective and sustainable. From year 2015 to year 2017, the performance of 5S system implementation at an automotive manufacturer had been fluctuate. In year 2020, the company has a mission to achieve Total Productive Maintenance Award which is prestigious in manufacturing industry. The results of the study show that there is a direct or positive influence between employee motivation towards the culture of 5S system implementation. This can explain that employee motivation has a positive effect on the 5S culture. The parameter estimation value of the highest employee motivation variable is on the Improve variable indicator which is considered to have a direct effect. The result indicates that the employee's needs for career development and information are met in the company. The highest value of cultural variable parameter estimation of 5S system implementation is on the Shine variable indicator which is considered to have a direct effect. The result indicates that most employees can apply cleaning practice and cleaning maintenance to goods and work areas compared to other 5S system steps.

Keywords: 5S Culture, employee motivation, Pearson correlation, structural equation modeling

1. Introduction

One of the tools in implementing lean manufacturing that can be applied to reduce waste is the 5S system (Klementev 2015). The Five S System (5S) is a system developed as part of the Toyota Production System (TPS), a method that it produced by leaders at Toyota Motor Company in the early 20th century. The system focuses on implementation beginning with the letter "S", Seiri, Seiton, Seiso, Seiketsu and Shitsuke which if translated means sorting, setting in order, cleaning, standardizing and sustaining (Pheng and Khoo 2011). The 5S system not only enhances the work environment but also to ensure performance (Bryar 2002; Czabke 2007). The implementation of the 5S system is not only used to help and attract customers but also can improve quality for good services (Ho 2012). The 5S system is part of organizational culture. The success of the 5S system implementation will provide a large increase, such as increasing productivity, quality, company costs, customer costs, and also improving employee discipline (Lamprea et al. 2015). The implementation of 5S system in one of the ceramic companies in India results in more optimal use of space and improves employees who work well (Patel and Thakkar 2014). The 5S system has been proven to have a significant influence on improving internal efficiency, operational effectiveness and the delivery of goods or services that are timely for customers. To always achieve these goals, organizations must integrate 5S activities into business functions including organizational culture (National Productivity Corporation 2005). Organizational culture is able to give its members a sense of identity, increased commitment, organization and also as a behavioral control (Sravanthi and Ramana 2016). The implementation of the 5S system also increases employee engagement (Baker 2012) which has an impact on improving positive relationships between coworkers and level of effective communication with management (Press 2011). The driver for 5S system comes from employees and requires commitment from all levels, both management and non-management levels.

According to MESC (2013), the implementation of the 5S system will fail if there are many shortcomings in terms of the availability of tools, lack of employee motivation and lack of support from management. The implementation of 5S system cannot succeed if it is not supported by full involvement, hard work and dedication of employees. Employees who are highly motivated are things that companies need because managers can use their role to guide employees to reach the organization's agenda in meeting their goals. According to Ivancevich et al. (2015), intensity and persistence are important components of motivation because they become the strength of the response when a decision is made and the resilience of the behavior or how long the behavior is carried out. Based on Ellis et al. (2010) research, intrinsic motivation factors

influence employee performance more than extrinsic motivation factors such as communication, reward-punishment, and resources. According to Juhari et al. (2011), there is a positive relationship between communication and training with employee motivation towards the implementation of 5S system but has a negative relationship with the support of top management. According to Fuhrmann (2006), middle and upper level management have a higher intrinsic drive because they are motivated by challenges, incentives, salaries and other appropriate awards. Work motivation is also influenced by the clarity and validity of a job (Locke and Latham 2004).

Since its establishment in 1985, the Company implemented the 5S program in the Production and Maintenance area as well as in the Office. However, the campaign of 5S program was launched in 2013 while the 5S audit process for the Production and Maintenance area began in 2014. This application was carried out to support the lean manufacturing practice which is guided by the concept of Total Productive Maintenance (TPM) in all business activities in production, maintenance and other functions such as administration and offices. TPM is a system for maintaining and improving the quality and production system through machines, equipment, processes and employees that create added values for the company. The impact of implementing a lean manufacturing process through TPM can be seen indirectly through increasing employee productivity, increasing tonnage of tire reinforcement fabric products and increasing the company's comprehensive income. In the last three years, namely 2015 to 2017, the company received a total comprehensive income increase of USD 28.8 million or an increase of 28.19% compared to 2016 of USD 22.49 million and an increase of 115.62% or USD 12.60 million from the recorded in 2015.

The implementation of 5S system at the Company involves commitment of top management from the level of the President Director, managers and leaders. This 5S application is created and controlled by the 5S Committee where members come from various departments such as: Safety, Health and Environment Department; Production; Maintenance; Human Resource; Lean Manufacturing and other departments. The training has been conducted since 2014 to all Production and Maintenance employees from manager level to operator level regularly and annually. The communication process as a branding of 5S system implementation is done through posters, e-mail notifications, and 5S information boards in each Production and Maintenance area department. The communication process is also carried out during audit activities with the presence of feedback sessions between 5S committees, top management, and fellow employees both from internal departments and between departments. The reward and recognition process for the implementation of 5S is given through the best 5S award for the department with highest audit scores, namely by giving plaques and celebration with top management. From 2014 to 2017, the 5S audit process is carried out in the Production and Maintenance area while starting in 2018, the audit process is also carried out for the Office area.

The implementation of the 5S system from 2015 to 2017 does not always run smoothly because the motivation of employees to run 5S system is not consistent. This is showed by the fluctuating results of 5S data audit from year 2015 to 2017. Some 5S monthly audit data for 2015-2017 were found incomplete. This shows that each department is not consistent in conducting 5S audits as implementation controls. The results of 5S audit from 2015-2017 are attached to the performance of 5S implementation in Table 1. The results of the 5S system audit reflects the organizational performance which the application of sorting, setting in order, cleaning, standardizing and sustaining in the department. The inconsistency made the company and the 5S Committee intensify the implementation of 5S systems by cooperating with a Japanese consultant company to monitor and advise TPM practice (including 5S) for all departments. This is needed not only to improve company performance through a lean manufacturing process that is a long-term ongoing focus but also to achieve the company's short-term mission to get TPM awards by 2020.

Department	2017	2016	2015	Average Score Year 2015-2017
Solution Unit 1	17.32	14.88	18.86	17.02
Solution Unit 2	17.28	15.57	19.54	17.46
Mill 1	20.32	17.48	19.32	19.04
Mill 2	21.68	18.08	19.73	19.83
Ware house 1	18.68	15.19	18.10	17.32
Ware house 2	20.04	15.19	19.63	18.29
Ware house Spareparts	15.74	0.00	0.00	15.74
Yarn Production	16.90	16.08	19.39	17.46
Thread Production	13.87	13.80	19.70	15.79
Mill Maintenance	21.30	17.88	20.88	20.02
Thread Maintenance	19.71	17.51	20.85	19.36
Yarn Maintenance	16.76	16.91	19.87	17.85
Yarn Utility	19.79	16.81	20.37	18.99
Mill Utility	19.65	15.46	20.53	18.55
Thread Utility	20.38	17.26	20.63	19.42

Table 1: 5S Implementation Performance Scores year 2015 to Year 2017
Source: Company Data Year 2015-2017

2. Literature Review

2.1. Employee Motivation Assessment

The development of employee motivation assessment (EMA) by compiling a bank of question items known as i-factor began in 2001. These question items were created after a literature review of Maslow and Herzberg's motivational theories. From the research, Maslow and Herzberg developed a motivational model of employees who identified six "i-factors" that could theoretically be used in the work environment. Table 2 describes the description of each i-factor, employee statements related to each i-factor and how i-factors are related to Maslow and Herzberg's motivational theories (Gardner 2006).

I-factors	Description	Motivation Theory
1. I Know	Explanation of how the basic needs of employees are met in the work environment. This is related to working conditions, company policy and administration practices, salaries and benefits, supervision and job security.	a. Maslow: physiological needs and security. b. Herzberg: hygiene factor.
Employee Statement	The salary that I get is fair and competitive. Requirements for career advancement are clear. I can see the future in this company.	
2. Impact	Explanation of how employees see their work outside the work done. Work results can be seen at work, in the community, in the business world, or in the world.	a. Maslow: self-actualization. b. Herzberg: motivator factor.
Employee Statement	I can make changes. I can do the best in the company and commit to doing the best quality work.	
3. Improve	Explanation of how employees need career growth and how these needs can be informed in the workplace.	a. Maslow: physiological needs and security. b. Herzberg: motivator factor.
Employee Statement	I have increased my potential in this company. My manager provides regular feedback that is useful to my performance.	
4. Include	Explanation of how employees feel suitable and want to match the work environment.	a. Maslow: sense of belonging. b. Herzberg: motivator factor.
Employee Statement	I feel right in this company. The corporate culture is in line with the values that I adhere to. I got support from colleagues at work.	
5. Influence	Explanation of how employees can empower to make changes in the business world and how employees' voices are heard at work.	a. Maslow: self-confidence. b. Herzberg: motivator factor.
Employee Statement	I have enough authority to do something. My opinion is heard and appreciated.	
6. Interest	A description of the employee's interest in the job, the variety of jobs that employees need and have, the mix of tasks, and the use of employee skills.	a. Maslow: self-actualization. b. Herzberg: motivator factor.
Employee Statement	My work requires diverse skills. A mixture of various tasks stimulates my creativity and interests.	

Table 2: I-factors Description and the Relations with Employee Motivation Theories
Sumber: Gardner (2006)

2.2. 5S Culture

According to Takashi Osada (2000), the 5S system is a workplace regulation system based on the steps that use Japanese as follows: Seiri - sorting, Seiton - arrangement, Seiso - cleaning, Seiketsu-standardizing, and Shitsuke–habituation.Five S culture refers on the questionnaire checklist refers to I5SO 5-S® Audit Checklist developed by Professor Samuel KM Ho in 2011 (Ho 2012) in a department or company can be evaluated as listed in Table 3.

5S Steps		Actions
Seiri (Sort)	1.	Discard or return items that are not needed.
	2.	Items needed are stored in categories: rarely, often, and always used.
	3.	Minimum personal items should be stored at the work desk.
	4.	Make a list of things to do daily.
	5.	Have stationery as needed.
	6.	Hold regular meetings about 5S practices.
	7.	Every object has its place and is in its place.
Seiton (Set in Order)	1.	Each item has a clear name and location label.
	2.	Every place of an item must have the name label of the person responsible for the place.
	3.	The arrangement of places is distinguished based on their uses, materials and functions.
	4.	Have a standard for storing goods and control the list of items.
	5.	Arrangement of goods according to the order of entry: old items must be used first before using new items.
	6.	There is an overview of the layout of goods placement.
	7.	The bulletin board contains the latest news with a neat layout (eliminating old announcements).
	8.	Announcements that are easily seen by many people.
	9.	Items or documents that are easily retrieved and returned (in 30 seconds).
Seiso (Shine)	1.	There are individuals who are responsible for the cleaning process.
	2.	There is a simple cleaning and inspection method.
	3.	Clean places that are rarely seen.
	4.	Routine cleaning and repair activities.
	5.	Routine hygiene activity campaign.
Seiketsu (Standardize)	1.	Make neat standard arrangement with clear lines and angles.
	2.	Provide danger signs and signs in areas or items at risk.
	3.	Providing safety and security equipment including firefighting and exit signs.
	4.	Provide clear labels and work instructions.
	5.	Provide color codes on roads, items, and clear direction signs.
	6.	Provide color codes on paper documents and storage.
	7.	Give a sign of the party responsible for the work area.
	8.	Maintaining the condition of the work area so that it is not messy and chaotic.
	9.	Each item has a department label which owns the item.
Shitsuke (Sustain)	1.	Always use personal protective equipment such as helmets / gloves / shoes according to procedures and needs.
	2.	Always communicate 5S activities via telephone or other media.
	3.	Practice 5S everyday for 5 minutes.
	4.	Every job is completed on time.
	5.	Know what to do in an emergency.
	6.	Has a list of 5S performance and organizational structure assessments.
	7.	There is a design guide for applying 5S and following it.
	8.	There are 5S audits and repairs every 3 months.
	9.	Always check environmental conditions according to 5S standards.

Table 3: I5so 5-S® Audit Checklist
Source: Ho (2012)

3. Hypotheses Development

3.1. The Effect of Demography on Employee Motivation and 5S Culture

The implementation drive for 5S system comes from employees and requires commitment from all levels, both management and non-management levels. According to Fuhrmann (2006), middle and upper level management have a higher intrinsic drive because they are motivated by challenges, incentives, salaries and other appropriate awards.Sharma and Singh (2015) stated that the barriers to implementing 5S are a lack of communication and disparity between top management and shop-floor employees. Research conducted by Tampubolon (2008), the longer of employees' service year and the higher of their education level show that they are more understanding and responsible in implementing the 5S culture. Divisions that are often supervised by production managers and management and have fewer workers are

considered to have more 5S culture. Based on service, a significant difference in the application of 5S culture only occurs in Seiri (sort) and Seiton (set-in-order) culture where the longer working period of the employee shows the higher application of the work culture of self. Thus, the hypotheses can be put forward as follows: $H_{1.1}$: demography significantly effects on employee motivation; $H_{1.2}$: demography significantly effects on 5S implementation culture.

3.2. The Effect of Employee Motivation on 5S Culture

Full support from top management to implement 5S in the company is an important motivation for employees in the successful implementation of 5S (Kazmierski 2016; Daraei et al. 2015). Top management must not only support 5S practice but also must provide time and funds to carry out activities related to 5S implementation (Rahman et al. 2013). The application of 5S needs to get support from management with a role to facilitate the following: a) knowledge of the importance of 5S for the organization; b) provide time, resources, and infrastructure for employees in implementing 5S; c) personal involvement in the application of 5S; d) creating appreciation and recognition, both visible and invisible; and e) promoting 5S businesses that are currently underway (Ennin and Obi 2012; Barraza 2012). The lack of support and commitment of top management also the lack of acceptance and leadership authority in the application of 5S culture triggered the failure to implement a lean manufacturing (Daraei et al. 2015; Randhawa and Ahuja 2015). The hypotheses can be put forward as follows: H2: employee motivation significantly effects on 5S implementation culture.
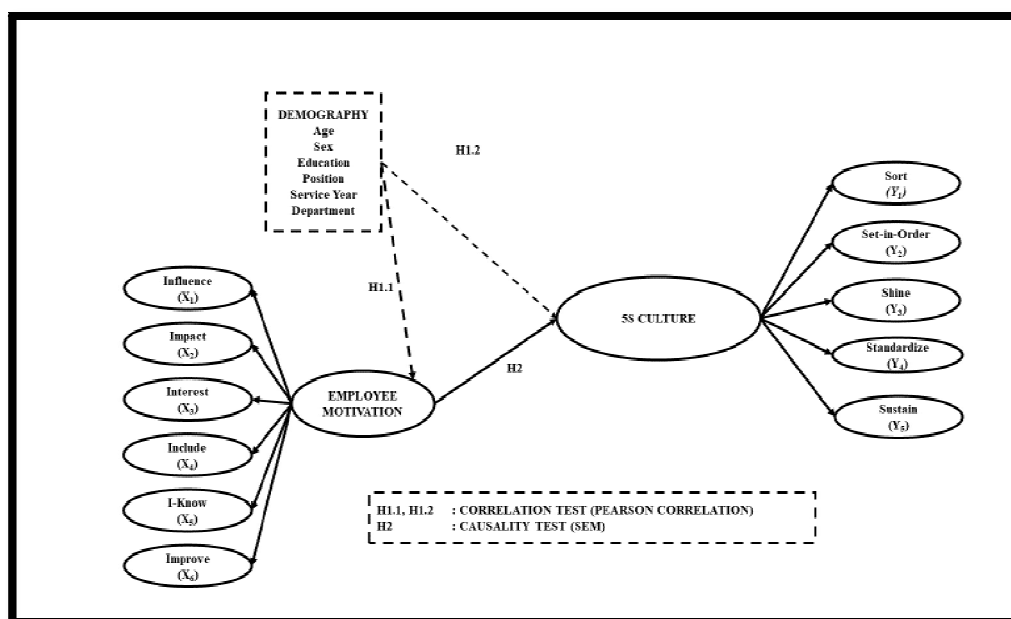

Figure 1: Research Hypotheses

3.3. Research Method

The research was conducted in an automotive manufacturing in Indonesia. Primary data sources were used for employee motivation and 5S culture variables through questionnaire and secondary data was used for 5S performance variable through company data. The questionnaires were distributed to 316 employees consisting of Manager, Engineer, Group Leader, Supervisor, Team Leader, Technician and Operator positions through stratified random sampling. The population of the study was 1200 employees.

Quantitative data obtained through questionnaires are processed by giving data codes to uniform data and then will be analyzed using descriptive statistical methods. Qualitative data is processed through descriptive analysis. Descriptive statistics are performed to see the relationships between variables. Descriptive analysis is used to determine the characteristics of respondents in general. Characteristics of respondents will be displayed statistically and provide information about gender, age, last education level, position, department and length of employment. Quantitative data analysis was performed using mean score analysis, Pearson correlation analysis and Structural Equation Modeling (SEM) analysis. Validity testing will use Confirmatory Factor Analysis (CFA) while reliability testing uses ConstructReliability (CR). As for the purposes of rejecting or accepting hypotheses, the author uses a significance level of 5 percent (α=0.05) according to the model testing statistics using SEM analysis according to Kline (2011). Descriptive data analysis of respondents' assessment of the questionnaire statement using an average score analysis.Structural equation modeling (SEM) is used to find causal relationships that can measure relationships that are unable to be measured directly or so-called latent variables. The variables used in this study were 3 latent variables, namely 1 exogenous latent variable (employee motivation) and 2 endogenous latent variables (5S implementation culture and 5S implementation performance). Likert scale 1 to 4 was used on employee motivation and 5S culture variables. Research variables and indicators can be seen in Table 4.

Latent Variable	Operational Definition	Indicator Variable	Symbol
Employee Motivation (X)	Development of employee incentives identified through indicators I-know, impact, improve, include, influence, and interest that are operated in the work environment (Gardner 2006).	Influence	X1
		Impact	X2
		Interest	X3
		Include	X4
		I-Know	X5
		Improve	X6
5S Culture (Y)	Application of workplace regulatory systems based on steps: sorting, structuring, cleaning, standardization, and habituation (Ho 2012).	Sort	Y1
		Set-in-Order	Y2
		Shine	Y3
		Standardize	Y4
		Sustain	Y5

Table 4: Research Variables and Indicators

4. Results and Discussion

4.1. Demographic Characteristics of Respondents

    The sample of this study is 309 respondents. Demographic aspects of respondents include age, sex, education level, position, service year and departments. Summary of demographic characteristics of respondents in this research is showed in Table 5. The demographic characteristics of respondents towards the variables is showed in Table 6.

Character.	Category	N	%	Character	Category	N	%
Education	<High School	8	2.59	Position	Operator	174	56.31
	High School	250	80.91		Technician	57	18.45
	Diploma	19	6.15		Team Leader	34	11.00
	Bachelor	26	8.41		Group Leader	12	3.88
	Master	6	1.94		Engineer	19	6.15
					Manager	8	2.59
Age (Years)	≤20	8	2.59	Sex	Male	296	97.41
	21-30	144	46.60		Female	8	2.59
	31-40	64	20.71				
	41-50	57	18.45				
	>50	36	11.65				
Department	Solution Unit 1	87	28.16	Service Year	<1	9	2.91
	Solution Unit 2	59	18.39		1-5	115	37.22
	Mill 1	17	5.50		>5-10	55	17.80
	Mill 2	9	2.91		>10-15	22	7.12
	Warehouse 1	5	1.62		>15-20	15	4.85
	Warehouse 2	4	1.29		>20-25	25	8.09
	Warehouse Spareparts	7	2.27		>25-30	48	15.53
	Yarn Production	18	5.83		>30-35	20	6.47
	Thread Production	35	11.33				
	Mill Maintenance	27	8.74				
	Thread Maintenance	12	3.88				
	Yarn Maintenance	7	2.27				
	Yarn Utility	8	2.59				
	Mill Utility	10	3.24				
	Thread Utility	4	1.29				

Table 5: Demographic Characteristics of Respondents

    Table 5 showed the highest percentage of respondent number in every category, which 80.91% of respondents were high school graduates, 56.31% employees in Operator position, 46.60% were in age range of 21 to 30 years old, 97.41% were males, 28.16% were from Mill 1 department and 37.22% had already been working for 1 to 5 years in the Company. Table 6 showed the average score of each variable from each department. The highest average score of employee perception towards work motivation came from Warehouse Spareparts (3.27) department while the lowest came from Thread Maintenance (3.03) department. Overall, employees from all departments agreed to most statements in the questionnaire which represents their motivation to work in the Company. The highest average score of employee perception towards the implementation of 5S culture came from Thread Utility (3.44) department while the lowest came from Thread Maintenance (3.07) department. Overall, employees from all departments agreed to most statements in the

questionnaire which represents the implementation of 5S culture in the Company, consisting of the practice of sorting, setting in order, cleaning, standardizing and sustaining.

Department	N	Employee Motivation	5S Culture
Solution Unit 1	87	3.07	3.13
Solution Unit 2	58	3.21	3.28
Mill 1	17	3.19	3.25
Mill 2	9	3.22	3.30
Warehouse 1	5	3.25	3.37
Warehouse 2	4	3.23	3.20
Warehouse Spareparts	7	3.27	3.31
Yarn Production	18	3.07	3.13
Thread Production	35	3.12	3.21
Mill Maintenance	27	3.08	3.15
Thread Maintenance	12	3.03	3.07
Yarn Maintenance	7	3.12	3.10
Yarn Utility	8	3.05	3.08
Mill Utility	10	3.13	3.24
Thread Utility	5	3.05	3.44
Total	309	3.14	3.22

*Table 6: Demographic Characteristics of
Respondents towards Research Variables*

4.2. Evaluation of Model Fit Level

According to Hair et al. (2010), model fit assessment is conducted through several stages i.e. 1) overall model fit; 2) suitability of measurement model; 3) suitability of the structural model. Based on the overall model fit assessment, this model has already qualified and almost good fit with the Goodness of Fit Index (GFI) 0.60. Thus, the research model can be considered as feasible.
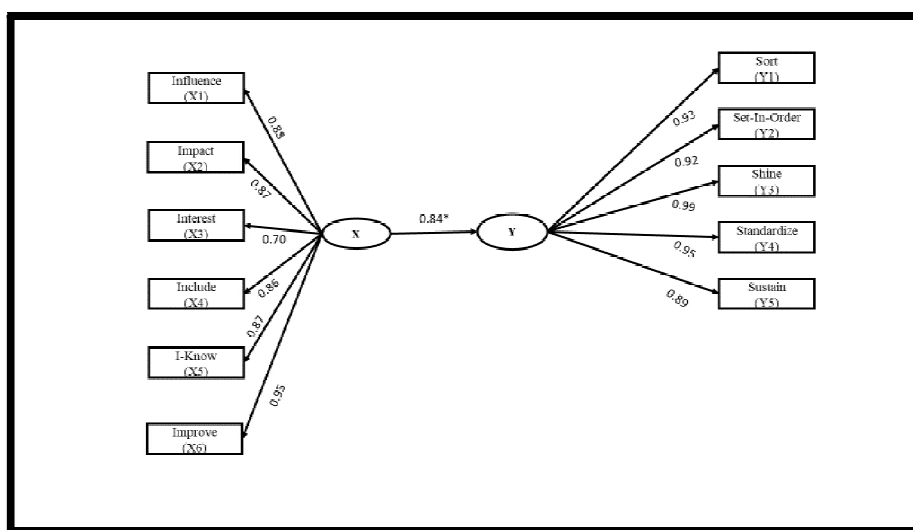

*Figure 2: SEM Measurement Model
(*) Categorized As Significant*

The reliability test results indicate that the model meets the requirements, which is indicated by the value of Variance Extracted (VE)>0.5, which means the model is valid, and the value of Construction Reliability (CR)>0.7, which means that each latent construct is declared as valid and reliable. The results of the structural model suitability test are shown in the SEM model in Figure 2.

4.3. Contributing Indicators to Latent Variables

The latent variables used in this research are employee motivation and 5S culture. Indicators that contribute the most to explain employee motivation is improve (X6). This result showed that employees' needs of career development and career information is fulfilled and driven by it. It also represents the fulfillment of intrinsic motivation regarding physical needs and job security. The indicators that contribute the most to explain 5S culture is Shine (Y3). It showed that employees have already implemented the cleaning and cleaning maintenance to stuffs and workplace compared to other 5S steps i.e. sorting, setting-in-order, standardizing and sustaining. This result was slightly different with Tampubolon's research (2008) that 5S culture which could be implemented the most is sustaining. The difference of the study results

perhaps because this research was conducted in tire cord fabric manufacturer which is part of automotive industry and runs the 24-hour operation with advanced machineries and systems while in Tampubolon's research, it was conducted in shoe manufacturer which probably needs more of human efforts.

4.4. Hypothesis Testing

	Profile	5S Culture	Motivation	Profile	5S Culture	Motivation
Pearson corr.	Dept	-.054	-.057	Education	-.043	-.028
Sig. (2-tailed)		.344	.322		.451	.626
N		309	309		309	309
Pearson corr.	Age	.091	.015	Position	-.020	-.025
Sig. (2-tailed)		.112	.797		.732	.659
N		309	309		309	309
Pearson corr.	Sex	-.036	-.060	Service Year	.120	.063
Sig. (2-tailed)		.524	.293		.035*	.271
N		309	309		309	309

Table 7: Result of Pearson Correlations
* Significant at Confidence Level 0.05 (2-Tailed)
** Significant at Confidence Level 0.01 (2-Tailed)

4.5. Effect of Demography on Employee Motivation and 5S Culture

Based on the results of the Pearson correlation test, it was seen that there was no significant relationship between department, age, sex, education and position with the two variables, namely employee motivation and culture of 5S system implementation. This means that department; age, sex, education and position do not have a strong relationship with employee motivation and the culture of 5S system implementation. The results of the insignificant relationship between age and education are contrary to the results of Tampubolon (2008) study which states that there is a significant relationship between the age of employees and education level where the higher age of employees and education level shows 5S culture increasingly applied. Based on the results of the Pearson correlation test, it can be seen that there is a significant relationship between the period of work (service year) with 5S culture. This is proved by the Pearson test statistics where the significance value is <0.05 (0.000). This means that there is a strong relationship between years of service and 5S culture. This shows that the longer the working period, the more powerful the employee will be in applying the 5S system culture.

Variable			Path Coef.	t-values	Conclusion	Remarks
H2: Employee Motivation	→	5S Culture	0.84	11.11	Significant	H2 is accepted

Table 8: Estimation Result of SEM Model

4.6. Effect of Employee Motivation on 5S Culture

Based on the test results at Table 8, it is known that the path parameter estimation of employee motivation variable (X) on the 5S culture (Y) has a significant effect. The results of the path estimation are seen that is equal to 0.84 with t count 11.11. This can explain that work motivation has a positive effect on the culture of 5S system implementation and in accordance with Juhari et al. (2011) which states that employee motivation has a positive relationship with the culture of 5S system implementation. In general, employee motivation assessed in this study covers how the basic needs of employees are met in the work environment (company policy, salary, benefits, supervision and job security); how employees see their work impact beyond the work done; the need for career growth; compatibility with the work environment, the power to change and employees' interest towards their work.

5. Managerial Implications

Based on the results of above research, employee motivation significantly influences 5S culture. Therefore, employee motivation can be increased by management in the following ways: 1) regular and periodic controlling and auditing of the 5S system both at the Production, Maintenance and Office departments by the 5S Committee and assisted by the coordinator area; 2) consistent actions in implementing the 5S system from the Operator level to the top management level also contractors; 3) increasing the frequency and quality of 5S system training to all employees; 4) increasing communication of 5S programs to all employees through briefings, meetings or other events on a weekly or monthly basis; 5) assessment of 5S system implementation is included in the performance assessment of all levels of employees; 6) provision of awards or rewards to employees or departments that are able to implement 5S program by giving souvenirs and/or cash; 7) increasing the number of facilities and infrastructure as well as work equipment which support the implementation of the 5S program in all departments (with area managers' approval); 8) planning a specific time of at least 1 hour per week for 5S implementation; 9) top management support in the form of attendance and participation in 5S activities.

6. Conclusions and Recommendations

6.1. Conclusions

The results of the measurement model evaluation show that the overall model is fit with the data so that the results of this study can be declared valid and reliable. Based on the results of the analysis, the GFI value is 0.60 so that the model in this study belongs to the category of almost good fit. The results of the Pearson correlation test show that there is a very significant relationship between the performance of the 5S system and department implementation. Then there is a significant relationship between the culture of 5S system implementation with years of service and positive correlation. This shows that the longer the working period, the more powerful the employee will be in applying the 5S system culture. Employee motivation has a positive and significant effect on the culture of 5S system implementation. "Improve" variable indicator become motivation factors of employees with the highest influence. This shows that the employee's needs for career development and information are fulfilled in the company and fulfillment of intrinsic motivation factors regarding physical needs and the need for security in work. The highest value of 5S cultural is on the "Shining" variable indicator. The results of this Shining variable indicator indicate that employees are the best on implementing cleaning and cleaning maintenance on goods and work areas compared to other 5S system step.

6.2. Recommendations

Based on the results of this study, the 5S culture can be improved through employee motivation. The management can apply the managerial implications in this research by prioritizing improvements in Improve motivation factor and a culture of 5S system implementation that focuses on the culture of sorting, setting in order, standardizing and sustaining. Research needs to be conducted regularly to look at other variables that might change according to the dynamics of business and company. For further research, it is recommended that further research to carry out other cultural theory of 5S system implementation, other employee motivation theories and to involve other potential variables that influence the 5S performance such as management commitment, 5S training, 5S communication, employee responsibility, 5S system implementation plan, leadership and resistance to change so that a comprehensive model that is related to the 5S performance is obtained.

7. Acknowledgement

8. References

i. Baker, J.V. (2012). The effects of change management on employee engagement: using lean principles to increase engagement [theses]. Long Beach (US): California State University.
ii. Barraza, M.F. & Ramis-Pujol, J. (2012). An exploratory study of 5S: a multiple case study of multinational organizations in Mexico. Asian Journal on Quality. 13(1): 77–99.
iii. Bryar, P,& Walsh, M. (2002). Facilitating change - implementing 5S: an Australian case study. Managerial Auditing Journal. 17(6): 329-332.
iv. Czabke, J. (2007). Lean thinking in the secondary wood products industry: challenges and benefits [theses]. Corvallis (US): Oregon State University.
v. Daraei, M.R., Hosseini, M.H., Niksirat. I,& Kianbakhsh, A. (2015). Identifying and ranking the critical success factors affecting implementation of 5S. American Journal of Service Science and Management. 2(6): 67-73.
vi. Ellis, J.D., Arendt, S.W., Strohbehn, C.H., Meyer, J,& Paez, P. (2010). Varying influences of motivation factors on employees' likelihood to perform safe food handling practices because of demographic differences. Journal of Food Protection. 73(11): 2065-2071.
vii. Ennin, Y.C., &Obi D. (2012). 5S: Good Housekeeping techniques for Enhancing Productivity, Quality and Safety at the Workplace, Export Quality Bulletin No 89/2012, International Trade Center [internet]. [Accessed on 2018 February 25]. Retrieved from: http://www.intracen.org/uploadedFiles/intracenorg/Content/Exporters/Exporting_Better/Quality_Management/AssetPDF/Bulletin%20EQM%2089%20-%205S.PDF.
viii. Fuhrmann, T. (2006). Motivating employees. WCDS Advances in Dairy Technology. 18: 93-101.
ix. Gardner, V.A. (2006). Psychometric appraisal of an employee motivation assessment with open item selection [dissertation]. Denver (USA): University of Denver.
x. Hair, Jr. J.F., Black, W.C.,Babin, B.J.,& Anderson, R.E. (2010). Multivariate Data Analysis: A Global Perspective 7th Edition. New Jersey (US): Pearson Prentice Hall.
xi. Ho, S.K.M. (2012). Global sustainable development through the integrated lean management (Green 5S) model for TQM. Nang Yan Business Journal. 1(5): 27-37.
xii. Ivancevich, J., Konopaske, R., &Matteson, M.T. (2015). Organizational Behavior and Management 10th Edition. New York (US): McGraw Hill.
xiii. Juhari, N.H., Abidin, N., &Omar, M.W. (2011). Factors influencing employees' motivation in implementing 5S system. Elixir Human Resource Management. 39(2011): 4836-4847.
xiv. Kazmierski, R. (2016). Determining drivers: using survey data to pinpoint key factors that influence 5S Performance. Six Sigma Forum Magazine. 15(4): 17-22.

xv. Klementev, S. (2015). Implementation of the 5S model as a source to increase labor productivity and as a platform for the continuous improvements for SPPM [theses]. Lapeenranta (Finland): Saimaa university of Applied Sciences.

xvi. Kline, R.B. (2011). Principles and Practice of Structural Equation Modeling 3rd Edition. New York (US): The Guilford Press.

xvii. Lamprea, E.J.H., Carreño, Z.M.C., &Sánchez, P.M.T.M. (2015). Impact of 5S on productivity, quality, organizational climate and industrial safety in Caucho Metal Ltda. Ingeniare - Revista Chilena de Ingenieria. 23(1): 107–117.

xviii. Locke, E.A., &Latham, G.P. (2004.) What should we do about motivation theory? Six recommendations for the twenty-first century. Academy of Management Review. 29(3): 388-403.

xix. MESC. (2013). 5S, Visual management and CI culture: learn and practice 5S in real plant and understand why 5S is the base of continuous improvement culture. [Accessed on 2018 February 18]. Retrieved fromhttp://www.chinamesc.com/PDF/products/5S-EN-TS.pdf.

xx. National Productivity Corporation. (2005). 5S: Guidebook Step-by-Step Implementation. [Accessed on 2018 July 8]. Retrieved fromhttp://www.ipbl.edu.my/intra/sistem/5s/5s.pdf.

xxi. Patel, V.,& Thakkar, H. (2014). A case study: 5S implementation in ceramics manufacturing company. Bonfring International Journal of Industrial Engineering and Management Science. 4(3): 132–139.

xxii. Pheng, L.,& Khoo, S.D. (2001). Team performance management: enhancement through Japanese 5S principles. Team Performance Management. 7(8): 105-111.

xxiii. Press, R.(2011). The engagement factor: lean practices in healthcare; the Brant community healthcare system, Brantford, Ontario [theses]. Victoria (Canada): Royal Roads University.

xxiv. Rahman, M., Mondol, D.K., &Ali, A. (2013). Nexus of employee motivation with HRM and workplace behaviour: an assessment of the dominant factors. Management Research and Practice. 5(4): 49-57.

xxv. Randhawa, J.S., &Ahuja, I.S. (2017). 5S - a quality improvement tool for sustainable performance: literature review and directions. International Journal of Quality and Reliability Management. 34(3): 334-361.

xxvi. Sharma, R., &Singh J. (2015). Impact of implementing Japanese 5S practices on total productive maintenance. International Journal of Current Engineering and Technology. 55(22): 2277–4106.

xxvii. Tampubolon, V.B. (2008). Evaluasi penerapan budaya kerja 5S [theses]. Jakarta (ID): Universitas Indonesia.