

EMPLOYEES SATISFACTION IN CHOSEN METALLURGICAL COMPANY AS AN ELEMENT INFLUENCING QUALITY OF FINISHED PRODUCTS

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Abstract

Employees are one of the most important resources of the metallurgical companies. They bring to the company their education, knowledge, skills, their experience. The success of the company, the achievement of predetermined targets depend on their work. The quality of the ribbed bars produced by research rolling mill depends not only on the used materials, production technology, but above all on the employees work. These employees prepare material for rolling, set the parameters of individual rolling machines, are involved in the rolling process and prepare bars for shipment to customers. Recipients of these bars demand that they have high strength and toughness, corrosion resistance, good weld ability and high fatigue resistance. The effectiveness of employees work depends on ways of motivation, relationship with supervisor, knowledge of their responsibilities, their duties, the adequate salary, so on their job satisfaction. That is why it is important to assess this satisfaction. The aim of the paper is to assess the job satisfaction of the employees of chosen rolling mill of the Polish steelwork with use of survey which was created for this purpose. This survey is part of a larger research, consisting of employees' job satisfaction and evaluation of their superiors. It allowed to indicate which elements associated with their work respondents assessed as satisfied and which they would like to change.

Keywords: Job satisfaction, employees, metallurgical industry, rolling mill, ribbed bars

1. INTRODUCTION

One of the most important resources of the metallurgical industry company is its staff. People are involved in all processes that are carried out in the company. They bring to the company their education, skills, their experience. And for their work they receive appropriate gratification (salary). All companies set appropriate goals, which include customer satisfaction and development of adequate profit. It is the work of employees that determines the success of the company, the achievement of these goals and quality of products.

We should remember that high quality especially in case of rolled products is very important. Employees also create a culture of a company, its atmosphere [1]. Psychology and intuition prove that a happy, satisfied employee is more effective and creative in his work. The effectiveness of his work depends on the ways of motivation, relationship with supervisor, knowledge of his responsibilities, the relevant salary, but primarily exactly on his job satisfaction. According to Locke [2] job satisfaction we can define as "a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences. Lack of job satisfaction is related to, among others, higher rates of absenteeism [3-4], higher staff rotation [5], decrease of loyalty to the organization [6], decreased quality of products provided by the company [7]. Employees dissatisfied with the work much more frequently present antisocial behavior such as prone to fights or theft. People with a high level of satisfaction, however, are social, willing to help [8]. It is therefore important to assess the job satisfaction of own employees and try to improve it.

Together with the emerging investment and building highways, modern building shows huge demand among of ribbed bars for concrete reinforcement. That is why the increase of production of this product was observed

in Poland and in the whole world. It is necessary to remember that the ribbed reinforcement bars have to fulfill all requirements included in appropriate technical standards and required by customers. The concrete construction reinforced with these ribbed bars allow for significant savings in steel, aggregates, cement, wood and shorten construction time. The ribbed bars in reinforced concrete structures provide a better grip concrete reinforcement due to special shape, in which a round core are marked humps (ribs). Recipients of these bars demand that they have high strength and toughness, corrosion resistance, good weld ability and high fatigue resistance. The quality of the ribbed bars depends not only on the used materials, production technology, but above all on the employees work. These employees prepare material for rolling, set the parameters of individual rolling machines, are involved in the rolling process and prepare bars for shipment to customers. The quality of their work depend on the motivation and job satisfaction. Therefore, the positive and negative aspects of working in the chosen rolling mill should be identify in order to be able to determine whether a change in the management and motivation of employees of the research rolling mill is needed.

The aim of the paper is to assess the job satisfaction of the employees of chosen rolling mill of the Polish steelwork with use of the survey which was created for this purpose. This survey is a part of a larger research, consisting of employees' job satisfaction and evaluation of their superiors. It allowed to indicate which elements associated with their work respondents assessed as satisfied and which they would like to change.

2. CRM IN METALLURGICAL ENTERPRISES

Employees satisfaction affects the effectiveness and efficiency of their work, and thus the quality of the finished products. This is especially important in the case of the metallurgical industry. Customers require that the metallurgical products, which they buy, meet different requirements such as right dimension, surface quality, chemical composition, and thus an appropriate micro-structure. It should be remembered that these products must also meet all the quality requirements of the relevant technical standards which are in force in Poland and countries where they are sold. Very often their quality has an influence on human health and life, as these products are often used in further production processes.

One of the tools used in the analysis of customer satisfaction in metallurgical industry, and thus the quality of metallurgical products, is a Customer Relationship Management (CRM). This tool is an approach to managing a company's interaction with current and potential future customers. The CRM approach tries to analyse data about customers' history with a company, to improve business relationships with customers, specifically focusing on customer retention, and ultimately to drive sales growth. The purpose of this system is the analysis of data on co-operation with customers in order to adjust the company's offer to the expectations of the market, as well as systematic and consistent collection of data on the absorbency of the market, competition and the current market conditions.

CRM technology allows firms to collect and manage large amounts of customer data and then carry out strategies based on that information. Data collected through focused CRM initiatives help firms solve specific problems throughout their customer relationship cycle, the chain of activities from the initial targeting of customers to efforts to win them back for more [9].

CRM system used by well-trained employees in the metallurgical enterprises gives: a shorter sales cycle, reduction in administrative costs, the impact on reporting and faster delivery time, increase in sales and improvement of the customer retention. Consequently, CRM system allows the metallurgical enterprises to increase revenue by capturing new customers, retain existing, and it is all thanks to better management of their business.

3. METHODOLOGY

The research presented in this paper was a part of the survey, which was conducted among employees of the rolling mill of the chosen steelworks in Poland.

The survey concerned the employees' job satisfaction and an additional part of this survey was the superiors' assessment.

The survey was already conducted in several metallurgical companies and their results presented to management [10]. With the survey they obtained an opinion about the working conditions in their metallurgical companies, and at the same time they learned what conditions their employees would like to change. The presented survey is a universal tool, but very useful in the metallurgical industry. During the restructuring of individual metallurgical sector, one of the most important changes was the restructuring of employment. This is a very difficult subject for employees, as associated with redundancies in the sector. This meant an unstable employment situation of employees who still worked. So the employees in the metallurgical sector were very afraid for their jobs, which often adversely affect their work performance. Therefore, assessment of their current job satisfaction is so important.

In the part devoted the job satisfaction, the respondents were asked to assess 20 statements about their work in the research rolling mill. In **Table 1** all 20 statements describing employees' job satisfaction were presented. The seven-point Likert scale, which was used in the survey, has following meaning 1 - "I totally disagree" and 7 - "I totally agree" [11]. An important element of the research was a fact that this research was not carried out by the managers of the rolling mill. So respondents felt more confident about the anonymity of the survey and felt more comfortable in completing the survey.

Table 1 Statements of the survey on job satisfaction in the research rolling mill [10]

No	Statement
1.	Form of employment is satisfying.
2.	Current level of salary is satisfying.
3.	Social package offered by the research rolling mill is satisfying.
4.	Physical working conditions in the research rolling mill are satisfying.
5.	Current job description is appropriate.
6.	I know who my direct supervisor is.
7.	In my work I use my existing qualifications.
8.	I think my relationship with my direct supervisor is appropriate.
9.	My direct supervisor knows my job well.
10.	Atmosphere in the research rolling mill y is friendly.
11.	The level of employment stability in the research rolling mill is satisfying.
12.	Way of promotion of employees is appropriate.
13.	Way how the research rolling mill get rid of the employee is appropriate.
14.	The trainings offered by the research rolling mill are well done.
15.	The research rolling mill has a respect and understanding for my family responsibilities.
16.	I did not observe or I did not experience discrimination.
17.	My effort and commitment are appreciated by my direct supervisor.
18.	I have a feeling that I am a part of the research rolling mill.
19.	I am informed about the plans of the research rolling mill.
20.	I would recommend to a friend employment in the research rolling mill.

4. RESEARCH OBJECT

The research steelwork is a modern company with a stable production process, organizational system, and friendly for the surrounding environment. The mission of the company is to strengthen the company's position in Poland and abroad as the most efficient producer of long steel products with high quality. The rolling mill of the research company is a continuous average type of rolling mill. It was launched in 1999. At the beginning its assortment included rounds flat steel bars, round steel bars and reinforced bars. The research rolling mill is equipped with devices from the company Danieli Morgardshammar. It is one of the most modern rolling mills in Europe, and the most modern in Central and Eastern Europe. In this rolling mill it is possible to implement the stringent requirements of designers connected with engineers or technical parameters and quality of ribbed bars, for both domestic and foreign market. This rolling mill is still modernized in order to meet the requirements of the customers [12].

5. RESULTS

In the research 29 employees of the research rolling mill took part. An additional part of every survey is a part which includes respondent's particulars. In case of the survey presented in the paper the information about respondents were following: workplace, period of employment in the research rolling mill, age, gender, education. Summary results of the survey concerning respondents' characteristics are shown in **Figure 1**.

From **Figure 1a** it results that in the survey mainly workers (82%) took part. It should be remembered that in the general structure of employees, workers always make up the bulk. When conducting any survey we should keep in mind that the structure of respondents should correspond to the structure of employees, especially in metallurgical company. The production process of the ribbed bars requires the involvement of many production employees. Due to the fact that the mill is a department of the steelworks, it doesn't require a large number of managers, as the department is managed by the management board of the steelworks.

34% of respondents are the employees who have been working in the research rolling mill for 11-15 years and 32% of them for 5-10 years. A large percentage (25%) of respondents was also noted in case of employees who have been working in the research rolling mill for over 15 years. So these are employees who know the production processes in the research rolling mill, know its culture and its work style. Their opinion can be regarded as binding. A longer period of employment in this mill means for employee stability of his occupation, for the rolling mill's stability of the production process no need to train new employees [13-14].

The age structure of respondents corresponds to the structure of employment in the research rolling mill. The majority of respondents (39%) are workers aged 51-60 years, which means very experienced and probably with long job seniority. Another large group of respondents (32%) are employees aged 31-40 years. These are people pretty young, but already with some experience. As already mentioned, the work in the research rolling mill requires a force of employees, which is why hiring the very old people is not advisable.

95% of respondents are men. It should be remembered that the research was conducted in the rolling mill of the chosen steelworks in Poland and the respondents' structure according to their workplace (**Figure 1a**) showed that most of respondents are workers. Such work is considered to be heavy and requires a lot of commitment, is not for women. Therefore, women are employed mainly for office work and do not make any duty directly in the rolling production. What explain the gender structure presented in **Figure 1d**.

The structure of education (**Figure 1e**) is more diverse than the structures of other respondents' features. Most people (32%) declared education as high I level. But groups of employees with medium (27%) and vocational (25%) education are also numerous. In the research rolling mills most of the employees has metallurgy education. Due to the fact that their work has an influence on the quality of finished ribbed bars, it is important that they are aware of the basics of materials sciences and rolling process.

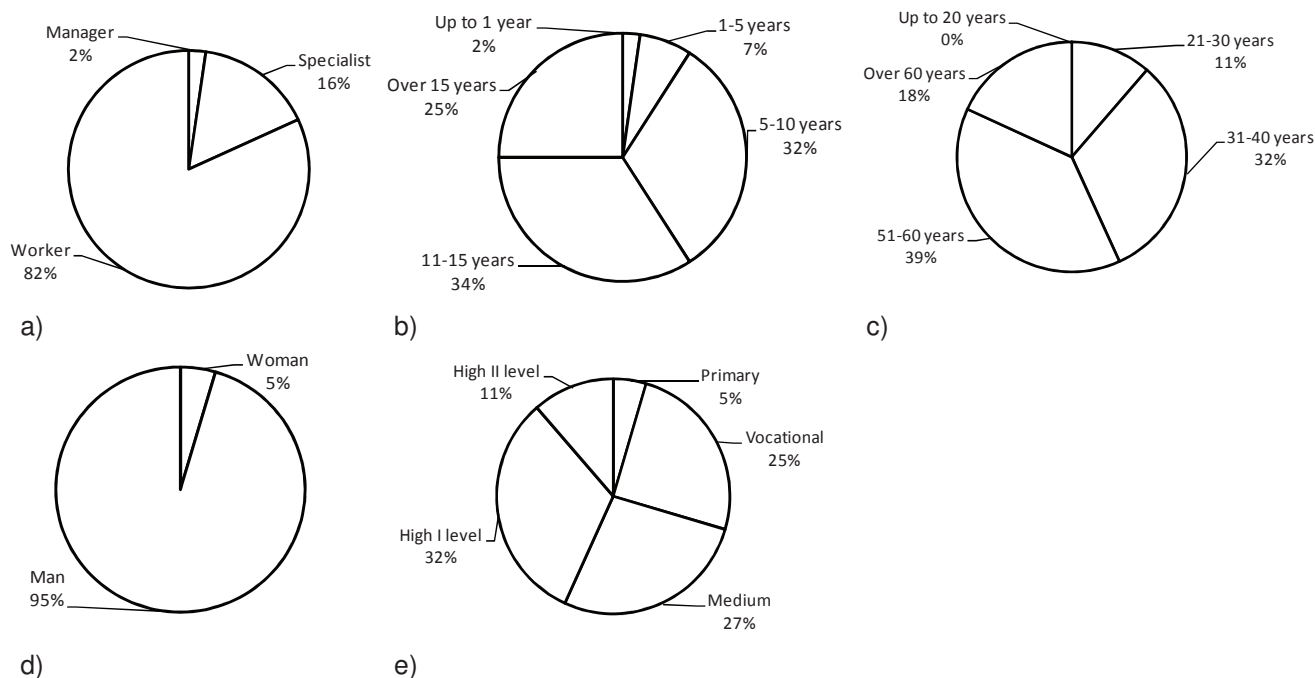


Figure 1 Respondents features. a) workplace; b) period of employment in the research rolling mill; c) age; d) gender; e) education [own study]

The results of assessment given by the employees to the individual statement of the survey was presented in a graphic form in **Figure 2**. The histogram summarizes the average assessment obtained by each statement. It allowed to indicate which elements associated with the work respondents assessed as satisfied and which they would like to change.

On average, all the statements have been evaluated by employees at 3.9. This means that they are only a bit satisfied with their jobs. However, analyzing **Figure 2** it can be seen that the assessment of individual statements were varied and often differed from the average assessment.

The respondents, as the most important features deciding about their job satisfaction, pointed out that they know who is their direct supervisor (average 5.9) and that the trainings offered by the research rolling mill are well done (5.7). This means that employees know who should give them orders and to whom they are responsible. It is especially important in case of the rolling mill and the ribbed bars. The rolling process takes place automatically, there are often unexpected situations, and employees need to see, to whom they have to go in case of any production problems. Properly conducted training affect the quality of their work and at the same the quality of products. As already mentioned, work in the research rolling mill is heavy, requires a lot of attention from the staff. They must meet all the requirements of safety at work, wear suitable protective clothing. Unfortunately, the monotony of the work makes them forget about these things. The role of training is to remind them, what dangers may cause inappropriate execution of their tasks and not following all rules.

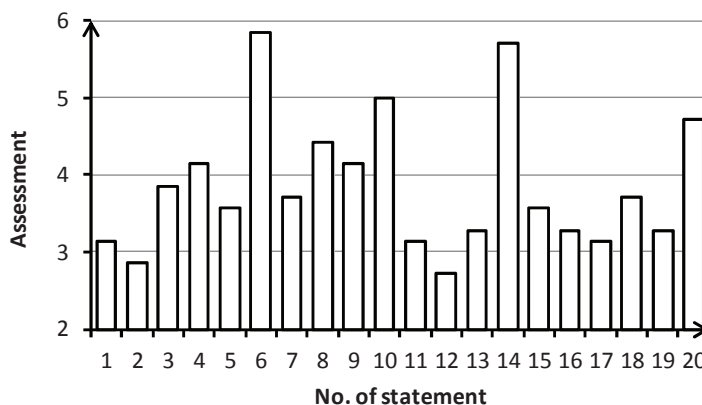


Figure 2 Comparison of obtained averages of individual statements in the research rolling mill [own study]

Other highly rated statements were that the atmosphere in the rolling mill is friendly (5) and that employees would recommend to a friend employment in the research rolling mill (4.7). Highly appreciated atmosphere at work means that employees feel really comfortable in the research rolling mill. Hence the high assessment of the statement regarding the recommendation of employment in the research rolling mill. This means that this mill is seen as a good place to work, which in turn will affect the demand for labor in that place.

The respondents, as the least important features deciding about their job satisfaction, pointed out that the way of promotion of employees is appropriate (2.7) and that current level of salary is satisfying (2.9). From the natural point of view in case of the satisfaction there are two factors that the most often determine the quality of the performed work. Due to the nature of work in the research rolling mill, the work promotion is not easy, because the organizational structure is not too complicated. While the salary is an element which can be controlled. However, it should be emphasized that these are the two statements that are often poorly assessed by the staff of most companies. Everyone wants to earn more and have facilitated path of development and advancement.

13 out of 20 statements were assessed below average. These are the statements, which would need to be looked more closely to improve employees' job satisfaction, and thus the effectiveness of their work. Because happy employees are productive, who come willingly to their works, who feel part of the company. However, one of the most important statements, which were assessed below average, is the statement that they have a feeling that the employees feel part of the company (3.7). And this is a statement which helps to create a culture of the rolling mill, relationship between the employees and the company. The employees satisfaction affects the result of the research rolling mill production process, namely the quality of the produced ribbed bars, and hence the satisfaction of the customers of this rolling mill.

The management style of the assessed supervisor had an impact on the stability of the production process and thus the quality of the ribbed bars. As it was shown in paper [14] and **Table 2**, it results that the quality of the ribbed bars in the period preceding the survey was high. It can be seen in the low share of nonconformities in the total production of the ribbed bars (found in the rolling mill) and a low amount of complaints (found by the customer). It can be concluded that job satisfaction had an impact on these indicators.

Table 2 Nonconformities and complaints in the total production of the ribbed bars [15]

	Year 1	Year 2	Year 3	Year 4	Year 5
Share of nonconformities in the production [%]	0.072	0.070	0.038	0.100	0.137
Share of the complaints in the production [%]	0.0198	0.0899	0.0120	0.1064	0.0743

6. CONCLUSION

Economic development, new investment causes the development of the construction industry. The industry requires from its suppliers to deliver materials of sufficient quality. An important feature of such investments is their safety. The ribbed bars are very important group of the products used in construction industry. Their application allows for savings in the use of other construction materials, time. Their surface provides better adhesion to concrete.

The most important factor that affects the quality of produced ribbed bars is the work of employees, and in particular, their job satisfaction. Adequate working conditions, good motivation system result that the employees better perform their duties, and that the next step it is reflected in higher quality of products produced by the company. So employees' job satisfaction brings benefits to the employer. One of the tools that can be used to assess the employees' job satisfaction can be a survey. Such a research was conducted among 29 employees of chosen rolling mills in the steelworks in Poland. The survey allowed to indicate the average employee job satisfaction, and at the same time the highest assessed statement, e.g. that the employees knows who is his direct supervisor. From the survey it also results that the trainings offered by the

research rolling mill are well done, that the atmosphere in the company is friendly, which causes that the employees would recommend to a friend employment in the research rolling mill. Unfortunately according to employees the way of promotion of employees is not appropriate and the current level of salary is not satisfying.

The results of the survey were communicated and used by the management of the research rolling mill. Because this research was not carried out by the managers of the company, respondents felt more confident about the anonymity of the survey and felt more comfortable in completing it.

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