Eastern Michigan University
DigitalCommons@EMU

Master's Theses and Doctoral Dissertations

Master's Theses, and Doctoral Dissertations, and Graduate Capstone Projects

9-12-2013

Towards successful implementation of 5Ss in a U.S. manufacturing company with Indian sub-continent workers

Syed Shahzad Naqvi

Follow this and additional works at: http://commons.emich.edu/theses

🔘 Part of the Management Information Systems Commons

Towards Successful Implementation of 5Ss in a U.S. Manufacturing Company with Indian Sub-

Continent Workers

by

Syed Shahzad Naqvi

Dissertation

Submitted to the College of Technology

Eastern Michigan University

in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Technology

Concentration in Engineering Management

Dissertation Committee:

Daniel Fields, Ph.D., Chair

John Dugger, Ph.D.

Konnie Kustron, J.D.

Nesa Wu, Ph.D.

Sept 12, 2013

Ypsilanti, Michigan

Abstract

XYZ is a manufacturing organization located in Michigan, in the Eastern North Central U.S., and it has a diverse workforce consisting of immigrants from Asia, Europe, and South America. The majority of the workers are immigrants from the Indian Sub-Continent. XYZ has been in the process of implementing 5Ss; however, it has been unable to sustain 5S standards. This study was conducted to identify the role of the Indian Sub-Continent workers' culture and religion on 5S implementation and to suggest how this company can work with this group in successfully implementing the 5Ss.

The researcher is employed in this organization and is well acquainted with the employees. The research design chosen for this research is ethnography. The researcher spent six months interviewing and observing 33 employees of the XYZ organization, acting as researcher and participant observer, while immersing himself in their lives. This helped him observe their behavioral patterns, understand their worldview, and gain insight into their personal opinions. The theme that emerged from this research is that *Desi* (people from the Indian Sub-Continent) trust each other and can work effectively in teams. The *Desi* workers, as a group, have similar values such as respecting elders and helping others; however, they also demonstrated some behavioral differences. The Indian Sub-Continent workers are submissive, strictly following the orders of their supervisor, and many times this results in their failure to complete the task according to 5S standards. Specifically, the workers always have one task waiting ahead of them, and the supervisor wants them to quickly complete one task and go on to the next one.

The study shows that the subjects were committed to giving their best effort and enjoyed working in teams and helping their colleagues. It was concluded that they are hardworking immigrant workers from the Indian Sub-Continent, who need support and guidance from management to ensure proper implementation of the 5Ss. It is recommended that 5S training be imparted to the management, supervisors, and workers and a change management team be formed which can help to bring the necessary change.

Table of Contents

List of Tables

Acknowledgements

Many people helped and supported me in different ways to complete my research. I would like to thank Dr. Fields, the chairperson of my dissertation committee, for his excellent guidance, patience with me, and strong support for my research. I would also like to thank Dr. Dugger and Dr. Kustron for providing me with valuable suggestions and putting a lot of effort into improving my dissertation study. I also like to thank Dr. Wu who, as a member of my dissertation committee outside of my department, has guided me in my dissertation with her expertise in 5S implementation. I am grateful to Dr. Polakow, an expert in qualitative research, for providing me with the necessary information to complete this study. Finally, I would like to thank my wife and two sons for bearing with me during this demanding research.

Chapter 1: Introduction and Background

It has been found by Mora (1999) that "only 10 percent or less of companies succeed at implementing TPM (Total Productive Maintenance) and other lean manufacturing practices" (as cited in Bhasin & Burcher, 2006, p. 56). It is true that the number of tools, techniques, and technologies available to improve operational performance is growing fast. However, at the same time, despite a few successes, most efforts to use them fail to produce significant results (Bhasin & Burcher, 2006). Success comes by following the lean principles, such as customer values, the management of the value stream, the use of pull mechanisms, and the reduction to zero of all forms of waste in the production system (Hines, et al., 2004).

This research attempts to identify ethnic factors associated with successful implementation of the 5Ss. The 5Ss are elements of the lean production system. It is an acronym for five Japanese words "seiri, seiton, seiso, seiketsu and shitsuke," which mean sort, straighten, shine, standardize, and sustain respectively. The 5Ss are the foundation of lean manufacturing and are also known as the housekeeping unit of lean. The concept of 5Ss was developed by Osada in the early 1980s (Warwood and Knowles, 2004).

Dulhai (2008) has noted:

"Seiri or sorting is the elimination of everything that is not useful in the workplace like residues, blanks, unused tools and equipment, scraps and superseded documents. Seiton or straighten is to organize, store, and label useful objects that were kept after seiri so that they can be easily found and manipulated when required. Seiso or shining is insuring the cleanness of the entire production area. While cleaning their equipment, workers often discover defects that specialized maintenance teams missed. Seiketsu or standardize is establishing a series of clear rules for the

maintenance of a perfect hygiene and of an agreeable environment at the workplace.

Shitsuke or sustaining is the close following of work procedures, continuous learning

and self-discipline." (pp. 116-117)

Hough (2008) stated that sustaining "involves changing habits and is often the most

difficult aspect of 5S implementation. Changing entrenched behaviors can be difficult, and

the tendency is often to return to the status quo and comfort zone of the old way of doing

things" (p. 45).

Statement of the Problem

There is a lack of understanding as to how ethnicity and subsequent orientation to the

collective goal of workers from the Indian Sub-Continent affect the successful

implementation of the 5S lean system.

Nature and Significance of the Problem

The failure rate of lean implementation has been significant in the manufacturing

industry as a whole (Bhasin & Burcher, 2006). Some main issues have been workforce

resistance as well as management's role during the implementation process. In subsequent

sections, 5S lean implementation will be discussed in detail including studies related to

worker ethnicity, worker resistance in the failed implementation of lean production, and

management's role in lean implementation.

The 5S system is a lean system used for organizing and managing manufacturing

operations so that they require less human effort, space, capital, and time to make products

with fewer defects. When 5Ss are properly functioning, they create a visual factory that

allows for quick determination of workplace status (Chapman, 2005). "Implementation of

5Ss leads to benefits such as less searching, decreased walking and motion, reduced

downtime, fewer safety hazards and accidents, improved flow, fewer mistakes, and better utilization of space" (Chapman, 2005, p. 30). All these benefits result in greater productivity, better quality, less cost, workplace safety, and high morale. 5Ss lays the foundation for the company's overall lean production system, and lack of a robust 5S system will make other lean tools ineffective (Chapman, 2005).

Implementing 5Ss alone may not bring the desired results, unless it is followed by educating the target work group on the corporate objective and soliciting its support and participation. The failure of most 5S programs can be attributed to lack of participation by management in the follow up process (Lewis, 2002).

It is essential to have commitment from both top management and others in the organization and to have a 5S champion to lead the implementation process (Ho, 1995). The implementation plan is a five step process: first, top management commitment is required; second, a promotional campaign must be run in the organization; third, records should be maintained; fourth, 5S training should be carried out; and finally evaluation must be completed. In other words, the 5S system in theory is a set of straightforward steps which, if followed, will lead to continual improvement. The implementation of the 5Ss is influenced by human factors and resource limitations that can interfere with its effectiveness (Warwood and Knowles, 2004).

According to Osada (1991), once 5Ss become a way of doing business in an organization, the approach to operations will be different due to the behavioral changes required by the 5Ss. As all members within an organization fully understand and implement 5Ss, the organizational readiness towards best practice becomes more realistic. Outcomes of a successful 5S practice are increased morale and organizational resilience. This behavioral

change is an essential requirement in the success of a 5S implementation (as cited in Gapp et al., 2008).

Researchers are now acknowledging the importance of ethnic diversity in organizations. They are trying to determine how to manage workers in companies and how to react to new challenges and opportunities introduced by an increasingly diverse culture (White, 1999). It is well understood that people of different ethnic backgrounds possess different attitudes, values, and norms. With the increase in cultural diversity in both public and private sectors, attention is being drawn to the differences between various ethnic groups in their attitudes and their performance in the workplace. An effort was made by Rubaii Barrett and Beck (1993) to examine the similarities and differences in work climate perception and levels of job satisfaction among Anglo-American and Mexican-American government employees. The findings of the authors showed that the Mexican-American employees report higher levels of satisfaction with personnel procedures than do Anglo-American employees. Cox, Lobel, and McLeod (1991) believe that often the differences in cultural norms and values among ethnic groups reveal themselves in different work-related behaviors. Research on cultural differences has highlighted the contrast between individualism and collectivism. In comparison to individualist cultures, collectivist cultures emphasize the needs of the group, social norms, shared beliefs, and cooperation with group members (Triandis, 1989). According to Triandis, McCusker, and Hui (1990), research indicates individualism-collectivism is an important aspect of cultural difference between nations where various ethnic groups of the United States have historical links. Hsu (1981) is of the opinion that Asians, Hispanics, and African Americans have roots in nations with

4

collectivist traditions; whereas Hofstede (1980) believes that Anglos have roots in the European tradition of individualism (as cited in White, 1999).

Objective of Research

The main objective of this research is to gain insights on how effectively the Indian Sub-Continent workers can cope with the implementation of 5S lean system.

This will give an insight into the thinking pattern of Indian Subcontinent workers on how well they can react and adjust themselves in the 5S environment. This will also provide an opportunity to the researcher to judge the effectiveness of the policies and practices involved in the 5S system.

Research Questions

Does the culture and religion of a worker influence the successful implementation and maintenance of the 5S lean tool used in a manufacturing setting? What problems do Indian Subcontinent workers encounter in adapting to a 5S lean environment?

Delimitations and Limitations

A delimitation of this study is it will not consider the effects of the collective bargaining environment. Another delimitation is that the research will be conducted only in the metropolitan Detroit, Michigan area. A limitation in this study is the lack of English knowledge of some participants, which may influence their responses to the interview questions. A final delimitation is this research will be limited to one organization.

Assumptions

The first assumption is that workers are willing to participate in the research and respond to the interview questions. The second assumption is that workers are providing honest and truthful responses to the questions they answer.

Definitions

Some non-English terms used in this dissertation are defined below.

Desi: Means person belonging to the Indian Sub-Continent.

Asalaam-a-Laikum: Is a common greeting among Muslims meaning "peace be with you."

Eid-al-Adha: Is a major festival among Muslims in which they sacrifice an animal. Each year Muslims celebrate Eid-al-Adha to commemorate the willingness of Prophet Abraham to follow God's command to sacrifice his son Ishmael.

Eid-al-Fitr: Is the first day of the Islamic month of Shawaal. It marks the end of Ramadan, the month of fasting and prayer.

Diwali: Is the most important festival among Hindus, also known as the festival of lights.

Biraderi: Means brotherhood, consisting of extended clan, who supports each other.

Halal: Foods which are allowed to be eaten by Muslims.

Shalwar kameez and dupatta: A dress worn by Punjabi women in India and Pakistan.

Majalis: Is a religious gathering in which a sermon is given by a Shia Islamic scholar on Islamic topics and the tragic events related to the battle of Karbala between Imam Hussain, who was with his companions, and forces of Yazid.

Imambargah: Is a place of worship for Shia Muslims. This usually includes a mosque and a hall for delivering a sermon by a Shia Islamic scholar.

Aap: Is an Urdu language word meaning "you," used to address a person with respect.

Bhai: Is an Urdu language word meaning brother.

Chapter 2: Review of the Literature

In Chapter 1, the importance of lean production in the manufacturing industry was briefly discussed. In this literature review, lean production is discussed in more detail, as well as the significance of 5Ss in the process of successful lean implementation. Some 5S case studies are presented to understand the difficulties faced during implementation and successful sustainment. To understand workers' behavior better and to manage them more effectively, topics like workers resistance, collectivism vs. individualism, and the effect of religion and culture are discussed. The final discussion is on the research design ethnography, which is utilized in this study.

Lean Production

Lean production is the most popular term to present the current era of manufacturing (Crute et al., 2003). Lean means eliminating non-value added waste throughout an organization, which will bring higher productivity and improved profits. These are achieved through improvement in the processes and methods of the organization (Mascitelli, 2004). Lean production means to do more with less and give customers what they want. Lean was developed by Toyota and is also known as the Toyota Production System. It was designed essentially for manufacturing; however, lean principles can be applied in other sectors as well (Dennis, 2007).

In the 1980s, the Toyota Motor Company was eroding the market share of U.S. based auto companies. It was in 1990, that the book *The Machine That Changed the World* written by Womack, Jones, and Ross awakened U.S. manufacturers. Researchers who studied the Toyota Production System (TPS) in the 1980s termed it "lean manufacturing," because of its ability to attain more in terms of final outcomes, while utilizing fewer resources. Lean

manufacturing was recognized as an innovative model that removed waste in any form. It continuously strived to maintain harmony in the flow of materials and information, while trying to achieve perfection (Mohanty et al., 2006). The lean concept has been extended. The term lean enterprise now includes all the elements in the organization, the customer and supply chain (Papadopoulou & Ozbayrak, 2005). There are different tools available to successfully implement lean manufacturing, like takt time, line balancing, one piece flow, self-directed teams, U-shaped cells, and value stream mapping among others (Motwani, 2003).

Ohno first conceived the idea of a lean system. It has been extended and improved by different practitioners, like Hiroyuki Hirano who was responsible for the development of the 5S system and Seiichi Nakajima who first introduced total productive maintenance (TPM). The lean system's foundation is stability and standardization and its walls are just-in-time delivery of parts. Jidoka is automation with a human mind. The goal of the system is customer focus, which means to deliver the highest quality at the lowest cost and in the shortest possible time to the customer. Finally, the heart of the system is involvement, which is a flexible and motivated team that is continually seeking a better way (Dennis, 2007).

In TPS the social context is very important, as Toyota tries to build an atmosphere of trust and common purpose. An effort is made to make important decisions through consensus, while results and other essential information are communicated to the employees. At Toyota they believe that every human being desires excellence, has a mature sense of realism, and yearn for a positive response to be respected and trusted. The socialization process is further strengthened by participative decision making and team bonding through the formation of small production teams. The leadership at Toyota tries to impress upon the

workers that the company does not belong to just management, but it belongs to everyone

who works for Toyota Motor Company (Mohanty et al., 2006). Ohno (1988) confirms that

the TPS did not take place overnight, but it was developed through innovations spanning

over 30 years (Bhasin & Burcher, 2006).

Waste in any form is not allowed in the lean system, because the customer is not

willing to pay for wait time, rework, excess inventory, or any other form of *muda*. At the

same time, stability in the lean system is very important, and that starts with visual

management and the 5S system. 5Ss support standardized work and TPM, which bring

stability to method and machine, respectively. Just-in-time (JIT) production is also supported

by 5Ss because providing point of use information makes decision making easier (Dennis,

2007).

The 5S System

The 5S system was first developed by just-in-time production expert Hiroyuki

Hirano. The 5Ss represent a simple good housekeeping approach for improving the work

environment, under the principles of lean manufacturing system. The main focus of the 5S

system is to develop a visual workplace and utilize it to remove inefficiencies from

manufacturing process. Significant money is wasted on moving items unnecessarily and in

finding lost items. 5Ss work as a first step towards Total Quality Management (TQM). The

manufacturer can ensure a competitive edge with the implementation of the 5S system (Shil,

2009). "This framework also improves safety in the workplace, and according to Hirano

without the organization and discipline provided by implementing 5Ss other lean tools and

methods will probably fail" (Shil, 2009, p. 35). An important principle of the 5Ss is that

untidy, cluttered work areas are not productive. In a cluttered workplace junk gets into

everyone's way and dirt compromises quality. People are happier and work diligently in a clean, tidy, and safe work environment (Henderson, 2004).

The 5Ss stand for the Japanese words seiri, seiton, seiso, seiketsu and shitsuke. Their English translation used in the western world is sort, straighten, shine, standardize, and sustain. Sometimes a 6th S is also used that stands for safety (Shil, 2009). The details of each S are now discussed, to provide a better understanding of the 5S system implementation.

Seiri (Sorting). The seiri element tries to eliminate manufacturing wastes, by producing the right amount and combination of parts at the right place and at the right time. A red tagging activity is initiated in the organization for all unwanted and unnecessary parts. The red tags that contain some basic information about the item ask three questions. (a) Is the item needed? (b) If needed, is it needed in this quantity? (c) If needed, should it be located here? The red tag initiator along with the audit team will decide exactly what action should be taken for a particular item (Shil, 2009). In some circumstances the person responsible for the item is also consulted as to the reason why this item should remain in the area. If there is doubt about whether the item is required at that time, the red tag remains on the item; otherwise, if it is required within the next month, the tag is removed. Anything that is not required should be disposed of. Remaining red tagged items should be moved from the area to a temporary holding area, until it is proven they are no longer required, at which time they can be disposed of or moved to a long term storage area (Eaton & Carpenter, 2000). The main element of seiri is to take a critical look at the area, which can involve cross-functional teams or just looking at each other's areas for items not required (Henderson, 2004). The practical approach that should be followed is to remove any item that would not be used within a certain number of days. This can be accomplished through a "Team Blitz System."

In the "Team Blitz System," all the employees work as a team and try to identify excess supplies, obsolete forms and materials, broken or excess tools, broken or unused gauges, outdated work instructions, defective parts, excess furniture, obsolete equipment, unused cleaning materials, trash etc. Some people find it hard to part with items they think have a value, even though it may not be of any value to the area that is submitted to the 5S process (Wu et al., 2011).

Seiton (Systemizing). After all unnecessary items have been removed through the implementation of the first element of 5Ss, the remaining items must be arranged efficiently so that it is easy to access them or return them in their proper location. An effort is made to eliminate human motion waste. This is essentially the removal of time, energy, and effort from a process by intelligently locating parts and equipment, so that all movement becomes necessary to complete a given operation (Shil, 2009). The locations for items must be defined, which can be done through shadow boards, color-coding, or floor markings to indicate what is supposed to be where. This is the principle of visual management, a place for everything, and everything in its place, so that minimum effort is wasted in locating and returning an item to its home location (Eaton & Carpenter, 2000). All the users of these items need to be trained on the storage system in use, the labeling system, and the procedures for storing and selecting items for use (Wu et al., 2011).

Seiso (Shining). It is very important for an organization to make a good impression upon external visitors, which can result in new orders for their products. Seiso consists of regularly cleaning the workplace and ensuring that all equipment remains clean. The cleaning exercise should be made into a 5-minute daily routine, and management should get involved in encouraging this activity, so that any resistance to this effort is eliminated. If properly

done, this helps to create a more comfortable and safe working environment (Shil, 2009). A daily cleaning of oil in the walkways will reinforce the need to repair the source of a leak, which will make the work area less hazardous (Becker, 2001). Also the machines, equipment, and tools must be checked for quality performance. If necessary, maintenance must be performed (Wu et al., 2011).

Seiketsu (Standardizing). This step focuses on defining the best process to sustain the improvements and to continue to bring further improvements. Seiketsu develops procedures and processes so that mistakes are more difficult to make and problems become obvious once they occur. To reinforce the first three steps a weekly time slot could be allocated to practice the first three steps and to recap the procedures (Shil, 2009). Variability in the processes can be controlled by eliminating non-standard resources. This step is considered the most effective step in improving a proactive safety program (Becker, 2001). Standards can be visualized by providing visual controls as examples indicating what is acceptable and what is not (Wu et al., 2011).

Shitsuke (Sustaining). This step involves self-discipline and developing favorable habits that promote and sustain the previous four steps of the 5S system. The company must create the right environment to encourage the desired behaviors, which will lead to continuous improvement. It is helpful to the program and brings enthusiasm among the workforce if the results achieved are posted on bulletin boards (Becker, 2001). Shitsuke keeps the first four elements secure and improves the productivity continuously. The best way to achieve this objective is through self-assessment and 5S audit scores, with the results reviewed by a focus team.

This step can consist of a short 5-minute, twice-a-week meeting to recall the concepts of the 5Ss and a weekly three hour housekeeping of selected areas with participation of plant manager, supervisors, area workers, and some invited workers from other areas. Auditing teams should be formed for each area and each area must be initially audited on a weekly basis. The auditing team can consist of a manager, area supervisor, and one area worker. It should be kept in mind that these audits can become a waste of time, unless supervisors and managers have not been able to change behaviors by changing the way in which employees think. It is useful if the auditing process introduces a recognition program. The participants who perform better can be recognized in a special event and the General Manager may award them with a prize (Wu et al., 2011). Leadership is crucial in the success of this step of the 5S system and, unless top management makes 5Ss a part of the organizational culture, the system will deteriorate in effectiveness. Top management must communicate the benefits of 5Ss and encourage workers to use their 5S training for the success of the organization (Shil, 2009).

5S Case Studies

Merritt Tool (Texas, USA). Merritt Tool, whose main customer is The Boeing Company, urged the Company to adopt lean manufacturing. The machine tools used at Merritt Tool are multi axis CNC, which are suitable for aerospace work pieces in aluminum and titanium. The visual aspect of the 5Ss made it easy for anyone to tell what would take place next in the workstation. In 5S methodology, the visual aspect is one of the key characteristics. Therefore, looking, seeing, and making things visible are part of almost every activity related to 5Ss (Albert, 2004).

Mr. Simmons was the person responsible for the implementation of the 5Ss. Because he thought that it was important to understand the principles and concepts of the 5Ss, he spent time and resources on applying them to the workplace. He believes that the hard work and dedication of workers were the main reasons for the success Merritt Tool had with the 5Ss. His own role was to guide the workforce and to conduct workshops at specific locations, which typically lasted 2 to 5 days. One of the goals of this training was to reduce the setup time by 50%, which was rarely missed (Albert, 2004).

Many companies, such as Merritt Tool, incorporate shadow boards in the process. Shadow boards are very useful visual clues because they immediately make the workers notice an empty tool location. All items are labeled to indicate important information about size, specifications, and details of calibration or inspection. The 5Ss can be utilized in the office and anywhere on the shop floor. Cleanliness develops a more comfortable and safe workplace. This helps in improving visibility, reducing the search time, simplifying the maintenance process, and leaving a good impression on the visitors (Albert, 2004).

When implementing the 5Ss, it is important to develop standards and, afterwards, to sustain the first 4 Ss. Standardize means documenting the procedures for shining, sweeping, and sanitizing the work place. A checklist is maintained that shows who is responsible, what steps are required to maintain acceptable conditions, and what procedures must be followed to ensure full compliance. The documents can include digital photos of the desired conditions. The last S is the most critical for the 5Ss' success in an organization. It is an effort to maintain newly developed habits and not go back to the old ways of functioning. Moreover, continuous improvement in the process is kept alive by trying to determine and

implement ways to sort more effectively, sweep more thoroughly, and keeping standards current (Albert, 2004).

Those who are thinking of implementing lean must understand that lean is to be regarded as more than a set of mechanistic hard tools and techniques. Indeed, the human dimensions of motivation, empowerment, and respect for people are also very important. They all are very important to the long-term sustainability of any lean program, regardless of the industry sector (Hines et al., 2004).

To achieve success in 5Ss, both operators and managers must play their roles effectively. The operators at the end of the shift review their checklist and ensure that everything is in order. If this is done regularly, it makes life easier for the operator. Sharing ideas is important, as well as reaching a consensus on the changes that need to be accomplished. Managers also must sweep their shop so they can monitor compliance with the 5Ss in the whole workplace. Mr. Simmons thought his role was to coach, mentor, and motivate the workforce by following and doing the same procedures what the workers were expected to do. Although Mr. Simmons believed that an incentive program can bolster success of the 5Ss, he also deemed it must not be introduced until 5Ss have been fully established in the organization (Albert, 2004).

There is a clear link between 5Ss and lean, since at Merritt Tool standard operations are established for most of the demanding jobs. They were successful in creating reduced setup times and had created machining cells. They had reduced inventory levels and lead times on the longest running jobs at Merritt Tool. A binder contains the documentation that details how an operation is set up and completed (Albert, 2004).

Several U.K. organizations utilizing 5Ss were investigated utilizing semi-structured interviews which were carried out in 2002. A summary of the findings is given below.

Dunlop Equipment (Coventry, U.K.). Dunlop Equipment is a manufacturer of aviation gear for the aerospace industry. It has a variety of machining equipment like milling, grinding and lathing machines. Dunlop Equipment employs 180 people with an annual turnover of $40 million. Here, 5Ss was introduced with limited success; however, when re-introduced, it showed significant success. The implementation process was different in different work areas, with varying results. One of the biggest issues was to make the operators feel responsible for the success of 5Ss on the shop floor. The greatest benefit of 5Ss was an organized workplace with improved workflow. The notice boards and the painted walls and equipment indicated that 5Ss were being actively pursued. Fifty workers were trained in 5S procedures. Team leaders managed the 5S process on the floor (Warwood and Knowles, 2004).

GSM Primo graphic (Brecon, U.K.). GSM Primo graphic specializes in printing onto different forms: polycarbonates, plastics, and metals. This organization has a turnover of $ 9 million and employs 75 people. It has ISO 9000 and QSO 9000 implemented and has amongst its customers Rolls Royce, Jaguar, and Ford. Already three out of four production teams were given training in 5Ss and they were using 5S techniques in their daily jobs. The company realized a cost saving of $150k, accomplished through sorting, cleaning, proper space utilization, improving the work flow, reducing job times, and cutting down on raw material inventory. In the beginning employees were reluctant to accept this new system of 5Ss; however, soon the resistance went away as they witnessed its benefits in their daily work. The performance of 5Ss was analyzed through an audit conducted by the Process

Improvement Engineer. It was true now, 5Ss was seen as a useful catalyst which helped in sorting and keeping the work area clean and organized (Warwood & Knowles, 2004).

The Marshall Group (Cambridge, U.K.). The Marshall Group can be described as an example of how 5Ss can be managed successfully in a manufacturing organization. The Marshall Group existed for approximately 100 years, operating as a family business with annual sales of $300m. They have been running 5Ss for 18 months as part of a lean manufacturing initiative, and believed that a clear success of 5Ss was an organized and clean workplace. Team leaders took responsibility for auditing other teams. Most of the workforce completed 5S training. Different team leaders placed 5Ss as a different priority in their work schedules. The biggest problem for 5Ss was team boundaries, as the business often meant a cross fertilization of people skills. Each team had its own work station notice board for lean-based activities. The biggest cultural breakthrough for 5Ss was taking responsibility for tidying up one's work area (Warwood and Knowles, 2004).

Reasons for Failure of 5S Implementation

It has been observed that in many organizations 5Ss were introduced, but failed. After further investigation it was determined that they only introduced the first three Ss and the last two were not formalized. This meant that it was in fact a 3S implementation. If the last two Ss had been implemented, it would have helped change the operations from a hidden factory of waste with over production and defects in products to a visual factory where the environment was self-explanatory. In a visual workplace a non-standard situation is immediately noticeable, and workers can easily rectify it (Chapman, 2005).

Once the 5S program has been implemented, management should understand the following rule: if they see something out of place or something being done incorrectly and

17

they ignore it, then a new standard is set up (Lewis, 2002).

There is limited evidence in the literature to indicate that any specific tool or methodology is more inclined to failure. The reasons for failure are quite a few, and can be categorized as follows:

Lack of Resources. It is difficult for companies to take their staff away from their daily routine activities in order to let them participate in improvement projects. Also, usually there is not enough cash available to pay for consultants and training. However, since many organizations want to improve their performance, management must be willing to give up some resources so that they can initiate the improvement projects. Some organizations, which try to spend less on improvement projects, end up with failure and lowering of employee morale. This results in more resistance from the employees in future initiatives (Perry, 1995; Cooke & Dale, 1995, as cited in Trimble et al., 2013).

People and Cultural Issues. Bessant, Caffyn, Gilbert, Harding & Webb, (1994) believe that the cultural issues and a lack of commitment of employees are also factors that could hinder the progress of continuous improvement (as cited in Trimble et al., 2013).

Poor Management Commitment. Sometimes senior management supports the improvement project without understanding the resources required for its completion (Stelzer & Mellis, 1998, as cited in Trimble et al., 2013). Emiliani and Stec (2005) find that continuous improvement projects are mostly successful where there is a long term senior management commitment (as cited in Trimble et al., 2013).

Poor Communication. It is important for the success of any change initiative that the employees are made aware of the reasons for its implementation and how the program will

be implemented. If communications are poor, it raises speculation and most employees will associate change with job losses (Trimble et al., 2013).

Lack of Training. Pavnaskar et al. (2003) determined that lack of training result in misapplication of tools and methodologies during the early stages of the improvement program (as cited in Trimble et al., 2013).

Inhibitors. Some of the inhibitors for 5S implementation are: Some events are developed in isolation without a strategic link, the 5S vision and its guiding principles have not been developed, the 5S application is only to housekeeping and visual factory, and the purpose of 5S implementation has not been clarified (Barraza & Pujol, 2012).

One reason for organizations failing in 5S implementation is that the sustain step is a difficult goal to reach for workers who have previously developed habits that do not support 5Ss. Problems occur when tools and materials are not being kept in their dedicated space, cleaning tasks are not completed satisfactorily, and parts are scattered all over the production floor making it unsafe and, eventually, leading to a dirty working place, with rapidly decreasing worker morale (Veza et al., 2011). Ho, 1999 points out that employee participation is the main difference between Japanese and Western approach to 5S implementation. An important concept of 5Ss is worker participation, which is critical towards 5S's success (Eti et al., 2006 as cited in Mariones et al., 2010).

Leadership is crucial for practicing control management. An effective control management program requires a firm to control the processes. In order to do so, the firm needs to have standardization and needs to make certain that the most efficient worker does it in the best possible way (Zenzoui & Deghan, 2012).

Workplace Organization. When the workplace is safe, clean, and neatly arranged, it is organized. 5S program principles are utilized for the organization of the workplace. Sort removes the excess waste, which provides more space. With set in order everything has a designated place, must be kept in its place, and must be near the point of use. Everything that remains needs to be scrubbed and shined. Then standardization is required to maintain the previous 3Ss. The standardization procedures are set up for the 3Ss, which will prevent unnecessary items from accumulating and workers from falling back into unacceptable habits. The final S, sustain, is essential for the workplace to avoid future problems and reverting back to old habits. To avoid the 5S program falling apart, management needs to support this program, perform regular audits, and award workers for their efforts through a reward system. Implementing 5Ss is not easy and requires a thoughtful process, good leadership, and management capabilities (Wu et al., 2011).

The successful implementation of 5Ss benefits both the workers and the organization. The workers enjoy a more pleasant work environment and find their jobs more satisfying. The organization experiences better quality and improved maintenance. This results in cost reductions and improved profitability. The successful implementation of 5Ss requires the introduction of change management (Wu et al., 2011).

Change Management. An organization that decides to implement any improvement program based on lean principles must recognize that it is easy to contemplate changes to a factory layout or changes in a process or procedure; however, these changes will affect all those employees who work in that place or process. Therefore, change management must be planned at the very start of the lean program implementation, so that its chances of success are increased (Wu et al., 2011).

Change management is defined by APICS as a "business process that coordinates and monitors all changes to the business process and applications operated by the business as well as to their internal equipment, resources, operating systems, and procedures." Its main purpose is to "minimize the risk of problems that will affect the operating environment and service delivery to the users" (APICS, 2010, p. 22 as cited in Wu et al., 2011). Some of the obstacles that need to be overcome to successfully implement change are the legal environment of operations, financial and economic conditions, company policies and procedures, the organizational structure and culture, the IT environment, and people's resistance to and tolerance level for change (Wu et al., 2011).

Change in the organizations can be slowed down due to legal or institutional constraints in the environment in which they operate. If the organization has unionized labor, then the labor contract may have conditions that any change in the nature and scope of work needs to be negotiated with the union (Wu et al., 2011).

When the economy is good it is easy to promote ideas and justify budgets for change implementation. However, the operating environment's complexity may slow down the change and increases the need for financial resources required for the change. Since resources are limited, the financial implications of the change need to be considered and a cost-benefit analysis for all changes must be completed at the start of the implementation stage (Wu et al., 2011).

During tight times, it is necessary that organizations focus on simplification in order to stay competitive (de Camara, 2008 as cited in Wu et al., 2011). This results in a decrease in sales, operations, and income, and an increase in inventory for some companies. In these difficult times, many companies change their focus to survival and freeze all implementation

plans for change until better times arrive. However, slow times are the best times for change implementation, because during a recession operations are at their lowest point and resources can be allocated to change implementation without compromising production activities (Wu et al., 2011).

Policies and procedures are the rules of the organization's operations that should be communicated to the employees of the company to ensure that people understand their roles and that processes are carried out consistently. The absence of documented policies and procedures may impede the implementation of change. Documented policies and procedures reflect the current processes and can be used as a starting point for change (Wu et al., 2011).

Authority needs to be granted for successful implementation of change, since a hierarchical corporate structure may delay the change process and negatively impact the effectiveness of change management. In order to avoid delays in change implementation, organizations need to provide necessary authorities to the change management team and flatten the organization structure (Wu et al., 2011).

Another important factor is the cultural differences that also play a role in change management. In collective cultures, like the Japanese culture, workers are more submissive to the new ideas than those in individual cultures, such as the American culture, which hinders the process of change implementation. On the other hand, the drawback of high level of submissiveness is that change may not be challenged at the start of the change process and improvement opportunities may be missed (Wu et al., 2011).

One of the mistakes that manufacturing departments are making is planning the change and deploying lean without involving IT in the change process. This results in lean dip or stagnation of the continuous improvement process. The main function of IT is to

support the operations and generate statistical information for analysis. Some companies that practice kaizen philosophy do not give enough importance to their IT department during change management, due to the supporting nature of its function (Katz, 2007, p. 33 as cited in Wu et al., 2011).

Generally, people do not like the uncertainty that surrounds any change. The workers may resist any change, because they do not understand why the change is necessary or how it will impact their job. However, people do have a change tolerance, and it is important to understand that some workers will accept the change while others will resist it to the point of leaving the organization. Therefore, an effort must be made to minimize the loss of employees, because recruitment is very costly and that is not lean. So, the objective of management is to implement lean by achieving sustainable change, while retaining employees (Wu et al., 2011). People have tried to change others, but have failed badly in doing so. The only reliable way of changing people is by helping them to learn, so that they can change themselves. Learning is accomplished by training people, in all aspects of the job in the context of a lean, organized work place with standardized tools, methods, and procedures. This training is vital for successfully making the change, and sufficient resources and time should be provided to such training. Every time a change is made in an organization, there are two groups involved: the team implementing change and the workers impacted by this change (Grasley, 2007, p. 30, as cited in Wu et al., 2011). Top-down changes are considered to be easy and efficient; however, this is a misconception. Change management will fail unless most of the organization understands, appreciates, and commits themselves to the change process (Stanleigh, 2008, p. 36, as cited in Wu et al., 2011). For the changes to succeed they should be organic and grow from the ground up. Sustainable change

that develops from ground up is best accomplished through formation of groups of diverse membership (Wu et al., 2011).

Formation of the right type of team is very important for the success of the change. A cross functional team best serves this purpose, and should consist of managers from all the departments that will be affected by this change. This change implementation process should be supported both by the people who have the authority to make the change as well as the people who have knowledge of the operations in order, to ensure that the change improves the process. The floor workers are the people who best understand the process since they perform the tasks on a routine basis and can be helpful in identifying the weaknesses and non-value added activities of the present processes. It is important that the team ensures that changes are carried out throughout the organization. However, it is the workers who will have to actually implement the changes and make them part of their everyday activities. It is also important that the workers feel that they are part of the change, which will more likely make them accept the change. Employee job satisfaction is important and is directly linked to how much sense of control they have about their work and work environment. The involvement of workers in the change process will definitely contribute to their job empowerment and will make the change implementation successful (Wu et al., 2011).

Implementing Change Management. One of the most effective approaches to implement change is ADKAR, which was developed by Prosci. It consists of five elements, awareness, desire, knowledge, ability, and reinforcement. Each element is critical for the success of change. The people in the organization need to know the reason for the change, and the benefits it brings in order to be willing to accept the change. The team and the employees affected by change should possess the required skills and knowledge, as well as

practical ability, and the reinforcement of change must be done by the team (Sande, 2009, p. 29, as cited in Wu et al., 2011).

The leader's responsibility is to communicate the vision for the future, which should include steps required for making the change, and these steps should support organizational goals (Stanleigh, 2008, p. 36, as cited in Wu et al., 2011). The team has to figure out how to reach these goals, and the team leader has to ensure that the impact of the change has been determined, that the change is communicated to all employees, and that organizational alignment is improved (Grasley, 2007, p. 30, as cited in Wu et al., 2011). The leader should ensure that the team and employees are confident about the change. Once the team understands the vision state and embraces it, they will become more effective and committed to creating that vision, which is much better than what management could achieve with a top down change mandate. At this stage, the employees also feel empowered in their jobs (Wu et al., 2011).

The team has to ensure that key people in the change implementation process are freed from other responsibilities, so that they can focus on their new task. The team further needs to manage the budget and remove any obstacles which hinder the change process (Stanleigh, 2008, p. 37, as cited in Wu et al., 2011). A feedback system which provides information from the floor needs to be setup (Gotsil & Natchez, 2007, p. 26, as cited in Wu et al., 2011), analysis of the data performed, and corrective action taken (Wu et al., 2011).

The lack of change management skills in middle management is a barrier to change as mentioned in research by Price Waterhouse Coopers (Woodward, 2007, p. 65, as cited in Wu et al., 2011). It should be made clear that people can change things; however, they cannot change other people. To change other people they have to learn so that they can change

25

themselves. Training is what helps the learning process. On average U.S. companies spend 2 % of their payroll on training and education (Maylett & Vitasek, 2007, p. 58, as cited in Wu et al., 2011). The organizations which have been successful in the change management program spend between 9 and 17 % of their payroll for training and change management (Gotsill & Natchez, 2007, p. 27, as cited in Wu et al., 2011). In tight financial situations organizations find different ways of providing training to their employees, such as giving them access to online courses and providing them with self-study educational materials. Training is necessary and therefore organizations need to allocate necessary resources to accommodate change management (Wu et al., 2011). It is also necessary that recovery be an integral part of change management. If continuous change takes place without a break, it can prove to be more harmful than a period of intense change followed by a period of status quo (Wu et al., 2011).

5S Program Implementation Guidelines. Before implementing a 5S system, it is imperative that a company sets objectives, builds teams, and trains these teams. The main goals of the organization are that employees are maintaining all 5S standards with no direction from their supervisors, and that they themselves are active in developing ways to improve the workplace organization. Any lower level goal, like maintaining 5S standards under the direction of the supervisors, has led towards failure of the 5S implementation system. To achieve success, the following requirements must be attained: management leadership and support, change management, worker/management compromises, team building and training, auditing, financial resources, and creating and using lean metrics (Wu et al., 2011).

Workers must be introduced to the concept of lean, waste reduction, and the 5Ss. A

good auditing system with the objective of continuously improving the system is also required for the success of 5S implementation. This can be supported by developing good lean metrics. The workers will be initially reluctant in participating in the 5S process. This reluctance can be removed by providing them with 5S training and involvement of managers and supervisors which will make the workers understand the importance of the process and will make them committed to the implementation task. After the formation of teams and at the conclusion of training, implementation of each of the five phases of this program, as described in pages 11 through 14, has to be developed (Wu et al., 2011).

There are several drivers for 5S implementation: management needs to demonstrate strong commitment, middle management needs to show participative leadership style, teams must be formed for the application of 5Ss, employees must undergo intensive training, management must communicate and disseminate to employees how 5Ss are going to be implemented, and must develop a detailed plan of how to implement and evaluate the 5Ss (Barraza & Pujol, 2012).

Steve Lage, President of PDG Consultants, Inc. suggests that to achieve success in 5Ss it is better to start small, and keep the focus tight and confined to one manageable area. Go an inch wide and a mile deep. Raise the level of 5Ss so high that people can't help but notice. Develop and practice sustainment skills before you begin work in the next area. It does you no good to run rampant through the factory or office if you can't sustain. Use your success to set 5Ss expectations for each area of the business and move through the entire company one step at a time. Remember that the most challenging and important part of 5Ss is to change behavior (as cited in Wu et al., 2011).

Collectivism vs. Individualism

　　As mentioned in Chapter 1, the human element is the most important factor in the success of a 5S system implementation in any organization. This research focuses on this aspect of the 5Ss, particularly how different ethnic groups can come together and play an effective role in the success of a 5S system implementation. In his study, Triandis (1989) determined that the collectivist value orientation has been found to be manifested in a variety of ways. The strong role of family and the prevalence of personalism over achievement are two examples. The link between collectivism and cooperative behavior is very interesting. Diaz-Guerrero (1984) found that collectivists emphasize the value of cooperation, whereas individualists give importance to competition. Leung (1988) further found that to resolve conflicts collectivists prefer cooperative approaches like bargaining and mediation. Finally, Wagner and Moch (1986) determined that individualism /collectivism was related to job type; collectivists liked to perform jobs that required teamwork, whereas individualists performed more independent tasks. They also found that the collective rewards of work are less appealing for individualists than for collectivists because such rewards have to be shared rather than consumed (as cited in Cox et al., 1991).

　　The most important characteristics that distinguish individualism and collectivism are the relative emphases on horizontal and vertical social relationships (Triandis & Gelfand, 1998). Horizontal patterns assume that one is similar to others; whereas the vertical pattern comprises hierarchies, where one's self differs from others. Four distinct patterns are developed because of the manner in which these relative emphases combine with individualism and collectivism. These include horizontal individualism (HI), vertical individualism (VI), horizontal collectivism (HC), and vertical collectivism (VC). In HI,

people are self-reliant and want to be unique and different from groups; however, they do not want to become distinguished or seek high status. In VI, people want to become distinguished and have a status in society. They do this in individual competition with others. In HC, people consider themselves similar to others, strive for common goals, interdependence, and sociability, but do not submit easily to authority. Finally, in VC, people emphasize the integrity of the group, support their in-group in competition with other out-groups, sacrifice their personal goals for the in-group goals, and submit to authority (Triandis & Gelfand, 1998).

It should be understood that in most societies the four themes, HI, HC, VI and VC co-exist. Individuals select these themes at different times and different situations, although a modal pattern is selected most frequently (Triandis, 1996). Some have observed that collectivism is maximal when a society is low in complexity and tight, and that individualism is maximal when a society is complex and loose. Therefore, individualism is prevalent in societies where the standard of living is high and individuals can decide without consulting in-group members about how to use their resources. Collectivism is high in societies where the family decides how to utilize the resources (Triandis, 1996).

Based on Triandis' (1996) analysis, Oishi and colleagues are of the view that vertical individualists emphasize the values of power and achievement. On the other hand, the horizontal individualists stress the value of self-direction. Similarly, they predict that vertical collectivists emphasize the values of tradition and conformity, whereas the horizontal collectivists emphasize the value of benevolence and universalism, which means understanding, tolerance, appreciation, and welfare for all people (Gardner et al., 2009).

Several studies have shown that collectivists show a stronger attachment towards their organization and are willing to sacrifice personal goals to group goals, as compared to employees in individualistic cultures. Findings illustrate an emphasis on cooperative team processes in collectivist cultures like Japan. In organizations located in individualistic cultures, the team cohesiveness will be substantially less than in organizations located in collectivist cultures (Wendt et al., 2009).

Workers' Resistance

Lean workers have been identified as reporting the greatest job stress, heaviest and fastest workloads, and difficulty in getting time off (Conti et al., 2006). Research has shown a correlation between personnel stress and lean implementation. In many lean implementations, human behavior has not been integrated into the process. Therefore, the human element must be positively influenced to achieve success in lean implementation (Sawhney & Chason, 2005).

Karlsson and Ahlstrom (1996), report on an example where management wanted the employees to rotate tasks frequently; however, this was not achieved. Often changes brought about by lean manufacturing may cause problems in the very process it is meant to improve. The reason for this outcome is that some employees fear an infringement and possible job loss. Therefore, they are prepared to respond with sabotage (Achanga, Shehab, Roy & Nelder, 2006). In Ontario, Canada, workers were often dissatisfied and regularly contested the dictates of lean production at CAMI Automotive Inc. Instances of work slowdowns, and work refusals became a regular problem (Rinehart, Huxley & Robertson, 1998).

The area that is unclear is the impact of lean production strategies on work demand, work energizer profiles, and worker health. Work energizers may include among others,

work autonomy, task variety, employment security, development and utilization of skills, and knowledge of organizational performance (Genaldy & Karwowski, 2003). This is an important aspect, since the worker is at the heart of applying the lean production model. It is fair to conclude that the human asset is key to long-term superior organizational performance. To identify the best human performance practices required to achieve and maintain work productivity one must look deeper into this issue (Genaldy & Karwowski, 2003). Work compatibility becomes an important concept that must be developed and examined regarding work outcomes (Genaldy & Karwowski, 2003).

According to a qualitative study by Worley and Doolen (2006), substantial evidence has been uncovered showing that management plays a major role in implementing the lean manufacturing process. It is believed that many variables may affect the success of a lean manufacturing implementation; however, researchers agree that commitment by top management is vital. Top management should communicate with the employees, and provide them with information on the lean manufacturing program, and its value to the organization. Management that does not fully commit to the implementation process may sabotage the whole effort. Although it is desirable to bring the change from the factory floor, at the same time it is vitally important that a transition to lean manufacturing be driven by top management (Worley & Doolen, 2006).

Antony and Banuelas (2001) believe that management involvement and commitment are the two most essential prerequisites to help in achieving the desired productivity improvement (as cited in Achanga, Shehab, Roy & Nelder, 2006). Funding and leadership deficiencies become a barrier for productivity initiatives such as workforce training, skills, and cultural awareness, which ultimately effect the application and utilization of lean

31

manufacturing in an organization (Achanga, Shehab, Roy & Nelder, 2006).

In a focus group study by McCuiston et al. (2004), the findings showed that to manage a diverse workforce, management must recognize and appreciate employee differences. This helps in reducing negative conflict, stereotyping, and miscommunication that can have an adverse effect on productivity, employee commitment, and loyalty (McCuiston et al., 2004).

It has been shown that a successful 5S implementation lays the foundation for the lean system. It can be concluded that the continued success of a 5S implementation is dependent not only upon management's involvement, but also on the attitude and cooperation of the workforce. To achieve success in a 5S implementation, the workers must be positively influenced by management.

Religion and Culture

It is interesting to note that in England, where, they have been living for a few generations, the people from the Indian Sub-Continent are somewhat integrated. The Sikhs are highly segregated and prefer to socially interact with other Sikhs and the Pakistani community, of which quite a few speak the same Punjabi language as the Sikhs. The Indian Hindus, Muslims, Christians, and the Pakistani Muslims have the greatest co-affinity. The languages they speak, like Urdu and Punjabi by the Pakistani Muslims and Guajarati by the Indian Hindus and Muslims, are more distinguishable by script rather than by voice. However, there is little social interaction between Indian Hindus and Hindus from the Caribbean islands, due to different cultures. Additionally, the Bangladeshi Muslims who mostly speak Bengali are highly segregated, like to live close together with other Bangladeshis in England, remain aloof from others, and are socially separated even from

Muslims of India and Pakistan (Peach, 2006). The religion Hinduism is often categorized as a collection of traditions. It is true that its sacred scriptures support a monotheistic religion. However, its clergy introduced new religious laws and ceremonies to enjoy more revenue and power. The colonial representation of Indian traditions comprise two separate branches: the philosophical Hinduism and the popular Hinduism. The philosophical Hinduism is identified by ancient and monotheistic religion in sacred scriptures, whereas the popular Hinduism points to its corrupted practices in idolatry and ritual (Gelders, 2009). It should be understood that common religious affiliation proves effective in large scale mobilization; however, it is a short lived solidarity and depends on certain specific issues. At the same time, the networks of reciprocity are based on much narrower loyalties of caste sect and descent. The Pakistani Muslim community living in England also ensures that their marriages only take place within their biraderi (extended family) (Peach, 2006).

According to Geertz (2000), "Culture denotes a historically transmitted pattern of meanings embodied in symbols, a system of inherited conceptions expressed in symbolic forms by means of which men communicate, perpetuate, and develop their knowledge about attitudes towards life" (p. 89).

Also, according to Spradley (1979):

"The most striking feature of human beings is their diversity. Why does a single species exhibit such variation, creating different marriage patterns, holding different values, eating different foods, rearing children in different ways, believing in different religions, and pursuing different goals? Cultural description, the central task of ethnography, is the first step in understanding the human species. Comparison not only reveals differences but also similarities, what is common among all cultures of

the world. In the most general sense, then, ethnography contributes directly to both description and explanation of regularities and variations in human social behavior. Each culture provides people with a way of seeing the world, by categorizing, encoding, and otherwise defining the world in which they live. Culture includes assumptions about the nature of reality as well as specific information about that reality. It includes values that specify the good, the true, and the believable. Whenever people learn a culture, they are to some extent imprisoned without knowing it. Anthropologists speak of this mode of existence as being *culture bound* that is, living inside a particular reality that is taken for granted as *the reality*. Our culture has imposed on us a myth about our complex society, the myth of the melting pot. Social scientists have talked about American culture as if it included a set of values shared by everyone living in the United States. It has become increasingly clear that our culture is not homogenous, that people who live in modern, complex societies actually live by many cultural codes. Not only is this true of the most obvious ethnic groups but each occupation group exhibits cultural differences. Consider the language, values, clothing styles, and activities of high school students in contrast to high school teachers and staff. The difference in their cultures is striking, yet often ignored. As people move from one cultural scene to another in complex societies, they employ different cultural rules." (pp. 10-12)

An interesting point of discussion asks where religion ends and culture begins; or, depending upon one's philosophical assumption, where culture ends and religion begins. To understand this we can use the example of two religious services conducted in a Christian church in Islamabad, Pakistan, on an average Sunday. In the morning service, the diplomats

and expatriates come and the service is conducted in English. The men and women sit together dressed in western clothing and the women do not cover their heads. The hymns are traditional, and the singing accompanied by an organ. In the second service, held later in the morning, the men and women, who are Pakistani Christian citizens, sit in different aisles dressed in the native dress, and the women are veiled. The liturgy, sermon, prayers, and singing are performed in Urdu, utilizing local music instruments and dispensing with the organ. Similar observations could be made about the process of interaction between any religion and culture. Religions provide the conditions and terms of approval and disapproval, and of acceptance and rejection. Religions also extend beyond death and explain how the ultimate goals of life can be attained. Culture can be thought as a causal agent that affects the evolutionary process by uniquely human means. In religion, there is a process of revelation and there is the concept of the faithful who receive the message of revelation. Culture allows for the self-conscious determination of human possibilities in light of several values that reflect prevailing ideas about what human life ought to be. This means that culture gives increasing control to humans over the direction in which our species changes (Bonney, 2004).

According to Martin (1976), personality and value theory suggest that the identification that an individual makes regarding religious affiliation and strength of religious conviction become part of his personality. Personality and values are critical factors in predicting behavior in organizations and subsequent work attitudes. Herzberg (1984) thinks that people following the eastern religions believe in the dominance of group ego over individual ego that can be found in western religions. This suggests that eastern religions

would be easier to manage and more loyal and committed to the organization (as cited in Chusmir & Koberg, 1988).

Religion as explained by Geertz (2000):

"…is a system of symbols which acts to establish powerful, pervasive, and long-lasting moods and motivations in men. The religious perspective differs from the common-sensical in that, it moves beyond the realities of everyday life to wider ones which correct and complete them, and its defining concern is not action upon these wider realities but acceptance of them, faith in them. It differs from the scientific perspective in that it questions the realities of everyday life not out of an institutionalized skepticism, but in terms of what it takes to be wider, non-hypothetical truths. Rather than detachment, its watchword is commitment; rather than analysis, encounter. It also differs from art in that instead of effecting a disengagement from the whole question of factuality, deliberately manufacturing an air of semblance and illusion, it deepens the concern with fact and seeks to create an aura of utter actuality. It is this sense of the really real upon which the religious perspective rests and which the symbolic activities of religion as a cultural system are devoted to producing, intensifying, and, so far as possible, rendering inviolable by the discordant revelations of secular experience. It is, again, the imbuing of a certain specific complex of symbols, of the metaphysics they formulate and the style of life they recommend, with a persuasive authority which, from an analytic point of view, is the essence of religious action. The importance of religion lies in its capacity to serve, for an individual or for a group, as a source of general, yet distinctive, conceptions of the world, the self, and the relations between them, on the one hand, and of rooted, no

less distinctive mental dispositions on the other. From these cultural functions flow,

in turn its social and psychological ones." (pp. 90-123)

According to Beekun and Badawi (2005), Islam lays emphasis on a balanced

approach towards work and considers interests of different stakeholders. Also, Darwish

(2001) is of the opinion that Islamic values are actually conducive to organizational change

and development and that Islam adds importance to work and commerce. According to

Hopkins and Ibrahim (1997), Islam is the backbone of the Arab value system; however, some

dynasties like Ottomans or Mamluks, who governed parts of the Arab world, have also left

an impact on the value system. Arabs prefer to work in groups, under a strong leader, and

group goals are given preference over the organizations interests. Wafta (2000) provides

examples of how the educational institutions emphasize values that discourage critical

thinking and encourage learning by rote. Sharabi (1997) is of the view that Arabs do not trust

people from outside their social group and, as such, an Arab individual seems to grow as an

individualist in a collectivist society. Arabs work in organizations as group of individuals

interacting with each other because of organizational requirements, but their hearts are not

necessarily in the task they have at hand. According to Hofstede (2001), Arabs are reluctant

to take initiative and make decisions in situations that can have negative repercussions on

them. This behavior does not work well in a team environment where they do not contribute

with their own ideas and problem solving skills, and depend upon the leader to give direction

and orders (as cited in Sidani & Thornberry, 2009).

The protestant work ethic has been under research for a long time. In the early 20th

century, Max Weber (1904/1905) argued that Protestants developed a distinct work ethic as a

path towards salvation. They set a cultural norm that doing a good job for its own sake has a

positive moral value as a service to God. According to Hofstede (1992), to understand the subtle impact of religion on business, one must understand national cultures. Culture has been described as the collective mental programming shared by some people. Adler and Gunderson (2008) believe that the power of religion is shown through similarity of culture across the many Islamic nations, and in the Indian diasporas spread across the globe. Humans try to maintain the culturally derived values, beliefs, and behaviors in the workplace and even while traveling across cultures. Johnson (1997) emphasizes that the centrality of work in the U.S.A. is explained by the Protestant Work Ethic. This ethic holds that a good Protestant must work hard on the earth, succeed, and expect to reap rewards later in Heaven. On the Hindu religion, Hinnells (1997) states that Hindu philosophy offers dharma (duty) as one of the four means to salvation (as cited in Rao, 2011).

In research of Pakistani and Indian organizations, it was observed that employees used a relationship-focused strategy to develop better relationships with the managers. Also, in both nations, employees could not make decisions independently and required a strong sense of job security. Moreover, the scope of creative management is limited by organizational rules and regulations. However, in a sample of younger Pakistani employees, it was observed that instead of using a relationship-focused strategy to move ahead in their job, they used a job-focused strategy (Khilji et al., 2010).

It can be concluded from the above literature review that the people of the Indian Sub-Continent, when living abroad, like to remain in contact with people of the same religion or culture, which shows that they are truly collectivists. Among the people of the Indian Sub-Continent group the Sikhs and Bangladeshis are highly segregated, only feeling comfortable and secure while living in close proximity with other Sikhs and Bangladeshis. It will be

worth observing how this strong group behavior of Sikhs and Bangladeshis shows in their performance in the organization, where teamwork and support of coworker is required, such as in 5S activities.

Ethnographic Data Analysis

Much of contemporary methodological discourse about organizational (and other) ethnography relates to how the ethnographer gains access to a social situation, what it means to engage that conceptual world in which the subjects live and, most importantly, how ethnographers' efforts might enable them to converse with it. Ethnography as a methodology (rather than method) suggests that there are no illegitimate voices. In other words, ideas of a janitor and a CEO count equally. This is what makes ethnography so critical in its refusal to privilege one type of voice above another and its willingness to look into the production of voice as well as whatever might hinder voice (Yanow, 2012).

Traditional ethnographic inquiry depends upon face-to-face interaction with the subjects, while immersed in a single, bounded community. The anthropologist faces many difficulties to make this happen. This is the traditional idea of ethnography, which still survives in our methods, textbooks, and discussions. Technological advances and new forms of organization challenge the methods inherent in both of these assumptions. Ethnography needs to be able to give a methodological account of different surrogates for in-person relationships, from voice (e.g. telephone or VOIP interviewing) to writing (e.g. e-mail, SMS, and "Chat" IM interactions) that are being increasingly used in today's organizations (Yanow, 2009).

A good ethnography gives the impression that the writer has been truly there, while the reader also feels that he has been there too. Being there is about conveying feelings of

intense familiarity with the subjects. The successful account conveys authenticity, and the reader feels confident that he is getting the real story because of the length of time the writer has spent with his subjects. The best ethnographic accounts text becomes a window rather than a page (Bate, 1997).

The ethnographer in the field encounters subjects and their environment in the same manner that the translator of fiction encounters a text in a foreign language. It is unavoidable that the data have to be reshaped and that the subjective territory of the ethnographer's mind must be looked into as either a weakness for its skewing of data or strength for the interpretive light it throws on the data. The ethnographer's mind is a transitional space, which presents a methodological problem. Similar to the translator of a text, the ethnographer is making choices about what to report and how to report (Churchill Jr., 2005). Ethnography is never about just "writing up" what one has seen; rather, it is more a process of entering the psychic space of other human beings to the maximum possible extent, and then translating the actions of those subjects by way of seeing the world from their point of view. The ethnographer has to shift between his own native dialect, which includes bodily gestures, dress, gender assumptions, and language itself, and that of his subjects without coming across with a feeling of strangeness (Churchill Jr., 2005). Ethnographers do not have a problem in recording the language used and actions taken by subjects in their native setting. However, to completely understand that language and the subjects' actions, the ethnographer must also be able to enter their mindset. The ethnographer, therefore, must attempt the impossible act of entering the consciousness of his subjects. This barrier could be acknowledged as a major flaw in the ethnographer's technique, and still he can use it advisedly (Churchill Jr., 2005). We have to accept ethnography's limitations as a means of translation and understand that no

technological advance in voice recording or software-dependent sorting can provide a perfect

bridge over the gap between selves. A positive, quantitative response to this dilemma can be

to claim that any effort to collect social data with techniques like participant observation is

unscientific and inaccurate. In a limited manner, this may be true; however, the ethnographer

does not aim for pure scientific accuracy. On the other hand he only hopes to capture major

aspects of the social structure of the group he is trying to study while acknowledging that

further research must be done to get closer to the group's reality (Churchill Jr., 2005).

Ethnography is experiential data collection, with the researcher himself working as a

tool for collecting information and performing the analysis through his own experiences, and

is controlled by confirming to the standards of observation. Holistic ethnography can be

defined as a study that combines the detailed, experiential perspectives of different groups

within a social unit, develops an overarching narrative through participant observation in

these groups, and obtains a fragmented and integrated perspective on the social unit (Moore,

2011). In holistic ethnography, when we compare the different groups' perspectives, we are

able to determine how certain problems developed, why there is a particular fit between

different worldviews, and the consequences. Holistic ethnography provides a broad

perspective on the organization as well as access to tacit discourses. It further allows

researchers to see culture as having simultaneous elements of rigidness and fluidity, and

positive and negative impacts on the organization. It also allows the examination of internal

discourses, how they affect different groups in the organization, and how these groups relate

differently to external discourses (Moore, 2011).

"Ethnography is the work which describes a culture. The main aim of ethnography is

to understand another way of life from the native point of view" (Spradley, 1980, p. 3). The

most important component of ethnography concerns the meaning of actions and events of the people we are trying to understand. When ethnographers begin to study other cultures, they have to deal with three fundamental aspects of human experience: what people do, what people know, and the things people make and use. When each of these are learned and shared by members of some group, we speak of them as cultural behavior, cultural knowledge, and cultural artifacts (Spradley, 1980, pp. 5-10).

"All social situations can be identified by three primary elements: a place, actors, and activities" (Spradley, 1980, p. 39). A participant observer will try to locate himself in some place, will watch actors and become involved with them, and will also observe and participate in activities. A social situation can be any physical setting as long as it has people present who are engaged in activities. When a researcher first enters a social situation it is often quite difficult to find out what kinds of actors are present. At first, what the researcher sees are just people. With repeated observations, he notices the differences in clothing, behavior, demeanor, and other features that people use to identify the various actors in a particular situation. Another element in every social situation is the activities that take place. At first, the ethnographer may observe only a stream of behavior, hundreds of acts that all seem different. However, with repeated observations, individual acts begin to fall into recognizable patterns of activities, like hunting, running, finding a seat on the bus, etc. At times sets of activities are linked together into larger patterns called events. A wedding is an example of an event, which can involve different activities like the rehearsal, breakfast, marriage ceremony, and reception. All of these activities are linked together into a larger event which is called wedding (Spradley, 1980, pp. 39-42).

Analysis is a search for patterns. As a participant observer, you try to record what

people do and say, and after that you are able to infer what they know. However, in order to move ahead and describe the cultural behavior, the cultural artifacts, and the cultural knowledge the participant observer must discover the patterns that exist in the data (Spradley, 1980, p. 85). "Culture is defined by the pattern of behavior, artifacts, and knowledge that people have learned or created" (Spradley, 1980, p. 86). "Culture is an organization of things, the meaning people give to objects, places, and activities" (Spradley, 1980, p. 86). It is true that every human society is culturally constituted. As outsiders, ethnographers participate, observe, and ask questions in order to find out the cultural meanings known to the insiders. As a participant observer, one has to move gradually from just observing a social situation to discovering a cultural scene. The fundamental unit in every culture is the cultural domain. Domain analysis is considered to be the first type of ethnographic analysis. The second type is the taxonomic analysis, which involves a search for the way cultural domains are organized. The next part of domain constitutes the componential analysis, which involves a search for the attributes of terms in the domain. The theme analysis comes at the end, which involves a search for the relationships among domains and how they are linked to the cultural scene as a whole (Spradley, 1980, pp. 86-88).

"Within the sociological tradition the most widely used technique for analyzing data is thematic analysis, a process that involves coding and then segregating the data by codes into data clumps for further analysis and description" (Glesne, 2006, p. 147). The interpretation process is a bit tricky and any kind of social interaction can be examined from multiple frameworks (Glesne, 2006, p. 169). "The unraveling of these interpretations is what makes qualitative research so interesting and useful, as you learn to think and see and help others to think and see in new ways" (Glesne, 2006, p. 169).

Data analysis means organizing what the researcher has seen, heard, and read so that he can get some sense out of what he gathered from the fieldwork. While working with the data, the researcher describes, explains, creates hypotheses, and develops theories. In order to accomplish this he must categorize, synthesize, search for patterns, and interpret the data he collected. This process begins by going through whatever type of data he has, like observation notes, logs, transcripts, documents, and literature. The researcher needs to identify what appears to be important and then gives it a name (or a code) (Glesne, 2006, pp. 147-154). "Once he has collected and coded all the data scraps, he should start arranging the major code clumps into a logical order by asking himself which clumps or parts of clumps belong together in a certain category" (Glesne, 2006, p. 154). After completing such analysis he can sort out what he has learnt so that he can focus on writing up his data (Glesne, 2006, p. 154). An ethnographic focus refers to a single cultural domain or a few related domains and their relationships to the rest of the cultural scene. Some ethnographers have a specific problem for study, making the choice for an in-depth investigation, before they visit the field (Spradley, 1980, p. 101). "All ethnographic problem solving begins by identifying the problem, identifying the cause, and then listing a possible number of solutions"(Spradley, 1980, p. 102).

Opler (1945) states that "cultural theme is a postulate or position, declared or implied, and usually controlling behavior or stimulating activity, which is tacitly approved or openly promoted in a society" (as cited in Spradley, 1980, p. 140). Cultural themes are the elements in patterns that make up a certain culture. They usually take the form of an assertion such as men are superior to women. A cognitive principle is something that people believe and accept as true and valid in a certain culture; it is an assumption about the nature of their

commonly held experience. Themes are those assertions that have a high degree of generality. They apply to many different situations and recur in two or more domains (Spradley, 1980, p. 141). "Cultural themes usually remain at the tacit level of knowledge and people do not express them easily, although they know the cultural principle and use it to organize their behavior and interpret experience" (Spradley, 1980, p. 143).

"A process of noting what is interesting, labeling it, and putting it in a proper file is called classifying or coding" (Seidman, 2006, p. 125). "Qualitative analytic coding proceeds in two phases, open and focused coding" (Emerson et al., 2011, p. 172). In open coding the ethnographer reads field notes line by line to identify and formulate any and all ideas, themes, or issues they suggest; however, in focused coding the line by line analysis is done based on topics that are of particular interest. A theme that is identified allows the researcher to make linkages to other issues noted in the data that are of great interest (Emerson et al., 2011, p. 172). "The main task of the ethnographer is to attribute meanings and importance to patterns and regularities that people usually take for granted, until a researcher points them out, and gives them significance by associating them with experiences, situations, and literature" (Le compte & Schensul, 1999, p. 214).

The main aim of an interview is to understand how the subjects understand and make meanings of their experience. If the interview structure works to make sense to subjects as well as to the interviewer, then it helps the validity process (Seidman, 2006, p. 24). The reason an interviewer spends so much time talking to participants is to determine what their experience is and the meaning they make of it in order to make connections among the experiences of people who share the same structure (Seidman, 2006, p. 128). "The interpretation process includes labeling passages of interest, grouping them, as well as

developing profiles of the subjects. The researcher should ask himself what he has learned from the research process" (Seidman, 2006, p. 128).

"The ethnographer first identifies pieces of field note data excerpts that could develop a storyline, and then writes interpretive commentary about these excerpts; he also edits each excerpt and commentary unit so that the analysis elaborates and highlights the field notes that are kernels of the story" (Emerson et al., 2011, p. 206). Finally, the researcher must organize these excerpts-commentary segments into coherent sections of the ethnography; that is, he organizes them in a sequence that creates a compelling story line that leads readers to an even fuller understanding of the people and issues addressed (Emerson et al., 2011, p. 206).

Qualitative researchers try to organize, classify, and find themes in their data. At the same time, they need to search for ways to make connections that are meaningful to themselves and the reader. Wolcott (1994) discusses description, analysis, and interpretation as the three means of data transformation, or of moving from the organization of data to finding its meaning. Description involves staying as close as possible to data that were originally recorded. The researcher has to draw heavily on field notes and interview transcripts, which allows the data to speak for themselves. By following this approach the researcher gets the answer to the question: what is going on here? The narratives of descriptive analysis usually move in and out like zoom lenses, selecting and providing details that resonate with the study's purposes. Wolcott (1994) describes analysis as the second category of data transformation. Analysis, according to Wolcott, is the identification of key factors in the study and the relationships among them. Interpretation is Wolcott's (1994) third means of data transformation. He is of the opinion that interpretation occurs when the researcher moves beyond factual data and cautious analysis and begins to look into what is to

be made of them. There are different strategies for data interpretation, like: using theory to provide structure, connecting with personal experience, or finding some other way of presenting data. Data transformation is always an integral part of all types of research, qualitative or otherwise. It is the responsibility of researchers to manage and make sense of their data, to transform them from its acquired form, when it is merely information, into a form which communicates the promise of a study's findings (as cited in Glesne, 2006, pp. 164-165).

The data from the interview can be shared in two ways, first profiles can be developed of individual subjects, and second individual passages can be marked, grouped in categories, and the categories can then be studied for thematic connections within and among them (Seidman, 2006). A profile allows for the subject to be presented in context, to make his intentions clear, and to provide a sense of process and time, all important components of qualitative analysis. The profile that has been developed in the subject's own words gives an idea of the person's consciousness (Seidman, 2006, pp. 119-120). Profiles are one way to solve the problem the researcher has of finding a way to share what he has learned from the interviews. The narrative form of a profile allows the researcher to transform the learning into story telling. Telling stories is a trusted way by which human beings make sense of themselves and their social world. In other words telling stories is a compelling way to make sense of interview data. The researcher can also work with excerpts from the subjects' interviews, seek connections among them, explain those connections, and build interpretative categories. However, this whole process is demanding and involves risks. The fear is that the researcher will try to force the excerpts into categories and force the categories into themes that he has already thought about, rather than develop them from the experience of the

subjects as depicted in the interviews. The researcher is making an effort to find out the subjects' experiences, the meaning the subjects make of it, and finally to make connections among the experiences of people who share the same structure. The researcher must understand that it is important to affirm his judgment, as well as his feeling of rightness and coherence about the process of working with the data; this is his contribution (Seidman, 2006, pp. 120-128).

Interpreting is not a process that is performed only near the end of the project by the researcher. Even as researchers question their subjects, tentative interpretations may begin to influence the follow up questioning. It is analytic work when the researcher marks passages that are of interest, labels them, and groups them. All this has within it the seeds of interpretation (Seidman, 2006, p. 128). "Crafting a subject's profile is an act of analysis, as is presenting and commenting upon excerpts which are arranged in categories. Both these processes lay the ground for interpretations" (Seidman, 2006, p. 128). For the researcher, it is tempting to let the profiles and the categorized, thematic excerpts speak for themselves. However, another step is essential: researchers have to ask themselves what they have learned from doing the interviews, studying the transcripts, marking and labeling transcripts, crafting profiles, and organizing categories of excerpts. Finally, the researcher has to determine and explain the connective threads which are present among the experiences of the subjects they have interviewed (Seidman, 2006, p. 128). According to Fay (1987) "what the researchers learn may lead them to propose connections among events, structures, roles, and social forces operating in people's lives" (as cited in Seidman, 2006, p. 129).

Chapter 3: Research Design and Methodology

Research Background

   This research is qualitative, and the research design that is utilized for this study is

ethnography. This research design was selected because the researcher is from the Indian

Sub-Continent, is able to speak the same language, and understands the culture of the

workers who migrated from this part of the world. In this research, data are collected from

people who migrated from the Indian Sub-Continent and are now working in an organization

that supposedly had implemented the 5Ss. This ethnographic study was conducted over a

period of six months. It helps in describing how the Indian Sub-Continent group works, and

it explores their beliefs, behaviors, and cultural norms. Important 5S activities observed in

this organization were that all incoming shipments were separated according to part number,

picked up by the material handler, and kept at the proper place on the rack. Some of the other

5S activities that were taking place were the cleaning of the workplace. However, at times

some irregularities were observed. The researcher, who works in this organization, developed

very good rapport with most of the workers, including those from the Indian Sub-Continent,

who helped him during his research study. The researcher did not have any communication

problems since he could speak the languages of the Indian Sub-Continent workers, which are

mostly Hindi, Punjabi, and Urdu.

Population, Sample, and Subjects

   The subjects for this study included Indian Sub-Continent employees of a

manufacturing plant where 5Ss had been implemented. A group of 33 employees who

migrated from different countries of the Indian Sub-Continent became part of this study.

There were a total of 200 employees in the 1st and 2nd shifts, which consisted of 150

employees from the Indian Sub-Continent, 22 white Americans, 14 African Americans, 4 Mexicans, and 10 workers from Yemen. The group of 33 employees selected for the study consisted of subjects who worked as machine operators, as material handlers, or as first line supervisors. They migrated from three countries of the Indian Sub-Continent (namely, India, Pakistan and Bangladesh) and followed different religions such as Islam, Christianity, Hinduism, and Sikhism.

Human Subject Approval

This study involved getting personal data from the subjects and writing a report on the findings. Therefore, human subject's approval was necessary and was obtained from the EMU Human Subjects Review Board (see Appendix A). The subjects selected for this study were asked to provide consent to participate in the study. Because of ethical concerns that the information provided by the subjects might be used against them in any manner, complete confidentiality has been maintained of the subjects. The subjects were allowed to voluntarily withdraw from the study at any time and were informed about the benefit of the study to them.

Data Collection

Data were collected through fieldwork with the help of interviews, which were audio recorded, as well as observations of worker activity on the job. Field notes were also taken during this study while observing the subjects. The researcher collected data in the role of participant/observer over a six month time period. This was a sufficient period to make this research project reliable, credible, and accurate. This study ensured internal validity through triangulation of data. The triangulation of data obtained through the interview process was done by the observations of participants by the researcher in the role of a

participant/observer.

An interview guide was developed after consulting with an expert in qualitative research Dr. Valerie Polakow. The guide consisted of 14 questions, which were followed up by probing questions to clarify the position of the participant. The follow-up questions depended on the type of response given by the participant. The observation was done over a period of six months and each participant was observed for two hours at different times of the work day. If during the observation the participants did something which was in conflict with what they said in the interview, they were approached to clarify their position.

Data Analysis

The main purpose was to analyze the data for a description of the culture sharing group and the theme that emerged from the group. The researcher analyzed the categories and patterns that emerged that signify how the cultural group worked and lived. In an ethnographic study, the data collection and data analysis often occur simultaneously. The analysis was done in the following manner:

1. Description: All the information collected was organized in a logical structure. The events involving the Indian Sub-Continent workers were discussed and the critical events studied in detail.

2. Analysis: The data was categorized according to their meanings. Patterns, regularities, and critical events for the Indian Sub-Continent workers were identified.

3. Interpretation: The general nature of the culture was inferred from the categories, meanings, and patterns identified in the previous step. The existing theoretical frame works in the field provided structure and supported the interpretation process.

This procedure helped to provide an insight into the problems faced by the Indian

Sub-Continent workers involved in 5S activities. Since there was no generalization, external validity was not required. The workers were requested to review the transcripts. This was the verification process. The researcher also asked his colleagues in the field if they agreed or disagreed that he had made appropriate interpretations and drawn valid conclusions from the data. This helped validate the content. The construct validity was confirmed by asking the colleagues in this field if they agreed with the interpretation of the construct that came out of this research study.

The researcher utilized some of the strategies which have been recommended by Creswell (2007) for the purpose of validation, which are as follows:

1. Prolonged engagement and persistent observation in the field, which includes developing trust with participants, learning their culture, as well as checking for wrong information that grows from distortions introduced either by the researcher or the participants.

2. Making use of triangulation, which makes use of many different sources, methods, and theories to develop supporting evidence.

3. Requesting participants' feedback on the interpretation and findings of the data.

Bias

It is understood that participant observation (PO) is a research tool which is considered more subjective than the use of a survey or questionnaire. However, subjectivity is an essential evil to reckon with, since every type of methodology includes interpretation by the researcher. The researchers cannot eliminate subjectivity since they are always and irreducibly subjects. It should also be understood that subjectivity and objectivity are not exclusive. It is because researchers have subjectivity that one can finally get hold of the truth, the objective (Drury & Stott, 2001).

Theories of racial prejudice convey that prejudice, bias, and racism are like continua, which can affect the researcher in varying degrees. Through research, it is evident that there is an unconscious component to racial bias and prejudice, which supports the theoretical models of prejudice. Stereotypes are oversimplified generalizations of groups or other social targets. When someone categorizes an individual as a member of a particular social group, the group-related cognitive structure or stereotype is activated in the mind. Consequently, all subsequent information about that person is processed within the framework of that particular stereotype. This can influence how the information is interpreted and encoded (Abreu, 2001).

It is true that surveyor bias may affect respondents, since most people can pick up subtle signs of friendliness or hostility. The questioner's unconscious biases can come across to the respondents in subtle ways and, consequently, the respondents might answer with these biases in mind. Ideally, an interview process should just be a transfer of information; however, in reality, the interviewer's tone of voice and body language can affect the respondents' answers in an undesirable manner. In order to avoid bias, the interviewer should treat all respondents identically, regardless of their personal reactions to the interviewee (Leal, 1999).

Therefore an effort was made to treat all participants in a similar manner. Also, during the interview and observation process, the researcher did not show his feelings towards their response in the interview or workers actions while observing their work.

Personnel

A research advisor helped in guiding the research effort.

Resources

A personal computer was required to compile the report.

Budget

This research was completed with a budget of around $1000.

Chapter 4: Results and Discussion

After obtaining permission from XYZ Company to conduct the research in their organization, a group of 33 subjects were selected from 150 employees who had migrated from the Indian Sub-Continent. All potential subjects agreed to become part of this research, and the informed consent letters were signed by the subjects. Interviews were recorded and, later on, these workers were observed while working in the organization. During the writing process and after analysis, some of the subjects were approached to validate the findings. The results of the interviews and observations are summarized in two tables and analyzed here. The names of the subjects have been coded S1 through S33, in order to maintain their confidentiality. Table 1 summarizes the characteristics of the Indian Sub-Continent subgroup, and Table 2 reflects on the 5Ss, interview responses, and subsequent field observations.

Table 1

Characteristics of the Indian Sub-Continent Subgroup

S#	Job description	Offered ideas	Religion Important	Family influence on work ethics	Help others	Team worker
S1	Hi-Lo driver	No	Yes	Yes	Yes	Yes
S2	Press Operator	Yes	Yes	Yes	Yes	Yes
S3	Break Reliever	Yes	Yes	No	Yes	Yes
S4	Shipment Receiver	Yes	Yes	Yes	Yes	Yes
S5	Hi-Lo driver	Yes	Yes	Yes	Yes	Yes
S6	Hi-Lo driver	No	Yes	Yes	Yes	Yes
S7	Hi-Lo driver	Yes	Yes	Yes	Yes	Yes
S8	Dock Auditor	Yes	Yes	Yes	Yes	Yes
S9	Press Operator	Yes	Yes	No	Yes	Yes
S10	Shipping helper	Yes	Yes	Yes	Yes	Yes

S#	Job Description	Offered ideas	Religion Important	Family influence on work ethics	Help others	Team worker
				Table 1 (Continued from previous page)		
S11	Quality Inspector	Yes	Yes	Yes	Yes	Yes
S12	Hi-Lo driver	Yes	Yes	Yes	Yes	Yes
S13	Stock Handler	Yes	Yes	Yes	Yes	Yes
S14	Quality Inspector	Yes	Yes	Yes	Yes	Yes
S15	Team Leader	Yes	Yes	Yes	Yes	Yes
S16	Break Reliever	Yes	Yes	No	Yes	Yes
S17	Quality inspector	Yes	Yes	Yes	Yes	Yes
S18	Shipping helper	Yes	Yes	Yes	Yes	Yes
S19	Machine Operator	Yes	Yes	Yes	Yes	Yes
S20	Shipping helper	Yes	Yes	Yes	Yes	Yes
S21	Material Handler	No	Yes	Yes	Yes	Yes
S22	Team Leader	Yes	Yes	No	Yes	Yes
S23	Shipping Office Supervisor	Yes	Yes	Yes	Yes	Yes
S24	Press Operator	Yes	Yes	Yes	Yes	Yes
S25	Production helper	Yes	Yes	Yes	Yes	Yes
S26	Press Operator	No	Yes	Yes	Yes	Yes
S27	Service Parts Supervisor	Yes	Yes	No	Yes	Yes
S28	Shipping Office Supervisor	No	Yes	Yes	Yes	Yes
S29	Shipment Receiver	Yes	Yes	Yes	Yes	Yes
S30	Press Operator	No	Yes	Yes	Yes	No
S31	Plant Buyer	Yes	Yes	No	Yes	Yes
S32	Plant Buyer	Yes	Yes	Yes	Yes	Yes
S33	Quality Supervisor	Yes	Yes	No	Yes	Yes

Table 2

Subjects 5S responses and as observed

S#	Job description	Subject says follows 5Ss	5Ss situation observed	5Ss situation: Subject non-compliant in this situation	5Ss situation: Non-compliance caused by others	Subject wants more 5Ss training
S1	Hi-Lo driver	Yes	No	N/A	N/A	No
S2	Press Operator	Yes	No	N/A	N/A	No
S3	Break Reliever	Yes	No	N/A	N/A	No
S4	Shipment Receiver	Yes	Yes	No	Yes	Yes
S5	Hi-Lo driver	Yes	Yes	Yes	No	No
S6	Hi-Lo driver	Yes	Yes	No	No	No
S7	Hi-Lo driver	Yes	Yes	No	No	Yes
S8	Dock Auditor	Yes	Yes	No	No	N/A
S9	Press Operator	Yes	No	N/A	N/A	N/A
S10	Shipping helper	Yes	No	N/A	N/A	Yes
S11	Quality Inspector	Yes	No	N/A	N/A	Yes
S12	Hi-Lo driver	Yes	No	N/A	N/A	Yes
S13	Stock Handler	Yes	No	N/A	N/A	No
S14	Team Leader	Yes	No	N/A	N/A	No
S15	Team Leader	Yes	Yes	No	Yes	No
S16	Break Reliever	Yes	Yes	No	Yes	No
S17	Quality inspector	Yes	Yes	No	Yes	Yes
S18	Shipping helper	Yes	Yes	No	Yes	No
S19	Machine Operator	Yes	Yes	No	Yes	No
S20	Shipping helper	Yes	Yes	No	Yes	Yes
S21	Material Handler	Yes	No	N/A	N/A	No
S22	Team Leader	Yes	No	N/A	N/A	No
S23	Shipping Office Supervisor	Yes	No	N/A	N/A	No
S24	Press Operator	Yes	No	N/A	N/A	Yes
S25	Production helper	Yes	No	N/A	N/A	Yes

S26	Press Operator	Yes	No	N/A	N/A	No
Table 2 (Continued from previous page)						
S#	Job description	Subject says follows 5Ss	5Ss situation observed	5Ss situation: Subject non-compliant in this situation	5Ss situation: Non-compliance caused by others	Subject wants more 5Ss training
S27	Service Parts Supervisor	Yes	Yes	No	Yes	No
S28	Shipping Supervisor	Yes	Yes	No	Yes	No
S29	Shipment Receiver	Yes	No	N/A	N/A	No
S30	Plant Buyer	Yes	No	N/A	N/A	No
S31	Plant Buyer	Yes	Yes	No	Yes	No
S32	Press Operator	Yes	No	N/A	N/A	Yes
S33	Quality Supervisor	Yes	No	N/A	N/A	Yes

Discussion

Some of the categories and patterns of behavior that emerged from this ethnographic study which included subjects' interviews and observations were:

1. The importance of religion.

2. Contributions towards 5Ss.

3. Working in teams.

4. Importance of family.

5. *Desi* culture (*desi* means a person belonging to the Indian Sub-Continent).

6. Problems in maintaining 5S standards.

7. Gender segregation in the lunch room.

8. *Desi* workers' submissive behavior towards their supervisor.

9. Language barrier.

Importance of Religion in *Desi's* Lives

Religion has a very important place in the lives of the Indian sub-continent workers at XYZ Company. The vast majority of them practice their religion in America. All the employees interviewed consider their religion to be very important in their lives. They regularly visit their place of worship. The group that was selected for this study belonged to four different religions: Christian, Muslim, Hindu, and Sikh. These workers migrated from India, Pakistan, and Bangladesh. This study indicates that the strongest affiliation towards their religion is shown by the workers from Pakistan. S33 is from Pakistan, a Shia Muslim, and is a very staunch believer. He visits the Imambargah whenever there is an important event taking place. S23 who is a Sunni Muslim from Pakistan also informed the researcher during the interview that Islam is very important in his life. He also participates in Friday prayers that take place in a room in the assembly section of XYZ Company. S10 is another Pakistani who is a Protestant Christian and who has a very strong faith in his religion and God. He believes that after he was paralyzed it was God's miracle that he was able to completely recover and walk again. Previously he was in charge of a store. Now he performs a much lower level job of removing labels and cleaning the floor around the shipping office. However, he is satisfied and thinks that since he is a new migrant he has to face these problems and soon his life will improve. Despite his health problems he works very hard during his shift and is of the view that God will reward him one day for his dedication and sincerity towards his work. S12 who is a Sikh from India is also quite religious: he wears his traditional turban, has a beard, and observes all the religious events in Sikh religion. He is of the view that God is one and takes care of everyone. He also believes that all religions teach their followers to do good moral things in life. The workers who are the least influenced by

religion in their daily lives are the Hindus. Religion is not one of the most important things in their lives.

***Desi* Employees' Contribution towards 5Ss**

All the employees who were interviewed informed the researcher that they try to maintain 5S standards in the organization. It was noticed that at times the shipments remained on the dock for days, and some were kept without separating the part numbers. Similarly, the machine operators were responsible for keeping their work area free from oil and water and for placing all tools in their proper locations. They all realize that it is beneficial for the organization, and some of them are even willing to get more training in 5Ss to improve their skills. However, some of the workers are not interested in receiving any training since they think that they already understand how to maintain the 5S standards. Some of the workers offered new ideas to the supervisor on how to improve the 5Ss in the workplace. It was observed that some of the supervisors, like S27, personally worked with the workers to organize the service work area.

Team Work

The *desi* workers like to work in teams and understand that achieving team goals are important. They all try to maintain a good relationship with other workers and some of them consider co-workers to be like their extended family. One of the workers, S8, went out of his way to help a co-worker to complete her task so that she could leave for home on time and not miss her ride. On the weekends, team work is demonstrated when workers get together, organize the warehouse, and clean the floor.

Importance of Family

The *desi* workers' family is the focus of their lives. In their younger days, these

workers were guided by their parents on work ethics and on how to lead their lives in the society. The workers keep these principles of life close to their heart. After they migrated to the U.S.A., all their efforts were directed towards the betterment of their families. Some of them are struggling and find it difficult to meet their daily expenses; however, they do not give up and are determined to succeed.

Desi Culture

The people of the Indian Sub-Continent call migrants from India, Pakistan, and Bangladesh "*Desi.*" These *desi* workers consider themselves to be one group. In the Indian Sub-Continent people follow different religions with the majority being Hindus, followed closely by the Muslims. In 1947, when British rulers left the Indian Sub-Continent for good, India was divided into Hindu-majority India and Muslim-majority Pakistan. Pakistan consisted of East and West Pakistan, which had a distance of about 1000 miles between them. There were political differences between East and West Pakistan. Consequently, there was a civil war in East Pakistan in 1971, which resulted in the birth of a new country by the name of Bangladesh (Jalil, 2010). The Indian Sub-Continent consists of people belonging to different cultures; however, they have managed to live together for centuries. When some of these people decide to migrate, they bring along with them their culture. No doubt they adapt to some extent to their new environment; however, they try to retain the most essential values of their culture. The most prominent cultural values which came out during this research study are their desire to be respected, their respect for elders, faith in their religion, their submission to authority, their desire for cleanliness, their support for the *desi* people, their fondness to work in teams and help others, their desire to become successful, their fondness for their traditional clothing and food, and their love and support for their family.

However, there were some cultural traits that are most prominent in certain cultural groups. The interview process and the observation showed that the Indian Sikhs are very sincere people who cared for other workers, whereas the Bangladeshi Muslims only cared about their own interests. Although India and Pakistan are two countries with a long history of war, hatred, and lack of trust, the Indian Sikhs' interaction with the Pakistanis is friendly and cooperative at XYZ Company. The Sikhs are religious, have good work ethics, and demonstrate that they are proficient and hardworking people. The Indian Hindus are generally not very religious, like to keep to themselves, and do their assigned work. The researcher concluded that the Hindu workers are smart people and do their job quite well as compared to the Pakistani Muslims and Indian Sikhs who are emotional people, and can get into arguments with other workers, which disrupts the work. The researcher concluded that the Bangladeshi Muslims are religious and good at their work, because they remain focused on their assigned task, unlike workers from the Middle East who waste a lot of time by chatting with other workers. The Pakistani Muslims, as well as the Christians, are skilled and are keen to complete their task to the satisfaction of their supervisor. The most notable characteristic of the Pakistanis is their very strong faith in their religion. The women from the Indian Sub-Continent are mostly from India. The older women cannot communicate in English very well; however, the younger women can speak English very well. The older women dress in their traditional Indian dress of shalwar kamiz and some wear a dupatta (veil). The younger women wear trousers, jeans, and shirts. Unlike the elder women, they are more aggressive and ambitious to succeed. These younger women are given more responsibility than the older women. It is interesting to note that during the lunch hour, *desi*, American, Yemeni, and Mexican workers all sit on different tables. The American and

Mexican women sit with the men in their group; however, the *desi* women sit on tables separate from the *desi* men. This situation is common in Indian Sub-Continent culture, which encourages distance between the male and female gender (Desai and Andrist, 2010).
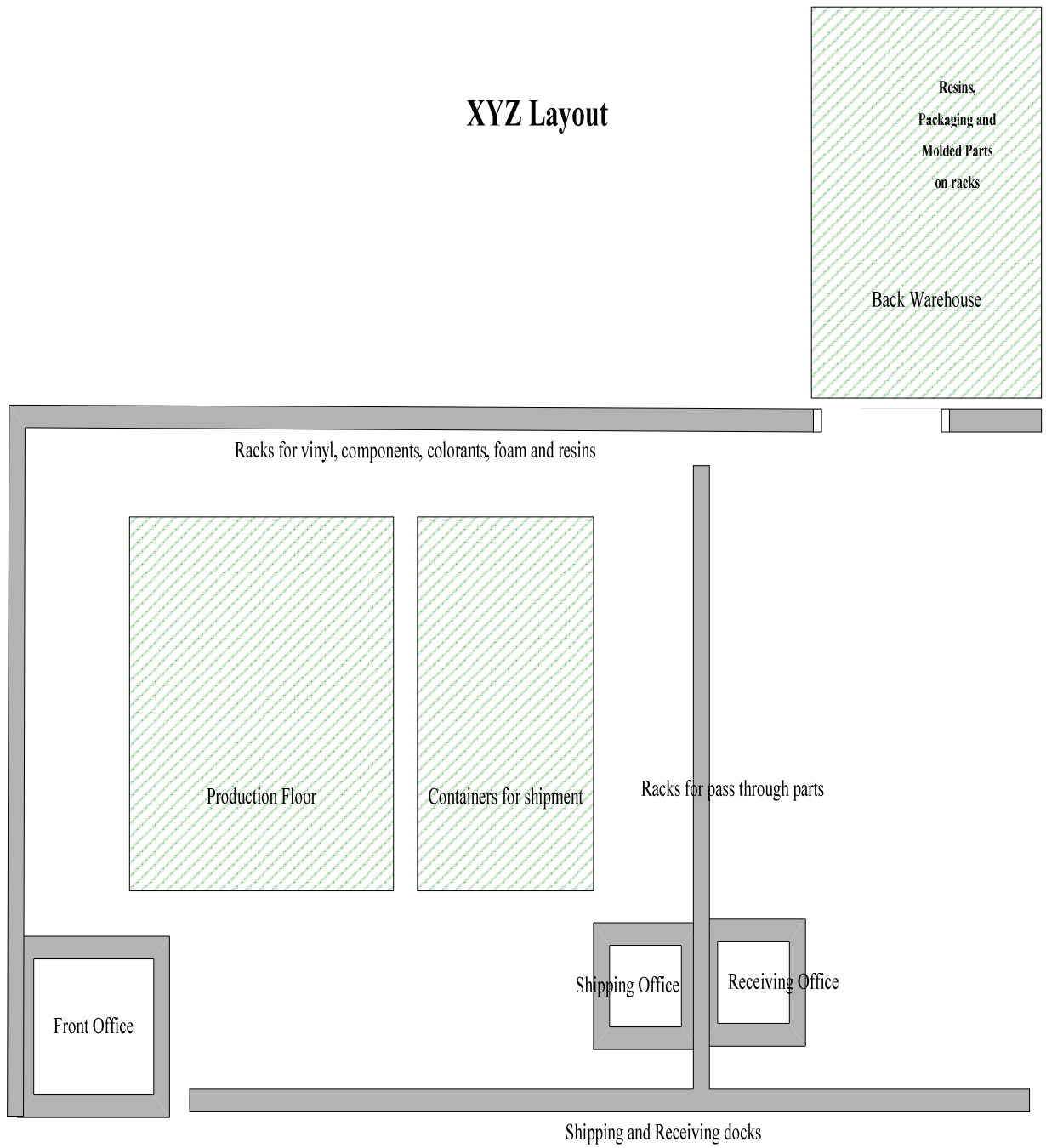
Thus, this group of workers from the Indian Sub-Continent have some characteristics in common, while others have characteristics specific to a certain country or area. In general, they are hard-working people who want to succeed in America.

Problems in Maintaining 5S Standards

In the XYZ Company, 5S standards are not maintained at the level desired by the company. The warehouse manager organizes the warehouse on weekends. The skids with mixed containers are sorted, and separate skids are made for each part number. All the skids are placed in their proper location on the racks and the racks are labeled with the different part numbers. On a few occasions, the researcher saw some *desi* hi-lo driver doing something irregular like dropping a skid in the wrong location. The driver's excuse was that he has to immediately take an empty container to the press, where they were waiting for the container. In one instance, S5 left a packaging skid in the middle of the path. The researcher informed the warehouse manager about this incident. The warehouse manager approached the worker, S5, and asked why he left the skid in the middle of the path in the back warehouse. S5 informed him that the supervisor asked him to report back to him immediately and leave whatever he was doing. The warehouse manager contacted the supervisor who verified that he had actually told S5 to come back immediately and leave whatever he was doing. Consequently, no disciplinary action was taken against S5. On numerous occasions when the material handlers informed the supervisor that they were out of clips, screws, foam, or some type of packaging, the researcher was able to find the materials. On one occasion, S6 failed

to find a particular clip for a press. The researcher found it behind some other boxes of clips. This perhaps happened because either some material handler placed this box in the wrong stack of boxes after returning it from the press or the receiving hi-lo driver neglected to separate the boxes properly when he placed them in the rack. When the researcher found S6 after some time, S6 smiled and informed him that he did not have time to search for boxes; the boxes should be kept in their proper location.

XYZ Layout

Resins,
Packaging and
Molded Parts
on racks

Back Warehouse

Racks for vinyl, components, colorants, foam and resins

Production Floor

Containers for shipment

Racks for pass through parts

Shipping Office

Receiving Office

Front Office

Shipping and Receiving docks

Figure 1. Layout of XYZ Company

On one occasion, a complete inventory of the plant was planned. To accomplish this with accuracy, the partial boxes of components were counted, resin boxes were weighed and labeled, and colorant drums were also weighed and labeled. S7 was considered an expert in identifying resin and colorants; therefore, he was assigned the job of weighing and labeling the resin and colorants. While S7 was standing near the weighing scale, another worker on a hi-lo was bringing the colorant drums and putting them on the scale. S7 was noting the weight on a label as well as its part number. After the label was put on the drum, it was placed in its correct location on the colorant rack. Another hi-lo driver was bringing resin boxes and putting them on the weighing scale. S7 again noted the weight and part number on the label and put it on the box. The resin box was then returned to the back warehouse in its correct location. This teamwork was very impressive and the whole job of labeling about 250 drums and 100 resin boxes was completed in 10 hours. S7 informed the researcher that this was a great team effort; however, he wished that this practice of weighing and labeling could continue during normal work days as well.

Hi-Lo Drivers Not Leaving the Skid in their Proper Location

It was observed that most of the hi-lo drivers who were responsible for taking skids from the receiving dock or for taking skids from the press area and placing them back in their proper location, repeatedly failed to do so. One of the main reasons that was hindering the receiving hi-lo drivers from doing this was their desire to finish the task at hand as quickly as possible because they had some other task to complete after that one. The main reason given by the hi-lo drivers of the press area was that they were under constant pressure to do things very quickly. They were feeding three or four presses, so they always had some task ahead of them. Most of the hi-lo drivers have walkie talkies with them, so the supervisor is constantly

asking them to do something which he thinks is very urgent. It causes concern when you see how hard some people work together organizing the skids on the rack and on the floor, to see it getting disorganized and scattered the following week. This is against the 5S principles and it means that the workers failed to sustain 5S standards. Most of these workers come from the Indian Sub-Continent and are eager to perform well in their jobs. However, they do feel insecure and as such are very scared to displease their supervisor or warehouse manager. S12, a hi-lo driver, did acknowledge in his interview that even if he thought his boss was wrong he had to comply. He could only suggest a different path, but he could not object. No hi-lo driver has the courage to inform his supervisor about incidents, like skids being upside down and parts scattered all over the floor. Also, no hi-lo driver points out when he sees a certain hi-lo driver creating the mess. They protect other hi-lo driver from getting into trouble. These incidents are happening because of the eagerness of the hi-lo drivers to complete their task as soon as possible or perhaps because of lack of training. These hi-lo drivers are workers from the Indian Sub-Continent as well as workers from America, Mexico, and Yemen.

Sikhs' Warm Greetings

Sikhs are from the Indian province of Punjab who like to express their feelings because they are emotional people. They like to speak the Punjabi language and when they meet a desi person they greet him very sincerely and warmly, especially if that person is from Punjab. Some of them even bow their heads slightly when they shake hands with the other person. If time allows they enquire as to how they are and show interest in each other's well-being. Although this behavior is present to some extent in other desi workers, their warmth and sincerity is generally not like that of a Sikh greeting.

Desi Women's Cleaning Habit

It was observed that the Indian Sub-Continent women operators on the press are very particular about keeping the area around their press neat and clean. After the end of their shift, they use the broom to clean the area around their press. Each morning, the janitor cleans the whole production floor with the help of a motorized cleaning cart. If there are any oil spills in the press area, the maintenance department is contacted by the supervisor, who investigates the spill, fixes the problem, and gets the area cleaned.

Desi Workers' Sense of Responsibility

The majority of the *desi* workers are behaving in a responsible manner at their workplace. It was observed that the operators immediately inform their supervisor of any anticipated material or component shortage on the press. The operators are also vigilant of any quality issues of molded parts or oil leakages. They immediately take appropriate action. Some of the hi-lo drivers also regularly inform the buyer of any possible material shortages for the presses.

Language Barrier

Since the majority of the workers at XYZ Company migrated from different countries, the company translated many of the important instructions in different languages, like Hindi, Bengali, Urdu, and Punjabi. These instructions are placed near the lunch room. Once S4, a Bangladeshi hi-lo worker, requested the researcher to translate his sentences into English for the warehouse manager. Although S4 can speak English, he was finding it extremely difficult to communicate in English exactly what he wanted to tell the warehouse manager. It was observed that *desi* men and women usually communicate with each other in Punjabi, Hindi, Urdu, Bengali, or Guajarati. This was also observed at the executive level. It

was only when they had to communicate with an American that they tried to speak in English.

Apart from the language barrier, the *desi* workers are facing quite a few challenges in maintaining 5S standards at XYZ Company. They do their utmost to perform to the satisfaction of their supervisor, completing the tasks as quickly as possible. This means sometimes that they have to compromise the 5S standards.

Religious Bond

At the XYZ Company workers came from different countries, and are following different religions. The *desis* comprise of people from the Indian Sub-Continent. The workers from India are mostly Sikh, some Hindus, and a few Muslims. The workers from Pakistan are mostly Muslims and a few Christians. The workers from Bangladesh are mostly Muslims and one is Hindu. Some of the religious events which take place at XYZ Company give these religious groups a chance to further strengthen the bond they have together. The Muslims pray the Friday prayers together in a small hall. The Muslim workers utilize their lunch time to pray on Friday afternoon. There are some religious events like Eid, Christmas, and Diwali that are celebrated by the different religious groups, by eating food together or by exchanging gifts. On such happy events, Management arranges food for all the workers and they all sit together and enjoy their meal. On such occasions, a few pages of information about the religious event are also placed on the notice board, to create awareness among people who do not belong to that particular religion. Then there are some tragic religious events like muharram, when S33 always invites his fellow Shia Muslims to majalis (religious gathering in which a sermon is given by a Shia Islamic scholar on Islamic topics as well as the tragic

events related to the battle of Karbala between Imam Hussain, who was with his companions, and forces of Yazid).

Segregation of *Desi* Men and Women

It was observed that *desi* men like to sit together in the lunch room while eating their lunch. They share their meals occasionally and enjoy chatting with each other. The *desi* women sit together during the lunch time and eat and chat. It is a very rare occasion when *desi* women sit next to *desi* men; they prefer to sit amongst their own gender. The gender segregation is one of the common cultural traits in the countries consisting of the Indian Sub-Continent. However, when these same people have to work together on the production floor they have no problem in communicating with the other gender and in completing their tasks efficiently. It was further observed that there is no religious grouping in the lunchroom, other than the fact that most of the Muslims only eat meat which was halal and some Hindus are vegetarian.

Hindu Men Focused on their Jobs

The Hindu male workers who are mostly working on the presses are very mild in nature and keep themselves out of trouble. They focus on their job, complete their eight hours of shift, and go home. Even if on rare occasions, their supervisor reprimands them, they take it in stride and keep doing their work without change in effort. Except for the Hindus, men have a deep sense of self-respect and sometimes get offended by their colleagues or their supervisor.

Preservation of *Desi* Cultural Values

The immigrant workers from the Indian Sub-Continent have been exposed to the western culture in the United States. They have adapted themselves to this new culture to

some extent, but have preserved their own cultural values. These *desi* workers have a strong religious background and often like to mention God in their discussions. They all have great respect for their elders, especially parents. They generally love their children a lot and believe that whatever they earn is for their children. Most of them still bring Indian curry from home to eat at lunchtime, although they do not mind eating pizza occasionally. In the workplace they believe that they are part of a family. S12 told the researcher that "I believe that the supervisor is the head of the family and even if we do not agree with him, we need to carry out his instructions, though we can let him know our point of view." This submissive behavior towards their supervisor is observed among all the Indian Sub-Continent workers.

Common Language Improved Productivity

At XYZ Company the workers represent many of the world's cultures and ethnicities. There are some Mexican workers, quite a few from the Middle East, some from America, and most from the Indian Sub-Continent. They all work together as a team and there are no issues about race, religion, and culture. It was further observed that, although all of them can work with each other in the organization, they feel happy and work with higher zeal and effort when they are working with a person who shares their first language, who belongs to the same place of birth, and who shares cultural values. Nevertheless, this never becomes an issue and teams are formed randomly, based solely on the task skill requirement.

Trust in *Desi*

The main theme which came out of this study was that the *desi* workers trust each other more than they trust workers from the Middle East, America, or Mexico. These workers from the Indian Sub-Continent have a common culture, although they have different religions. Since religion is personal in nature and usually does not affect others, the

difference in religion is accepted by them wholeheartedly. They greet each other on happy

occasions like Eid, Diwali, and Christmas. They confide in each other and enjoy each other's

companionship. Some Sikh's are heard saying Asalaam-a-Laikum (Muslim greeting) to their

Muslim colleagues; others out of respect for them, are heard calling *desi* people who are

older than them *Bhai* (brother), or even Uncle, or Aunty. In Urdu, when people address an

elder or someone they respect they say "Aap" and if they are talking to a younger person they

can say "Tum." Both these words mean "You" in the English language. Similarly Hindi and

Punjabi have words to address someone with respect.

All the *desi* employees can understand and speak Hindi, which makes them feel that

they are part of the same group. This trust and comradeship help them to develop very

effective and productive teams whenever these are required by the organization. Some

incidents took place which indicate that the *desi* people trust each other more than they trust

others in the XYZ Company. One day, when S12, a hi-lo driver saw the researcher, who is

also from the Indian Sub-Continent, he stopped his hi-lo and greeted the researcher. S12

informed the researcher that the materials manager left XYZ to join another organization. He

indicated that it would be better for this Company if they promote a *desi* employee to the

materials manager's position. This indicates that S12 trusts *desi* people and wants to see them

promoted in this organization. In another incident, it was observed that during inventory

taking, S7 was weighing the partial material gaylords in a team that had a *desi* buyer. S7

came in the 2nd shift, whereas the buyer had been working since the morning. So, around 6

p.m., S7 asked the buyer to go home. He would complete the weighing of the gaylords

himself with the help of another hi-lo driver. The buyer knew that S7 was a reliable person,

so he went home. In the morning when the buyer returned, he saw that all the material gaylords were weighed and labeled.

Management's Effort in Sustaining 5S Standards

During the weekly, semi-annual, and annual task to organize the wall-to-wall inventory in the warehouse, it was observed that a lot of effort went into removing unnecessary parts and materials and cleaning the whole area. However, during most subsequent working days, the situation became very poor: skids were seen placed in a disorganized way, packaging was all mixed together and scattered all over the back of the warehouse. Usually during the weekend, racks were organized. The rack for material gaylords and colorant drums had no part number labels, and the partial containers had no labels to indicate the quantity. The component boxes, instead of being in one location were found in two or three different places in the warehouse. All this led to inefficiencies and loss of valuable time and money. The lack of visibility of parts resulted in excessive ordering. On many occasions, the researcher pointed out dangerous situations to the warehouse manager: skids not properly placed on the top rack, which could have easily fallen down on an employee walking in that area. After becoming aware of the situation, the warehouse manager used to ask a hi-lo driver to take down the improperly placed skids. The plant management had been successful to some extent in maintaining 5S standards in the molding section. Their main focus was now on improving the 5S standards in the material warehouse, and for this very reason they had recently created a new position of warehouse manager.

One of the reasons for lack of success in maintaining 5S standards in the material warehouse was because the plant management did not communicate to the workers the importance of 5Ss for the organization, nor did they start any type of 5S training program. A

lean production consultant was hired who initiated on the job training for the receiving staff,

which improved the 5S standards in the materials warehouse. However, in a few months'

time the consultant had to leave the organization, after which his receiving work procedures

were not followed properly. Top management, who emphasized the importance of 5S

standards during meetings with staff, realized that they were not being maintained.

Unfortunately, no significant improvement in 5S standards materialized.

Chapter 5: Conclusion and Recommendations

This was a study of *desi* workers' efforts towards 5S implementation in an organization. This organization prides itself on supporting and employing immigrants from all over the world, especially from the Indian Sub-Continent. The overwhelming majority of workers at XYZ Company are from the Indian Sub-Continent. They get along with each other very well and can work very productively. They migrated from a very distant place to America and suffer from job insecurity; therefore they try to do their utmost to satisfy their supervisor and perform at their best. These *desi* workers have migrated from three different countries and follow different religions. Some of their characteristics can only be associated with a few of the sub-groups. Some of these observed characteristics are the warmth and sincerity of the Indian Sikhs, the complete focus on the job by the Indian Hindus, the hardworking and ambitious Bangladeshi workers, and the generally skillful and emotional Pakistani workers. Except for the Hindus, they have strong religious feelings. The Pakistani workers are the most religious and take pride in following their religion. Most of the Indian Sub-Continent workers have great respect for their elders, especially parents. Their different religions support hard work and honesty. They all try to strictly follow the orders of their supervisor and, in the process, sometimes neglect maintaining the 5S standards. However, the one thing that is common to all of them is that they want to perform well at XYZ Company and want to give 100 percent of their effort, in accordance with their culture as well as religion.

In spite of their willingness to do a good job, the materials department faced many problems and the desired 5S standards were not being maintained. In many situations, these *desi* workers were found not to be following 5S rules. However, when such incidents were

investigated, it was revealed that the workers were just following the orders of their supervisor. As discussed earlier, these workers suffer from job insecurity and do not want to displease their supervisor. Therefore, if the receiving supervisor tells them to quickly leave the skid in the back warehouse and come back and take the empty containers, the workers will do exactly that. If they think that it will take them a long time to properly place the skid in its correct location, they will just drop it at any empty space in the back warehouse and return, so that they can complete some other pending task. Such situations can be avoided if 5S standards become a plant-wide priority, with their supervisors encouraging their workers to maintain these standards at a high level. The *desi* workers can have a positive impact on the success of 5Ss because they have all the required characteristics: they are hard-working, can work in teams effectively, consider the XYZ Company to be their extended family, and they are willing to help others. However, they still need support from their supervisors.

It is clear that plant management has not communicated to the workers the benefits and importance of the 5Ss. 5Ss so far have not been implemented properly, since there were racks without labels, parts found other than in the designated place, skids having containers with different parts, in order to rectify this situation time and effort was required by the management. They have not given to the workers the 5S vision of the future, and have not provided the workers with any formal 5S training. All these factors contribute to the workers not being able to sustain the 5S standards. Lastly, change management is absent in this organization: there is no business process that coordinates and monitors all the changes that are required when implementing the 5Ss.

This research focused on the workers from the Indian Sub-Continent and how they worked in a company environment as they try to implement the 5Ss. Behavioral patterns of

the different sub-groups of this immigrant workers group from the Indian Sub-Continent were observed and recorded. This study reinforced the concept in the literature of collectivism vs. individualism. These *desi* workers support each other in the workplace and liked to work in teams. Their collectivist values can be very beneficial in the implementation of the 5Ss, because these workers are very submissive. However, management cannot expect that they contribute many new ideas.

Recommendations

The results of this research are very significant since it reveals some of the missing elements that are essential for the successful implementation of the 5Ss in an organization. The follow recommendations should be considered by companies implementing the 5Ss lean tool.

1. Supervisors should become more involved in maintaining 5Ss standards. They should encourage workers to stop any non-standard 5Ss activity in the workplace.

2. The management, supervisors and workers need to receive training by attending short lectures on 5Ss every three months. This training should remain an ongoing process to maintain the intensity of prioritizing 5Ss standards. Videos of other plants doing well in maintaining 5S standards should be shown to the workers as a benchmark.

3. The workers who are not proficient in English language should be provided the opportunity to attend short in house courses for learning the language, which will help them in understanding 5Ss instructions.

A cross-functional change management team must be formed that will be responsible for the 5S implementation process. After proper training of the workers, they will gradually start the implementation process, as suggested in the literature survey on implementation.

During this implementation process, plant management must find time to come and work alongside the workers. This will make the workers realize the importance of the job and make them more committed towards the 5S standards. This change management team must communicate to the workers how this implementation improves their job performance and also bring benefits for the organization. An audit team should also be setup to perform weekly 5S audits, and immediate action should be taken on any area of concern. The workers who follow the 5Ss must be encouraged and rewarded by management. Top Management, through town hall meetings, must regularly communicate to the employees the need for the 5Ss, the benefits the 5Ss bring to them and the organization, and the vision of its future, as the idea that 5Ss improve the working conditions and make their tasks easier. Hopefully this will encourage the workers to strictly follow the 5Ss, while they improve their productivity. It is recommended that XYZ Company provides management with a clear policy of prioritizing 5Ss and utilizing all the resources required to sustain 5S standards.

Recommendations for Future Research

This research study should be carried out in other organizations with a similar workforce to further strengthen the results and conclusions made from this study. In depth study should be done of the different cultural sub groups, like the Indian Sikhs, characteristics identified in this research.

It is also recommended that more comprehensive quantitative studies should be conducted in different industries which have implemented 5Ss, and have an immigrant worker population from the Indian Sub-Continent, so that some generalizations can be made. This will help American organizations to better utilize the services of the large immigrant population from the Indian Sub-Continent.

References

Abreu, J. M. (2001). Theory and research on stereotypes and perceptual bias: A didactic resource for multicultural counseling trainers. *The Counseling Psychologist, 29* (4), 487-512.

Achanga, P., Shehab, E., Roy, R., & Nelder, G. (2006). Critical success factors for lean implementation within SMEs. *Journal of Manufacturing Technology Management, 17*(4), 460-471. doi:10.1108/17410380610662889.

Albert, M. (2004). This shop really shines and sorts, simplifies, standardizes and sustains. *Modern machine shop*, *76*(8), 68-77.

Barraza, M. F. S., Pujol, J. R. (2012). An exploratory study of 5S: A multiple case study of multinational organizations in Mexico. *Asian Journal on Quality, 13*(1), *77-99.*

Bate, S. P. (1997). Whatever happened to Organizational Anthropology? A Review of the Field of Organizational Ethnography and Anthropological Studies. *Human Relations, 50* (9), 1147-1175.

Bayo-Moriones, J. A., Bello-Pintado, A., de Cerio, J. M. D. (2010). 5S use in manufacturing plants: Contextual factors and impact on operating performance. *International Journal of quality and Reliability Management, 27*(2), 217-230.*

Becker, J. E. (2001). Implementing 5S to promote safety & housekeeping. *American Society of Safety Engineers, Professional Safety*, *46* (8)29-31.

Bhasin, S., & Burcher, P. (2006). Lean viewed as a philosophy. *Journal of Manufacturing Technology Management, 17*, 56-67. doi:10.1108/17410380610639506.

Bonney, R. (2004). Reflections on the differences between religion and culture. *Clinical Cornerstone, 6*(1), 25-33.

Chapman, C. D. (2005). Clean house with lean 5S. *Quality Progress, 38*(6), 27-32. Retrieved

from

http://proquest.umi.com.ezproxy.emich.edu/pqdweb?did=854788191&sid=1&Fmt=4

&clientId=594&RQT=309&VName=PQD.

Churchill, J. C. J. (2005). Ethnography as Translation. *Qualitative Sociology, 28(1)*, 3-24.

Chusmir, L. H., & Koberg, C. S. (1988). Religion and attitudes toward work: A new look at

an old question, *Journal of Organizational Behavior, 9(3)*, 251-262.

Conti, R., Angelis, J., Cooper, C., Faragher, B., & Gill, C. (2006). The effects of lean

production on worker job stress. *International journal of operations & production

management, 26(9),* 1013-1038. doi:10.1108/01443570610682616.

Cox, T. H., Lobel, S. A., & McLeod, P. L. (1991). Effects of Ethnic Group Cultural

Differences on Cooperative and Competitive Behavior on a Group Task. *Academy of

Management Journal. 34(4)*, 827-847.

Creswell, J. W. (2007). Qualitative Inquiry & Research Design. London: Sage

Crute, V., Ward, Y., & Graves, A. (2003). Implementing Lean in Aerospace - Challenging

the assumptions and understanding the challenges. *Technovation, 23*, 917-928.

Dennis, P. (2007). *Lean Production Simplified*. New York, Productivity Press.

Desai, S., & Andrist, L. (2010). Gender Scripts and Age at Marriage in India. *Demography,

47 (3),* 667-687.

Drury, J., & Stott, C. (2001). Bias as a research strategy in participant observation: The case

of intergroup conflict. *Field Methods, 13 (1),* 47-67.

Dulhai, G. (2008). The 5S strategy for continuous improvement of the manufacturing

processes in autocar exhaust. *Management & Marketing, 3(4),* 115-120.

Eaton, M., & Carpenter, K. (2000). 5S for Everyone. *Control,* 17-19.

Emerson, R. M., Fretz, R. I., Shaw, L. L. (2011).Writing Ethnographic Fieldnotes. Chicago: University of Chicago Press.

Gapp, R., Fischer, R., & Kobayashi, K. (2008). Implementing 5S within a Japanese context: an integrated management system. *Management Decision, 46(4),* 565-579. doi:10.11108/00251740810865067.

Gardener, W. L., Reithel, B. J., Foley, R. T., Cogliser, C. C., & Walumbwa, F. O. (2009). Attraction to Organizational Culture Profiles: Effect of Realistic Recruitment and Vertical and Horizontal Individualism-Collectivism. *Management Communication Quarterly, 22 (3), 437-472.* doi: 10.1177/0893318908327006.

Geertz, C. (2000). The Interpretation of Cultures. New York, USA: Basic Books.

Gelders, R. (2009). Genealogy of Colonial Discourse: Hindu Traditions and the Limits of European Representation. *Comparative Studies in Society and History, 51(3)*, 563-589.

Genaldy, A. M., & Karwowski, W. (2003). Human performance in lean production environment: critical assessment and research framework. *Human factors and ergonomics in manufacturing, 13(4)*, 317-330.

Glesne, C. (2006). Becoming Qualitative researchers, an Introduction. Boston, MA: Pearson Education Inc.

Henderson, I. (2004). 5S training – the 5S housekeeping approach within Lean Manufacturing. *PHS Management Training.* Retrieved from http://www.training-management.info/5S.htm.

Hines, P., Holwe, M., & Rich, N. (2004). Learning to evolve: A review of contemporary lean

thinking. *International Journal of Operations & Production Management, 24(10),*

994-1011.

Ho, S. K., Cicmil, S., & Fung, C. K. (1995). The Japanese 5S practice and TQM training.

T*raining for Quality, 3(4),* 19-25.

Hough, R. (2008). 5S implementation methodology. *Management services, 52*(2), 44-45.

Jalil, M.A. (2010). War Crimes Trial in Bangladesh: A Real Political Vendetta. *Journal of*

Politics and Law, 3 (2), 110-120.

Karlsson, C., & Ahlstrom, P. (1996). Assessing changes towards lean production.

International Journal of Operations & Production Management, 16 (2), 24-41.

Retrieved from

http://proquest.umi.com.ezproxy.emich.edu/pqdweb?did=116359175&sid=5&Fmt=3

&clientId=594&RQT=309&VName=PQD.

Khilji, S. E., Zeidman, N., Drory, A., Tirmizi, A., & Srinivas, E. S. (2010). Crossvergence of

values: An analysis of the use of impression management strategies in India, Israel

and Pakistan. *International Business Review, 19*, 419-431.

doi:10.1016/j.ibusrev.2010.03.003.

Leal, D. L., & Hess, F. M. (1999). Survey bias on the front porch: Are all subjects

interviewed equally? *American Politics Quarterly, 27* (4), 468-487.

LeCompte, M. D & Schensul, J. J. (1999). Analyzing interpreting ethnographic data. United

States: AltaMira Press.

Lewis, J. (2002). Get organized to get lean. *Upholstery design and management, 15*(4), 28-

31.

Mascitelli, R. (2004). The lean design guidebook. Northridge, CA: Technology Perspectives.

McCuiston, V. E., Wooldridge, R. B., & Pierce, C. K. (2004). Leading the diverse workforce, profit, prospects and progress. *The leadership & organization development journal, 25* (1), 73-92. doi:10.1108/01437730410512787 .

Mohanty, R. P., Yadav, O. P., & Jain, R. (2006). Implementation of lean manufacturing principles in auto industry. *Vilakshan, XIMB Journal of Management*, 1-31.

Moore, F. (2011). Holistic ethnography: Studying the impact of multiple national identities on post- acquisition organizations. *Journal of International Business Studies, 2011*(42), 654-671.

Motwani, J. (2003). A business process change framework for examining lean manufacturing: A case study. *Industrial Management & Data Systems, 103* (5), 339-346.

Papadopoulou, T. C., & Ozbayrak, M. (2005). Leanness: Experiences from the journey to date. *Journal of Manufacturing Technology Management, 16*(7), 784-807.

Peach, C. (2006). Islam, ethnicity and South Asian religions in the London 2001 census. *Royal Geographical Society, NS (31)*, 353-370.

Probst, T. M., Carnevale, P. J., & Triandis, H. C. (1999). Cultural values in intergroup and single group social dilemmas. *Organizational Behavior and Human Decision Processes, 77* (3), 171-191.

Rao, A. (2011). Managing diversity: Impact of religion in the Indian workplace. Journal of World Business (2011), doi:10.1016/j.jwb.2011.04.010.

Rinehart, J., Huxley, C., & Robertson, D. (1998). Worker commitment and labour management relations under lean production at CAMI. *Relations Industrielles, 49*(4),

750-775. Retrieved from

http://proquest.umi.com.ezproxy.emich.edu/pqdweb?did=8955880&sid=7&Fmt=3&c

lientId=594&RQT=309&VName=PQD.

Sawhney, R., & Chason, S. (2005). Human behavior based exploratory model for successful

implementation of lean enterprises in industry. *Performance Improvement Quarterly,*

18 (2), 76-96. Retrieved from

http://proquest.umi.com.ezproxy.emich.edu/pqdweb?did=866073051&sid=1&Fmt=4

&clientId=594&RQT=309&VName=PQD.

Seidman, I. (2006). Interviewing as qualitative research. New York: Teachers College Press.

Shil, N. C. (2009). Explicating 5S: Make you productive. *Interdisciplinary Journal of*

Contemporary Research ion Business, 1(6), 33-47.

Sidani, M. Y., & Thornberry, J. (2009). The current Arab work ethic: Antecedents,

implications, and potential remedies. *Journal of Business Ethics, 91*, 35-49.

Spradley, J. P. (1979). The ethnographic interview. Orlando,United States: Harcourt Brace

Jovanovich College Publishers.

Spradley, J. P. (1980). Participant observation. United States: Thomson Learning Inc.

Triandis, H. C. (1989). Cross-cultural studies of individualism-collectivism. *Nebraska*

Symposium on Motivation: Cross-cultural perspectives, 37, 41-133.

Triandis, H. C. (1996). The psychological measurement of cultural syndromes. *American*

Psychologist, 51 (4), 407-415.

Triandis, H. C., & Gelfand, M. J. (1998). Converging measurement of horizontal and vertical

individualism and collectivism. *Journal of Personality and Social Psychology, 74*(1),

118-128.

Trimble, R., Copeland, K., MacIntyre, J., Smith, P. (2013). The use and impact of

    manufacturing productivity improvement tools and methodologies within the

    automotive component industry. *Engineering Management Research, 2*(1), 21-33.

Veza, I., Gjeldum, N., Celent, L. (2011). Lean manufacturing implementation problems in

    beverage production systems. *International Journal of Industrial Engineering and*

    Management, 2(1), 21-26.

Warwood, J., & Knowles, G. (2004). An investigation into Japanese 5-S practice in UK

    industry. *The TQM Magazine, 16,* 347-353. doi:10.1108/09544780410551287.

Wendt, H., Euwema, M. C., & Emmerick, I. J. (2009). Leadership and team cohesiveness

    across cultures, *The Leadership Quarterly, 20* (2009), 358-370. *d*oi:

    10.1016/j.leaqua.2009.03.005.

White, R. D. (1999). Managing the diverse organization: The imperative for a new

    multicultural paradigm. *Public administration & management: An interactive journal,*

    4(4), 469-493.

Worley, J. M., & Doolen, T. L. (2006). The role of communication and management support

    in a lean manufacturing implementation. *Management Decision, 44(2)*, 228-245.

    doi:10.1108/00251740610650210.

Wu, N. L., Parfenyuk, Y., Craig, A. S., Craig, M. E. (2011). Guidelines for sustaining high

    level of success when implementing lean principles in businesses: Some successful

    case summaries. *International Journal of Accounting Information Science &*

    Leadership, 4(10), 67-85.

Yanow, D. (2009). Organizational ethnography and methodological angst: Myths and

    challenges in the field. *Qualitative Research in Organizations and Management: An*

    International Journal, 4(2), 186-199.

Yanow, D. (2012). Organizational Ethnography between toolbox and world making. *Journal*

    of Organizational Ethnography, 1(1), 31-42.

Zenouzi, B. N., Dehghan, A. (2012). "Complexity theory and general model of leadership."

    Global Journal of Management and Business Research, 12(21), 46-59.

Zhang, J., Mandl, H., & Wang, E. (2010). The effect of vertical-horizontal individualism-

    collectivism on acculturation and moderating role of gender. *International Journal of*

    Intercultural Relations, 35 (2011), 124-134. doi: 10.1016/j.ijintrel.2010.09.004.

APPENDICES

Appendix A: UHSRC Approval

EASTERN MICHIGAN UNIVERSITY

Education First

February 6, 2012

To: Syed Naqvi<Name>
        School of Engineering Technology

Re: **UHSRC #110902M**   Category: Approved Modification Expedited Research Project
        Approval Date: **February 1, 2012**

Title: "Overcoming the South Asian Workers Resistance Towards Successful 5S Implementation in the Manufacturing Industry"

The Eastern Michigan University Human Subjects Review Committee (UHSRC) has completed their review of your modification for a previously approved expedited project. I am pleased to advise you that **your expedited research modification has been approved** in accordance with federal regulations.

Renewals: Expedited protocols need to be renewed annually. If the project is continuing, please submit the **Human Subjects Continuation Form** prior to the approval expiration. If the project is completed, please submit the **Human Subjects Study Completion Form** (both forms are found on the UHSRC website).

Revisions: Expedited protocols do require revisions. If changes are made to a protocol, please submit a **Human Subjects Minor Modification Form** or new **Human Subjects Approval Request Form** (if major changes) for review (see UHSRC website for forms).

Problems: If issues should arise during the conduct of the research, such as unanticipated problems, adverse events, or any problem that may increase the risk to human subjects and change the category of review, notify the UHSRC office within 24 hours. Any complaints from participants regarding the risk and benefits of the project must be reported to the UHSRC.

Follow-up: If your expedited research project is not completed and closed after three years, the UHSRC office will require a new **Human Subjects Approval Request Form** prior to approving a continuation beyond three years.

Please use the UHSRC number listed above on any forms submitted that relate to this project, or on any correspondence with the UHSRC office.

Good luck in your research. If we can be of further assistance, please contact us at 734-487-0042 or via e-mail at human.subjects@emich.edu. Thank you for your cooperation.

Sincerely,

Deb de Laski-Smith, Ph.D.
Interim Dean
Graduate School
Administrative Co-Chair
University Human Subjects Review Committee

3/3/2013 6:54 PM

Appendix B: Selected Interview Questions

1. What is your name?

2. What is your country of birth?

3. What religion do you follow?

4. How important is your religion in your life, please explain?

5. Please describe your previous work experience.

6. Which 5S activities are you following in the workplace?

7. Do you think the 5S activities are benefiting the organization?

8. Tell me about your typical day in the workplace.

9. Please explain if you have offered any ideas to the supervisor for improvement in some process of your daily 5S activities.

10. Do you think that you need more training to effectively follow 5S activities?

11. Please explain if you have been involved in any team work during your employment in this organization, and how you have contributed towards the team's goals?

12. Do you help other workers when they need your help, give some examples?

13. How would you describe your relationships in the workplace?

14. Tell me about your family background and who influenced you?