

QUALITY CONTROL PRACTICES IN FURNITURE INDUSTRY: BIDIN BIN JASIN SDN BHD CASE STUDY

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ABSTRACT

This paper presents a case study of Bidin Bin Jasin Sdn Bhd (BBJSB), which is one of Small and Medium Enterprises (SME) in Kangar, Perlis. The company produces various products of furniture such as furniture set home, school furniture and so on. The research aims to investigate quality control practices on the furniture industry of BBJSB. In this research, data is collected through interview distributed internally stipulating issues and problems of quality control in identifying productivity level, waste elimination practices, customer requirements and satisfaction of quality control practices. From this study, we able to determine problems that faced by the organization in quality aspect and the methods used by organization in solving these problem. Moreover, expectation of this study was to provide a proper and suitable method help in improving the quality control use in the manufacturing organization. It is a suggestion that the findings could contribute towards greater understanding in view of the furniture industry. This research is also a suggestion to provide good insights on managerial applications.

Keywords: Quality control practices, furniture industry, productivity, elimination of waste, customer requirements and satisfaction

INTRODUCTION

There are more than 3500 furniture manufacturers in Malaysia (MATRADE, 2015). According to the report, we found that most of the furniture industry in this country is mostly predominated by Small and Medium Enterprises (SME). Bidin Bin Jasin Sdn Bhd (BBJSB) is one of the SME furniture manufacturers in Malaysia which is located in Kangar, Perlis. BBJSB was established in 1989 by Mr. Bidin Bin Jasin. This company is also one of the largest Bumiputera furniture groupings undertaking in Northern Malaysia. The company has a workforce of 20 people and includes multi-level management and professional, skilled and unskilled labor and contract employees. The company also has a license that allows indigenous class financial companies to enter into any project worth RM 3500 000.00. BBJSB produced the wood based furniture which includes school furniture, cushion set, bedroom set, eating set, wall cabinet, office cabinet and cabinet set.

In a competitive and globalization environment, good quality product or services become the pillar of sustainable. Thus, most companies apply quality control or quality assurance.

Quality control as defined by Ishikawa is consists of developing, designing, producing, marketing and servicing products and services with optimum cost-effectiveness and usefulness, which customers will purchase with satisfaction. To achieve these aims, all the separate parts of a company must work together. Quality control is needed and important for BBJSB because this can help the company to eliminate the wood waste in order to increase high level of productivity. Quality control in BBJSB can help the company to control and maintain the quality of the product to satisfy customer requirement and increase sales. In this paper, we investigate the quality control practices in BBJSB.

ISSUES AND PROBLEMS

Most of the furniture manufacturing industry is under tremendous pressure on problems and issues by using quality control practice in the industry. From the response of the manufacturers, it was found that the main problem faced in using quality control practice is many and complicated production lines in the company. Bidin bin Jasin Sdn Bhd (BBJSB) involved a lot of complicated steps for making furniture. During the process, is hard to monitor the work by worker, quality of work might not be meet the standard operating process. A systematic approach to furniture design is not appropriate, as design changes are often made to suit the potential buyer's taste and requirement, which may go against the principles of standardization as advocated by the ISO 9000 quality management system (Goetsch and Davis, 1998). Secondly, the company also face quality control issue of lack of inspection on working process. BBJSB is a lack of in line or in process inspection during production. This is because the products do not inspect for conformity before proceeding to the next production line.

Thirdly, poor manufacturing planning and control also one of the quality control issue in the company. Waste of material may occur in the company is due to the lack of manufacturing planning and control to determine the actual quantities and size for making furniture. As reported by Ioannis J. Papadopoulos¹, Michalis Scarvelis¹, George A. Ntalos¹ (2009), one of the most important factors that influence the production cost of furniture products seems to be the percentage of the raw material wastes, which ranges between 10-30% (average 20.8%). Fourthly, the outdated technology used in the company will affect the quality control in the company. In the BBJSB, they are using the manual and semi-auto machine in their production line. By using the outdated technology, the rate of defect is high due to the ability of the machine to maintain the standard is low. With processes such as assembly and finishing notoriously difficult to automate, the furniture industry, in general, is not known for highly advanced manufacturing technology — the level is 'reasonable but not overwhelming' (Vickery et al., 1994).

Lastly, lack of skilled workers is big quality control issues face in the company. Workers in BBJSB are a lack of the skill such as cutting and assembling during making furniture. It will be causing the waste when the products are not meet the requirement that set by the company. The generally low percentage of Greek furniture export in countries that demand a high-quality standard has as the reason the lack of staff with qualifications and conscience needed for products' quality (Ioannis J. Papadopoulos¹, Michalis Scarvelis¹, George A. Ntalos¹, 2009).

LITERATURE REVIEW

A high-quality product does what its customers want in such a way that they actually use the product (Bbcouk, 2015). Meanwhile, quality control is a process which a business seeks to ensure that product quality is maintained or improved and manufacturing errors are reduced or eliminated. Moreover, making sure the products or services meet or exceed the requirements set forth allows a business to be more successful and improve the organization (Sixsigmaonlineorg, 2009). Besides, there are few barriers to applying quality control in a company which is a lack of appropriate training, lack of management commitment, insufficiency of resources and lack of priority of improving the quality.

Variables involved in the study

In this study, three variables had figured out under quality control practices which are degree of productivity, customer requirement and satisfaction, and elimination of waste.

(i) Degree of productivity improvement through quality control practices

National Research (1979) defined to productivity can be measured in terms of level and rates of change. Generally, productivity can be studied at four levels: site/project, firm/organization, and industry and the entire economy. Because productivity measures exist largely to be compared, people are more interested in productivity change. In quality control, measurement of productivity needs to consider various inputs and outputs of the products or services produced to be adequate and appropriate.

(i) Customer requirement and satisfaction through quality control practices

Measurement of customers requirement and satisfaction allow business to 1) know how well the business process is working 2) know where to make changes to create improvement, if changes are needed; 3) determine if the changes led to improvement. In today's competitive business environment, marketing managers are more influenced from customer expectation and meeting the demand for customer satisfaction is very important for them. Therefore, customer satisfaction could not be defined only standard or quality of the product (Emrah cengiz, 2010).

(ii) Elimination of waste through quality control practices

Waste is any activities which not have value or involve cost on the product without adding value. Waste is based on the seven forms defined by (Ohno, 1988) that is overproduction, motion, waiting time, transport, process time, defect and inventory, whereas Total Quality Management (TQM) has a very general definition of poor quality costs, including everything that could be eliminated through improvement (Sorqvist, 1998).

METHODOLOGY

This study employs a qualitative study approach through an interview with key personnel, a survey among the employees, observation, and desktop review. The analysis was done by with an assistant of thematic technique which categorize keyword identify into perspective.

The data collection process was done within the two weeks on 3 November 2015, 2 pm at the company of with Bidin Bin Jasin Sdn Bhd (BBJSB), we done the interview with two respondents which are Mrs. Zainun Binti Bidin and Mr. Zaharin Bin Bidin. In the first section, Mrs. Zainun Binti Bidin brings us to the workplace and explaining in the aspect of action so that we can understand more detail. Through the observation process, we took a picture on how they managing their quality in operations. On the second section, we had done our interview question with Mr. Zaharin Bin Bidin in the office room around 2 hours.

FINDINGS

From the observation and interview done with Bidin Bin Jasin Sdn Bhd (BBJSB), we found out there are several quality perspective that occur in the company. There are as follow:

a) Quality perspective

i. Leadership

The aim of company Bidin Bin Jasin Sdn Bhd (BBJSB) is to produce high-quality furniture to meet the needs of the customer. The company has their quality team which show at figure 1. The improvement of the company is depending on the quality of its leadership.

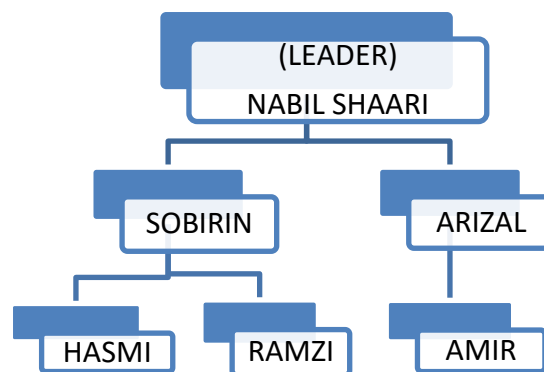


Figure 1: Quality Team Structure

ii. Involvement everyone

BBJSB very emphasize the involvement of the employee for the process change. This company ensures everyone is involved in the organization activity by communicating with them regularly. The managers also give employees involve in decision making and give suggestions related to the work environment or improvement of the job. This is because employees are in a great position and focus in production and can identify the problems easily. Employees have the knowledge on the process then can make corrective action immediately.

iii. Continuous improvement

The aim use of the continuous quality improvement in BBJSB is to better business processes which changing them to reduce defects of products and improve quality. BBJSB used the about 60% of the best popular methodologies of continuous

improvement which called **kaizen**. The Kaizan-5s is used for the company which are SEIRI (sorting), SEITON (systematic arrangement), SEISO (shining), SEIKETSU (standardizing), SHITSUKE (sustaining).

Moreover, the company applies the kaizen management which organized the five golden rules inside the production lines:

- a. When the problem first occurs, go to the real place of employee works where the added value indeed (*GEMBA*)
- b. Check the unconformable physical or touchable element (out of order equipment like machine) (*GEMBUTSU*)
- c. Take temporary measure on spot of the problems
- d. Find the main cause (use the 4W1H questions)
- e. Standardize to prevent reoccurrence

Moreover, the company is planning to do for 100% specific kaizen content use in the production working process in future to continuous improvement.

iv. Process focus

In order to fulfill the requirement, the company focused on the production process that can ensure they have the ability to produce the furniture at a specific time. Figure 2 show the flow chart of mostly products furniture produces in BBJSB. However, a there are a different design and different amount of furniture that acquired from the main customers which is Ministry of Education Malaysia so that the company has to rearrange the layout in the production line and change the production plan to meet the customer's requirement.

In every workstation, a standard is given for workers to follow the instruction of processing the materials. All the materials must be meeting the specification of products that acquired from the customer. All the process must be fast and move smoothly to eliminate.

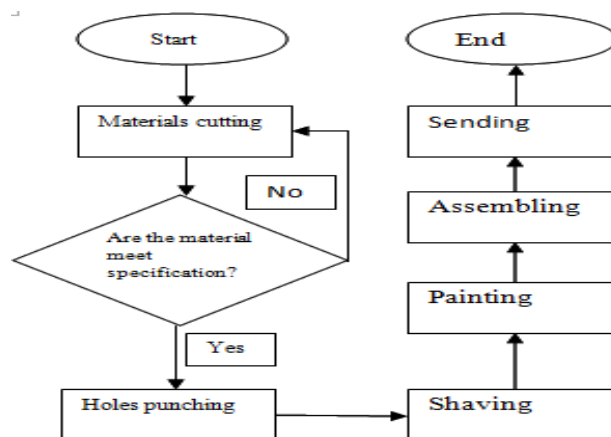


Figure 2: Process flow chart

b) Quality problems

a. The degree of productivity

(i) Human factor

Productivity in this company decreases when there are lacks of information for the sequence of new furniture processing which show in figure 3. Poorly skilled and trained employee for the new machine will cause the performance. Employees who are highly motivated in BBJSB will have a great impact on the productivity.

(i) Process factor

Complicated steps in the process will slow down the progress to produce furniture in the certain times which show in figure 3. There are complicated in the arrangement of layout in the site and it causes the distance between workstations occur and decrease the output in the certain time.

(ii) Technology factor

The company mostly use the manual machine to produce their product. It increases the lead time of the machine to completed and it will lead to the high waiting time of the next workstation for continue proceed which show in figure 3.

(iii) Future factor

In future, the company will plan to have more sophisticated technology which is more focus on fully auto machine use in the production line to increase sales and orders which show in figure 3. A worker with full and updated training can also help to increase quality control on the products produce. Workers always depend on their mood to do works, so the company has a planning to give more motivation to the workers on their working performance to increase their productivity.

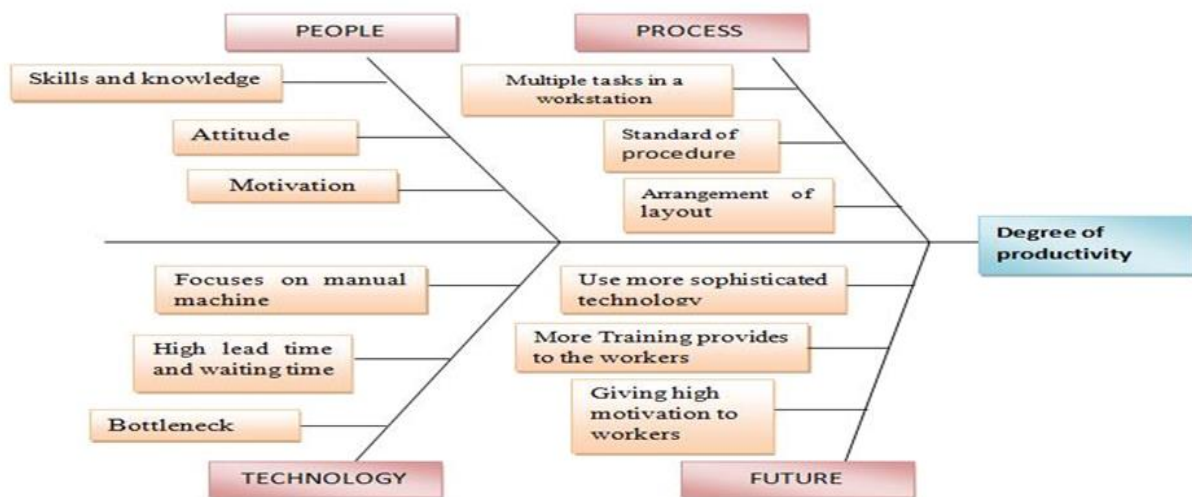


Figure 3: Fishbone diagram of degree of productivity

b. Customer requirement and satisfaction

(ii) Human factor

Employees in this company will provide friendly personal service to understand the customer requirement for the furniture product and improve the customer satisfaction which show in figure 4. The company can know the preferences and dissatisfaction of the customers by formal and informal communication.

(iii) Process factor

There was not doing an exactly inspection on the materials before processing the materials until transformed to the actual output which show in figure 4. After received complaints from the customer, the company needs to take back the products and rework to meet customer requirements.

(iv) Technology factor

Due to the manual machine, maintenance will be done when it breakdown compared to the automated machine that have monthly or constant maintenance which show in figure 4. The component is scrapped due to machine breakdown. The appearance, color, feature and other of the component may be affected little bit when a company reduces the reject rate and this will lead to low customer satisfaction.

(v) Future factor

The company always make sure their customers satisfy on the products produce in term of quality, after sales service, reasonable price, and on-time delivery which show in figure 4. The promote technique need to improve in future are- catalog, newspaper, flyer, road show, website and FB, referral, magazine, broacher, Bonner, strategy alliance, networking, display.

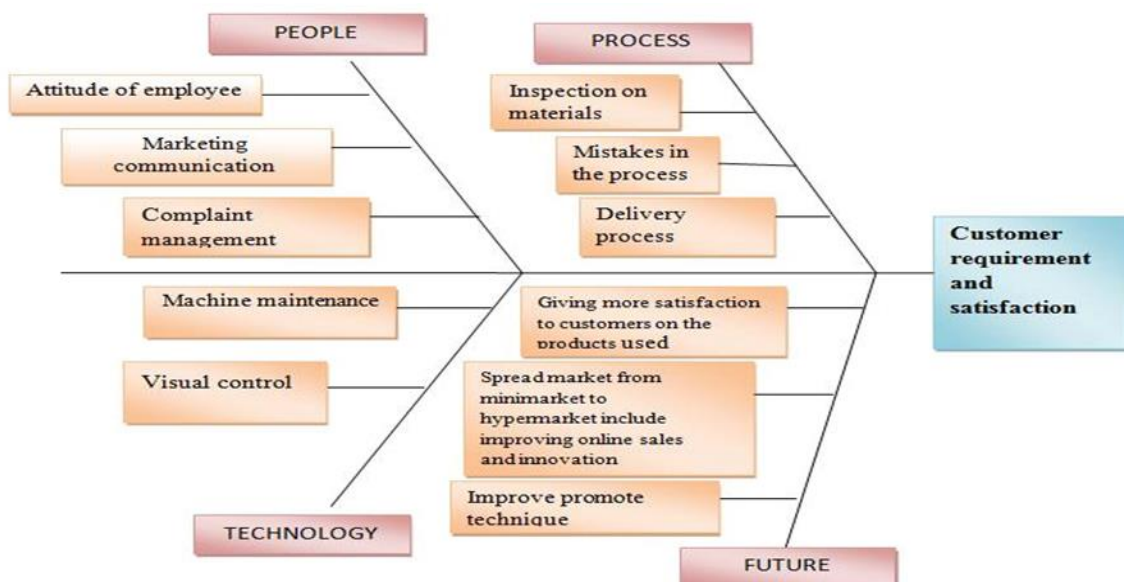


Figure 4: Fishbone diagram of customer requirement and satisfaction

c. Elimination of waste

(i) Human factor

Bidin Bin Jasin Sdn Bhd (BBJSB) has a poor planning of control for the furniture product which show in figure 5. Therefore, the company will produce a number of furniture products than needed. Some operators in BBJSB are a lack of technical skill. The defect will occur when a work is incomplete or incorrect. Therefore, the company will rework for the defect furniture parts.

(i) Process factor

The materials that don't meet the specification set by the company will not be used so it causes the waste happen in the workplace which show in figure 5. After the materials had processed in the workstation, it doesn't put at the proper place. Workers might confuse when unprocessed and processed materials put together and it may cause repeating of work that waste of time and increasing cost.

(ii) Technology factor

The scrap also can happen due to the improper machine adjustment or improper maintenance which show in figure 5. If the scrap is rejected, it will accumulate became waste and the elimination of waste will be low. When a bottleneck occurs, it has created waste in the aspect of waiting time waste and inventory waste where the workstation accumulated inventory that have been completed by the previous workstation (station A).

(iii) Future factor

The fully auto machine plan to be fully used in the company to replace the manual works and updated software aim to produce high-quality products with a less waste produced which show in figure 5. For example, CNC programming software will use to reduce the waste from the products produce and less redo defect products appear. Continuous improvement in the production process line can help eliminate the waste in the area.

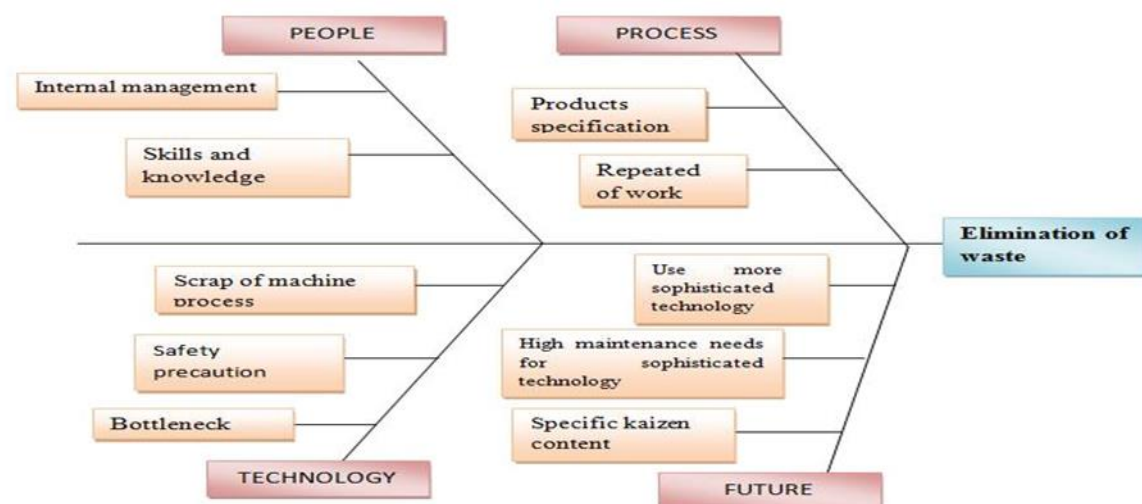


Figure 5: Fishbone diagram of elimination of waste

CONCLUSION

Through the interview and observation in company Bidin Bin Jasin Sdn Bhd (BBJSB), we have seen there have managed well the quality perspective in their company that reflected in 4 aspects that are leadership, involvement everyone, continuous improvement, and process focus. However, from the interview and observation in the company, we acknowledge there was some obstacle that prevents the company from improving. Thus, we adopted three fishbone diagram that able to view more detail to show some quality problem (people, process, technology, and future) that occurred which will lead to the influence of degree productivity, customer requirement satisfaction and eliminate waste. Thus, we can identify deeper how the quality problem affects the degree productivity, customer requirement satisfaction and eliminate waste. As a conclusion, quality control practice in company BBJSB is not utilized completely where there is some quality problem occurred. Hence, continuous assessment needs to be progress so that the quality control practice can be improved even better than before.

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