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Research Paper

A Study on Employee Opinion towards 5S Implementation in PGC Textile Corporation (P) Ltd, Tirupur

Management

KEYWORDS : 5S concepts, Quality improvement, Environmental performance, Productivity, Health and safety standard.

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ABSTRACT

The purpose of the study is to identify the employee opinion on effectiveness of 5 S practices implemented in PGC Textile Corporation (P) Ltd, Tirupur. PGC Textile Corporation (P) Ltd is a garment manufacturing company which exports its products to national and international market especially to European countries. The company is more concern with quality standards and already got ISO 9000, ISO 14000 and SA 8000 related certification. At present, the company aims to improve productivity through quality improvement technique called 5S (Housekeeping method). 5S practice is one of the continuous improvement technique used to improve housekeeping, work efficiency, productivity and provide health and safety environment which leads to quality workplace. The five pillars of 5S commonly referred as (Sort, Set in order, Shine, Standardize, and Sustain). 5S is a process of carrying the work place systematically and gradually implementing housekeeping procedure to maintain structure and standardization in an organization. A well organized workplace motivates people, in all levels of management to utilize various resources efficiently and effectively. The study is also focus with various activities adapted during implementation of 5S with the contribution and support by their employees. From this study, the effectiveness of 5S implementation is understand through questionnaire method by considering major factors such as productivity, environmental performance, quality improvement and health and safety standards in the work place. The evaluation of 5S practice enables each company to identify their potential level of quality improvement and success factor for their sustainability in a competitive global market.

Introduction

In recent years, the practice of 5S is commonly used among the Indian firms in order to enhance quality and productivity. Since it was introduced by Takashi Osada in the early 1980s, it is believed that applying the 5S techniques could considerably raise the environmental performance in production line including housekeeping, health, safety, work efficiency and employee behavior. The 5S is the acronym of five Japanese words which stands for Seiri (Sort), Seiton (Set in order), Seiso (cleanliness), Seiketsu (Standardization) and Shitsuke (Self discipline). Organizing the 5S team is an important approach in solving many potential problems. In the other hand, the 5S practice is a technique used to establish; maintain quality environment in an organization to function effectively and promised the employees to be more self-discipline. The 5S concept is applicable for all types of manufacturing and service sectors. The concept of 5S has a significant contribution to the success of Total Quality Management (TQM) implementation. Most Japanese companies claimed that the 5S benefit is not only for improving their physical environment, but also improving their thinking processes as well. Up to now, 5S could be categorized as a crucial tool to ensure that the accurate deployment of housekeeping in an organization.

Basic principles of 5S

The principles underlying a Five S practice at first appear to be simple, obvious common sense by practicing in workplace.

- Sort - the first step in making things cleaned up and organized
- Set In Order - organize, identify and arrange everything in a work area
- Shine - regular cleaning and maintenance
- Standardize - make it easy to maintain - simplify and standardize
- Sustain -maintaining what has been accomplished

1. **Seiri / Sort**- This is very logical term in, which identification of the contents take place, data base of the products have been created and, then any kind of sorting take place just to arrange the products and removal of unwanted items. Classification of the products is necessary, which is called Red Tagging. It is important just to identify factors, right from whether it is needed, existing amount obligatory amount, occurrence of necessity, and so on.
2. **Seiton / Systemize**- This step in 5S process consists of removal of unwanted items permanently and one more task that to be take place is decision that means you have to decide that what is required to be in what place. Place the items in such manner that you could retrieve them within 30 seconds of requirement.
3. **Seiso / Brush away/ Sweep**- Examine all the items on the daily basis. The process is not that much time consuming, but essential to clean up your workplace and most required in 5S. The conscientiousness to keep the office clean should be circulated between everyone in the group.
4. **Seiketsu / Standardize**- This important step of 5S involves the visual control, which is important to keep your organization well- organized and clean. It is a complete evaluation to improve the working conditions.
5. **Shitsuke / Self Control**- This step is quite essential, but critical because it involves all the discipline to ensure the 5S standards, it also takes charge of dedication and commitment.

Literature Review

- **Osada (1991)** refers to 5S as the five keys to a total quality environment. 5S is a system to reduce waste and optimize productivity and quality through maintaining an orderly workplace and using visual cues to achieve more consistent operational results. The practice of 5S aims to embed the values of organization, neatness, cleaning, standardization and discipline into the workplace basically in its existing configuration, and it is typically the first lean method implemented by firms. Osada (1991) views 5S as a strategy for organizational development, learning and change, whereas **Hirano (1995)** considers 5S to be an industrial formula that differentiates a company from its competitors.

The practice of 5S aims to embed the values of organization, neatness, cleaning, standardization and discipline into the workplace (Osada, 1991). In Japan the 5S practice was initiated in the manufacturing sector and then extended to other industries and services sector. The Toyota Production System provides a well-known example of 5S principles in practice, the early versions were based on 3-S this, became 4-S (Ohno, 1988).

- **Kobayashi et al. (2008)** make a distinction between 5S as a philosophy or way and 5S as a technique or tool by comparing the frameworks provided by Osada (1991) and Hirano (1995) respectively.
- **Darren Dolcemascolo** is an internationally recognized lec-

turer, author, and consultant. As Sr. Partner and co-founder of EMS Consulting Group, he specializes in productivity and quality improvement through lean manufacturing. Mr. Dolcemascolo has written the book *improving the Extended Value Stream: Lean for the Entire Supply Chain*, published by Productivity Press in 2006. He has also been published in several manufacturing publications and has spoken at such venues as the Lean Management Solutions Conference, Outsourcing World Summit, Biophex, APICS, and ASQ. He has a BS in Industrial Engineering from Columbia University and an MBA with Graduate Honors from San Diego State University.

- **Skaggs, 2010**, Based on five Japanese words that begin with S, the 5S focuses on effective work place organization and standardized work procedures. 5S classifies the work environment, reduces waste and non-value activity while improving quality, efficiency, and safety. These processes can increase morale, create positive impressions on customers, and increase efficiency and organization. 5S makes employees feel better about their work environment. This improvement leads to less waste, better quality and reduced lead times. Any of these benefits will make a company more profitable and competitive in the market place
- **Dina Dadian** (July 11th, 2012), Manufacturing companies are all familiar with the 5S methodology to organize the workspace for efficiency and effectiveness. **5S** is the name of a workplace organization method that uses a list of five Japanese words: *seiri, seiton, seiso, seiketsu,* and *shitsuke.* Amazingly, transliterated or translated into English, they all start with the letter S: *sort*, *set*, *shine*, *standardize*, *sustain*. (Credit goes to *Hiroyuki Hirano* and his overall approach to production systems).The obvious benefit of 5S methodology is **improved productivity**. This methodology can be applied to any workplace – and for our purpose we can discuss it to **improve your Computer Network environment**. Organizing the hardware and software used in your environment, identifying and running the items used, maintaining the equipment, and sustaining the new order through standardization, which builds understanding among employees of how they should best utilize the computer network – including hardware, software and business applications in the cloud – to be most productive at work.

Background of the study

Prem Group of companies is engaged in manufacturing 100% cotton knitted garments since 1984. Prem Group is composed of companies specialized in cotton churning and spinning, knitting, dyeing, cutting and stitching, embroidery and printing. It is the only major supplier to the European leading brand Switcher catering to requirements of approximately 65 % of supplies with company entire production capacity. Having felt the need of international markets in the areas of growing concerns and respond of quality, environment and the social accountability.

In general, the 5S approach includes the controls the work floor conditions rather than the worker's behavior. It is relatively inexpensive for the company to implement. It makes the worker's job easier and safer. It promotes daily activity for continuous improvement. It fosters efficiency and productivity while improving work flow. It encourages a proactive approach that prevents problems and waste before they occur. It provides a practical method for dealing with the real problems that workers face every day.

The aim of the study is to let people realize about the importance of good housekeeping, especially in manufacturing plant, but they do not realize that they too play an important part in keeping their houses/workplaces clean. More importantly, they do not know how much they can gain themselves by just practicing good housekeeping. In manufacturing industry, a clean, well-ordered and attractive work environment sets can help encourages tidy work habits in employees. It helps reduce fatigue and promotes good worker-management relations. It also lifts to morale, which is reflected in the quality of production and overall efficiency. Good housekeeping is a main factor in preventing accidents, majority of all work accidents are caused during the handling and misplacing of goods or materials.

Methodology

This study provides an outline about the Effectiveness of 5S implementation in PGC Textile Corporation, by measuring the awareness and practices of 5S followed internally among employees can able to understand the level of improvement in productivity, quality and environmental performance. The data collection was done based on primary and secondary sources available during the study. Survey and Observation method was used as a primary source and company's productivity record was a secondary source. The survey consists of closed-ended questions which can be conducted through a simple random sampling method. Textile companies were first contacted by phone, then by a follow up face-to-face meeting at their concern. These interviews and plant visits helped to identify some of the best practices in 5S, the overall population of a company was 1500 employees and sample size of 10% of population (150 respondents) were selected for the study.

Results and Analysis

Housekeeping

- By using percentage analysis, the inference of 150 respondents shows that C***leaning and Checking schedule,*** 62.6 % of respondents were strongly agree about schedule followed in the company on daily, weekly and monthly basis, 31.3 % of respondents were agree about schedule followed in their concern.
- ***5S practice as a personal habit***-69.3 % of respondents were follow their standardized work procedure in company and day to day life, 20.7 % of respondents were follow their standardized work procedure in company alone, 8.4% of respondents were follow their standardized work procedure in personal work and 1.6% of respondents were difficult to follow some procedure while doing personal and official work.
- ***Workplace boundaries –*** 84% of respondents were strongly agree about displaying of workplace boundaries in all department, 12% of respondents were agree about a displaying of workplace boundaries.
- ***Components identification and labeling*** - 79% of respondents were strongly agree about the clear identification and labeling of components used in various departments, 10% of respondents were disagree about the identification and labeling of components in their departments.
- ***Storing of unused tools and equipments-*** 72.2% of respondents were agree that the company stored their unused tools and equipments in proper place, 14% of respondents were disagree about the storage of unused tools and equipments in their respective department of the company.

Health and Safety standards

- By using percentage analysis, the inference of 150 respondent's shows that 71.4 % of respondents say that faulty operations have been fully reduced in the work environment, 22% of respondents say that faulty operations have been partially reduced in the work environment.
- ***Maintenance and usage of Safety equipments*** - 85.3% of respondents were highly satisfied with the maintenance and handling of safety equipments, 8% of respondents were satisfied.
- ***Safety postures and labels –*** 77% of respondents were highly satisfied about the display of safety postures and labels at required places, 16% of respondents were satisfied regarding the same.
- ***Work instruction-*** 81.3% of respondents were highly satisfied with updated work instruction provided by company for their required work, 13 % of respondents were neither satisfied nor dissatisfied.

Productivity

- ***Raw materials and WIP –*** 83.3% of respondents were satisfied about storing of raw materials and work in progress at the respective place on needed quantity, 9% of respondents were neither agree nor disagree about the storage of materials for process.

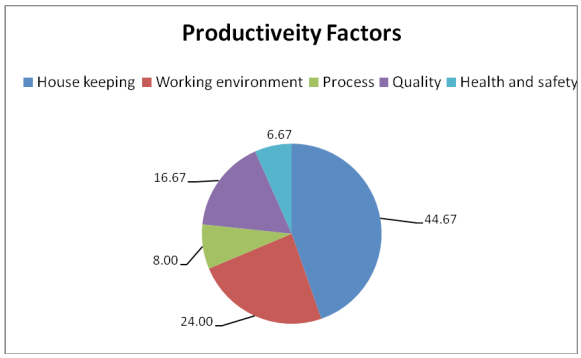
- ***Proper placing and ordering of materials*** **-** 73.3% of respondents can always place the things properly in respective order, 18 % of respondents can sometimes place the things in order.
- ***Retrieval of right things from right place***- 86 % of respondents were always able to retrieve their required things, 10% of respondents were sometimes able to retrieve their required things in workplace.
- ***Awareness about product design***- 92% of respondents were aware about the product design they produce and displayed in machine board.
- ***Quantity of production*** **–** 76% of respondents were aware about the quantity of production produced in their concern production line, 18% of respondents were unknown about the quantity what they are producing.

Quality improvement

- ***Quality audit procedure*** **–** 82.6% of respondents were highly satisfied about the quality audit procedure followed team in their department, 12% of respondents were satisfied about the quality audit procedure.
- ***Quality Ratio*** **–** 71.6% of respondents perceived that PGC products were highly quality oriented in the market, 16.3% of respondents perceived that PGC products were low quality oriented.
- ***PGC's policy*** **–** 54% of respondents told that company's policy focus towards quality based products, 26.3% of respondents told that company's policy focus towards quality, quantity and variety based products.
- ***Quality improvement*** **-** 43.3% of respondents felt that quality improvement can be achieve through environmental adoption, 24.6% of respondents felt that quality improvement can be achieve through proper knowledge and training about 5'S, 16.3 % of respondents felt that quality improvement can be achieve through guidance from management, inter and intra departments activities.
- ***Quality audit*** – 86% of respondents were satisfied about the quality audit activities conducted for various process in the company.

Productivity factors improved because of 5S implementation

Productivity factors	No. of Respondent	Percentage
House keeping	67	44.67
Working environment	36	24.00
Process	12	8.00
Quality	25	16.67
Health and safety	10	6.67
Total	150	100.00



From the survey, nearly 44.67% of respondent told that housekeeping has improved after implementing and maintaining 5S effectively, 24% of respondent felt working environment has improved, 16.67% of respondent felt that quality of product and work process has improved. 8% of respondent told that process has improved and 6.67% of respondent felt that health and safety of work place has improved.

Conclusion

5S methodology needs to become an established practice in most of the industries with active support from the top management and employees. Understanding 5S and building a culture helps to develop a management strategy based on quality standards. Taking 5S to higher level is only possible when the benefits of 5S can be fully valued and this can only be done by involving the entire department. Any problems that may occur regarding the sustaining of 5S should be addressed through proper training and participation. Therefore, continuous assessment in the company is believed as one of the key drivers to changing the culture of the organization. The outcome of the study at PGC Textile Corporation demonstrates clearly that the 5S practice is seen as an effective technique that can improve housekeeping, environmental performance, health and safety standards, and quality improvement in an integrated holistic way. Thus, the full benefits of the 5S cannot be experienced in the manufacturing sector until all the obstacles associated with implementation of the technique are recognized, fully understood and addressed.

REFERENCE

• Oliver.N. et al (1996), :lean production practices international comparisons in the auto component industry" British journal of management, vol.7 special issue, pp. 529-44 | • Shah.R and Ward, P.T., 2007 "defining of developing measure of lean production" Journal of operation management25, pp 785-805. | • Karlsson, C. and Ahlstrom, p., 1996. "Assessing changes towards lean production", International Journal of Operation & Production management 16, pp. 24-41 | • Kobayashi, K., Fisher, R., & Gapp, R. (2008). Busyness improvement strategy or useful tool? Analysis of the application of the 5S concept in Japan, the UK and the US. Total Quality Management, 19 (3), 245-262. | • S.K. Ho, TQM an Integrated Approaching – Implementing Total Quality through Japanese 5S and ISO 9000, Kogan Page, London, 1996. | • Pheng, L.S., 2001. Towards TQM-integrating Japanese 5-S principles with ISO 9001:2000 requirements.TQM Mag., 13: 334-341. DOI:10.1108/EUM0000000005859 | • Sui-Pheng, L. and S.D. Khoo, 2001. Team performance management: Enhancement through Japanese 5-S principles. Team Perform. Manage., 17: 105-111. DOI: 10.1108/13527590110411000 | • Warwood, S.J. and G. Knowles, 2004. An investigation, into Japanese 5-S practice in UK industry. TQM Mag., 16: 374-353. DOI: 10.1108/09544780410551287 |