

QUALITY IMPROVEMENT IN THE FOOTWEAR COMPANY

VALENTINA BULGARU, DANIELA CIOBANU, MARINA MALCOCI

Technical University of Moldova, valentinabulgaru@gmail.com

Quality is the key factor in ensuring the competitiveness of an enterprise. In the footwear industry of Moldova there are about 50 enterprises producing shoes for both internal and external market mainly in the LOHN system. This paper shows the results of the case study regarding some aspects related to the footwear quality production at the "Zorile" S.A. based on analysis of data recorded at the final inspection. The Pareto and Ishikawa charts are tools that facilitate analysis and enable the elaboration of offers to improve the existing situation. Based on the actual situation of the footwear quality in the enterprise it is recommended improve the quality of processes and products through the implementation of actions aimed to remove the underlying causes identified and relate to: professional training of workers provided by the employment of graduates and the organization of continuous training; staff motivation by increasing their remuneration accounted from salary supplements for the quality and ensuring the professional growth, organizing the activities in such a way that the employee be able to meet the standard of work produced by staff to improve recognition of the company in terms of continuous improvement quality; revision of the rules of time; organizing activities to prevent occurrence of nonconformities by continuous ensuring with materials needed for technological operations; implementation of new technologies that would require organic substances, total or partial mechanization; providing a favorable work environment, proper lighting, ventilation, workplace policy, workplace convenience.

Keywords: footwear, quality, defects.

INTRODUCTION

Due to the rising competition, operators face with the problem of maintaining the existing customers and also of gaining new customers, along with the need to achieve a certain minimum level of business efficiency. So far, the quality is considered a strategic element of enterprise management, with an important role in increasing the competitiveness of products and services both domestically and internationally.

Quality products are of special importance for the society with favorable effects in all areas of economic activity, but the quality requires continuous improvement. There is no permanent level of quality and the continuous improvement strategy, known as the japanese KAIZEN strategy or the "small steps", directs the efforts of employees to achieve the highest quality levels by increasing the number of quality parameters and always comparing the competition products and the customers' demands.

Continuous quality improvement can be facilitated by the implementation and enhancement of the quality management principles underlying the quality management systems ISO 9000 series standards: focus on the customer, leadership, involvement of people, process approach, system approach, making decisions based on facts and mutually beneficial relationships with suppliers (SR EN ISO 9000, 2001). But compliance is impossible in organizations where management is oriented towards results and immediate profit (, 2009). Quality and continuous improvement planning should be carried out by trained specialists in quality management (Juran, 2000), which enterprises under the staff turnover is high, it becomes a problem.

QUALITY MANAGEMENT IN THE FOOTWEAR COMPANY S.A."ZORILE"

The S. A. "Zorile" enterprise is the first large company of footwear production in Moldova founded in 1945. In 2009 "Zorile" has released a new enterprise development program according to which was possible the brand "Zorile" restyling, and was created a network of 25 stores focusing on the modern footwear industry. Currently the company aims to achieve a ratio of 40/60 between the own production and the production activities for foreign companies in the lohn system, and to include a local market share of 10% and sales to ensure a level of 400.000 pairs per year of own footwear products.

Product quality is ensured primarily through emphasis on detailed control over all phases of the production cycle: self-control and chain control made by each operator; fixed control made by quality controllers and scutch control made by the foreman, technologist and head of department (Ionescu, 2001; Ionescu, 2002). The "quality" operation is coordinated by the head of the "physical and mechanical testing laboratory and flow control" subdivision, relying on the provisions of the enterprise standard from 02.11.97 called "The complex system of quality control". According to this embodiment, the responsibility lies with each sector of the company, which offers efficiency in taking the necessary measures to address the identified problems.

CASE STUDY

In a case study there were analyzed the defects identified and recorded by the controller during three months at final inspection (table 1).

Table 1. The identified defects in footwear quality control, S.A."Zorile"

No.	Type of defect	I-st month	II-nd month	III-rd month	Total
0	1	2	3	4	5
1	Vamp sewn incorrectly	18	-	-	18
2	Defectiv enging stitch	17	37	45	99
3	Non-parallel stitch	15	-	-	15
4	Stitching turned 180 ° poor	10	-	-	10
5	Inappropriate manual stitch	6	281	5	292
6	Improprer upper assembly	5	-	-	5
7	Inappropriate sewing of tack	2	-	34	36
8	Improper incasing and decorative fixing	25	-	37	62
9	Exces of uncut lining	55	-	67	122
10	Improper footwear preforming	-	-	93	93
11	Improper lasting of shoes in the tip region	62	65	-	127
12	Improper lasting of shoes in the heel region	15	64	43	122
13	Height caramba different pair	-	-	113	113
14	Holes made provisional elements	12	-	12	24
15	Improper strobel stitch	-	4	10	14
16	Defects stitch the sole to the upper assembly	147	83	202	432
17	Inappropriate refoot (sole) of footwear	53	85	283	421

No.	Type of defect	I-st month	II-nd month	III-rd month	Total
0	1	2	3	4	5
18	Leather defects after dryer procesing	23	-	417	467
19	Improper shoe cleaning	258	461	444	1136
20	Unremoved threads	208	151	142	501
21	Improper application of insole	-	-	59	59
	Total	931	1231	2001	4163

The analysis performed using a Pareto diagram (figure 1-3) showed that in all three months the defect - inadequate shoe cleaning (quantitatively ranked) was first placed, followed by uncut threads in the first month and leather defects after processing with dryer in the 3rd month.

Spot observations and the analysis of the results of a survey performed in the company allowed the development of the Ishikawa diagram, showing the causes of occurrence of the most frequent defect (fig. 4). The opinions of 20 workers directly from station No. 2, on the causes of the occurrence of nonconformities identified quality control footwear products were as follows: 37% is accounted for carelessness or irresponsibility workers, 22% - use of unsuitable materials, 19% - working method implemented, 11% - the machine used, 7% - incorrect measurements and 7% - work environment.

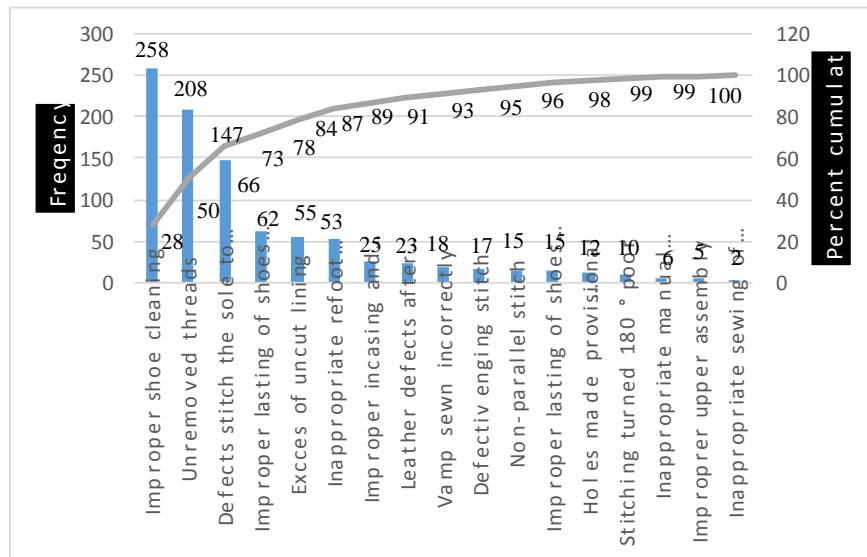


Figure 1. Pareto diagram – 1st month

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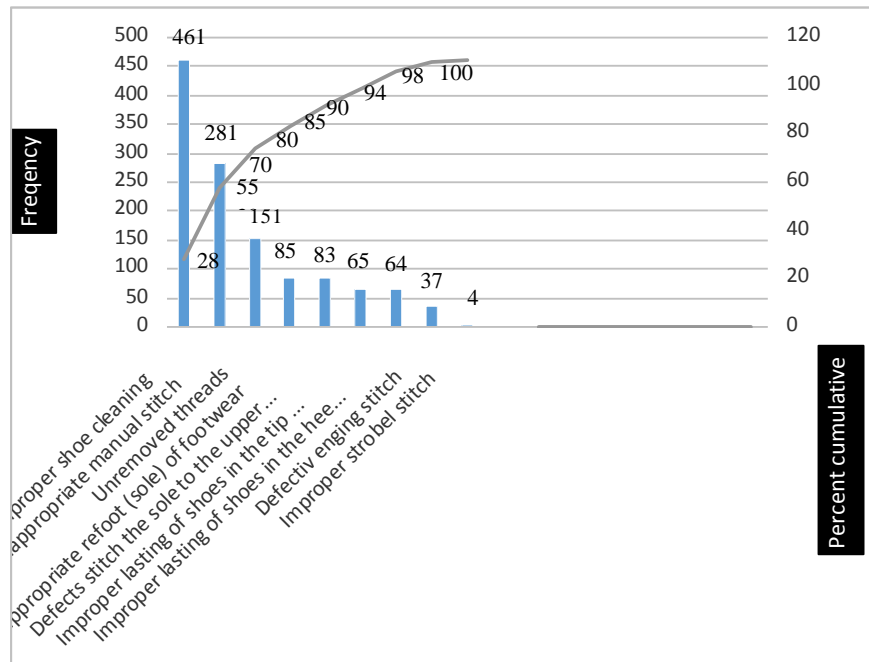


Figure 2. Pareto diagram IInd month

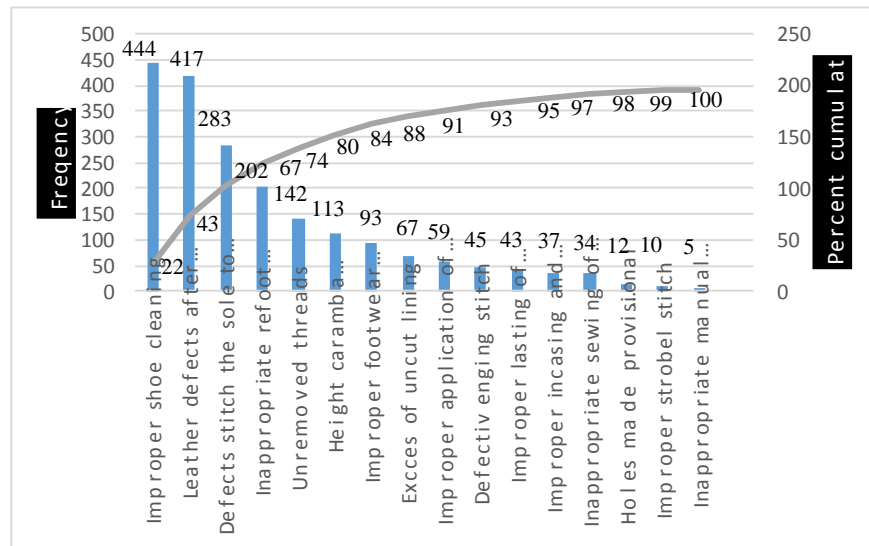


Figure 3. Pareto diagram IIIrd month

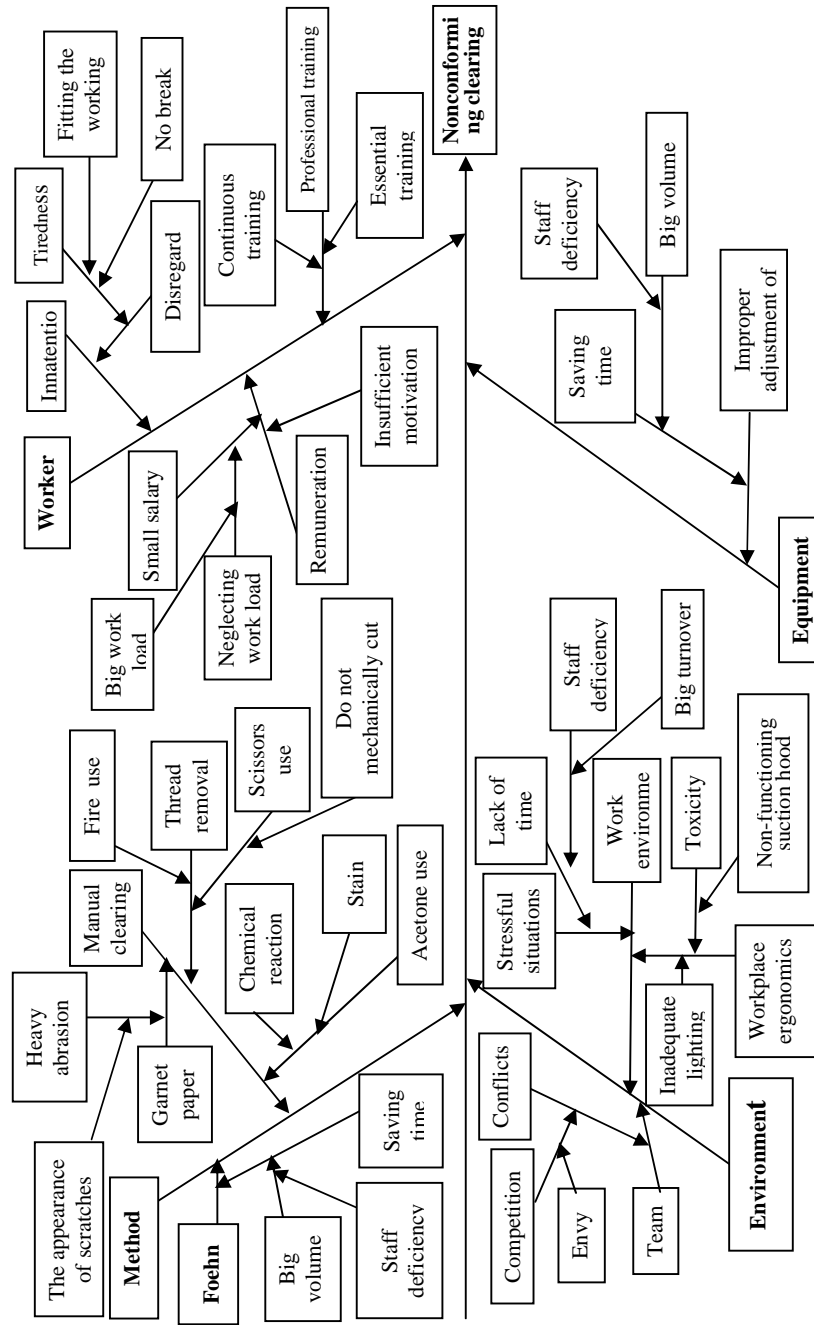


Figure 4. Ishikawa diagram for nonconforming clearing defect

It is noted that since 2011 S. A. “Zorile” implemented a motivating remuneration of quality controllers. It provides a structured remuneration of two components: the constant part that is 45% of salary and the floating part of 55%. The principle of granting the floating part is as follows: in the absence of comments on the product quality and finding that the volume rebut is less than 0,5% from floating part than it is given in full; if the rebut is 0,5 to 1,0% then the floating part is reduced by 25%; if the rebut is 1,1% to 1,5% then the floating part is reduced by 50% and in case the rebut is more than 1,5% then it is not granted. It was also planned work rotation for quality controllers, but due to their large fluctuation, the procedure is performed sluggishly.

RECOMMENDATIONS FOR QUALITY IMPROVEMENT

Based on the actual situation of the footwear quality in the enterprise “Zorile” it is recommended improve the quality of processes and products through the implementation of actions aimed to remove the underlying causes identified and relate to:

- professional training of workers provided by the employment of graduates and the organization of continuous training (Ciobanu, 2009; Kobayashi, 2001);
- staff motivation by increasing their remuneration accounted from salary supplements for the quality and ensuring the professional growth, organizing the activities in such a way that the employee be able to meet the standard of work produced by staff to improve recognition of the company in terms of continuous improvement quality;
- revision of the rules of time;
- organizing activities to prevent occurrence of nonconformities by continuous ensuring with materials needed for technological operations;
- implementation of new technologies that would require organic substances, total or partial mechanization;
- providing a favorable work environment, proper lighting, ventilation, workplace policy, workplace convenience.

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