

Rating of quality management in selected industrial companies

Ocena zarządzania jakością w wybranych przedsiębiorstwach przemysłowych

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Abstract

This article took problems about social and cultural aspect of quality management in industrial companies. This article contains theoretical considerations about idea of quality and culture of quality. In this elaboration quoted results which were carried out in thirty-one industrial companies. The results were presented in set of twenty criteria, which were taken as a tests of the quality management level. As we can notice from the tests, the most controversial and concern criteria is the level of staff motivation to realize their duties, what is the most basic condition of quality understood as fulfillment of the requirements. Generally, the level of quality management in companies was rated rather positively, the average rate of all criteria in all companies is 4.09 (four comma zero nine) in scale from 1 to 5 (one to five).

Słowa kluczowe: jakość, zarządzanie jakością, kultura jakości

Abstrakt

W artykule podjęto problematykę społeczno-kulturowego aspektu zarządzania jakością w przedsiębiorstwach przemysłowych. Artykuł zawiera teoretyczne rozważania na temat pojęcia jakości oraz kultury jakości. W opracowaniu przytoczono wyniki badań, które przeprowadzono wśród 31 przedsiębiorstw przemysłowych. Wyniki zaprezentowano w układzie dwudziestu kryteriów, jakie przyjęto do oceny poziomu zarządzania jakością. Jak wynika z badań, budzącym największe kontrowersje i zaniepokojenie kryterium jest poziom motywacji kadry do realizacji swoich obowiązków, czyli podstawowy warunek jakości rozumianej jako spełnienie wymagań. Ogólnie poziom zarządzania jakością w badanych przedsiębiorstwach oceniony został pozytywnie, gdyż średnia liczona dla wszystkich kryteriów w każdym z badanych przedsiębiorstw wynosi 4,09 w skali od 1 do 5.

Introduction

The quality of ware is determinant of success for every company and its position in the market. It influences for perception the company by customers, it is also an important element when we want to estimate the value of the company. Quality is the basic foundation of existing and potential development of the company. There is no doubt, that the quality of wares industrial companies is determined by the level of quality management and as a consequence the culture of quality, which was created by this level.

In article taken a social-cultural problems of aspect quality management in industrial companies. The presented theoretical considerations about concept of quality and culture of quality. In this article were quoted the results of the tests which took place amongst 31 (thirty one) industrial companies. These tests had preliminary character, they were conducted on different number of respondents in each company. The point of the tests was preliminary discernment in the level of quality management for social and cultural area of industrial companies.

The quality

The colloquial ambiguity of term “quality” causes very often incomprehension for all concept of quality management and needs, which are put in front of the organization members. Sentence that the quality is interdisciplinary term and it functions on many grades of human activity presented the character of this problem very well. It covers the quality of: wares, services, work and life [1].

This ambiguous and interpreted differently term was the interesting object in antiquity for great philosophers such as Platon or Aristotle. Like experts say the term of quality is very common associated with widely understood traits of each ware [2]. Three theories about quality which present J. Dahlggaard, K. Kristensen, G. Kanji [3]. The authors define quality firstly as a dignity, something special or High class. Secondly like a perfection (no defects). And at least as a up to standard.

In product category, but with underlining parametrical side, the quality is define also by V. Libal [4]. The author writes, that the quality of product should be define with traits of figures, which let the product fulfill the aim to which it was designed.

Undoubtedly, during last century the category of quality was promoted from the sphere of real production to sphere of higher level management. From the productive operating parametr it was raised to the rang of the most important strategic factor in company management. It shows revaluation term of quality, which form the product category was promoted to market category. This approach to quality is presented by J. Juran [5]. P. Crosby [6], J. Bank [7] or E. Deming who present the quality like a level of customer's satisfaction. Nowadays, quality it is not only the problem for production services and quality control. This aspect requires special practices in management areas-quality management.

The rules of quality management

One of the fundamental pillars of quality management are 8 (eight) principles of quality management. They were concluded in ISO 9000 norm [8] where we can find out that these principles can be use by top management to improve functioning of organisation. These rules are:

Principle 1: Customer focus. Organizations depend on their customers and therefore should understand current and future customer needs, should meet customer requirements and strive to exceed customer expectations.

Principle 2: Leadership. Leaders establish unity of purpose and direction of the organization. They

should create and maintain the internal environment in which people can become fully involved in achieving the organization's objectives.

Principle 3: Involvement of people. People at all levels are the essence of an organization and their full involvement enables their abilities to be used for the organization's benefit.

Principle 4: Process approach. A desired result is achieved more efficiently when activities and related resources are managed as a process.

Principle 5: System approach to management. Identifying, understanding and managing inter-related processes as a system contributes to the organization's effectiveness and efficiency in achieving its objectives.

Principle 6: Continual improvement. Continual improvement of the organization's overall performance should be a permanent objective of the organization.

Principle 7: Factual approach to decision making. Effective decisions are based on the analysis of data and information.

Principle 8: Mutually beneficial supplier relationships. An organization and its suppliers are interdependent and a mutually beneficial relationship enhances the ability of both to create value.

It is worth to notice that canvas of these eight rules was the philosophy of Total Quality Management [9, 10, 11]. It concerns especially principle number three and six. It shows, how much practice of quality management is close to the TQM concept, which is mainly based on specified organizational culture, full commitment in quality its improvement and orientation for a customer [12, 13, 14].

Quality culture-determinant of quality management level

In literature turns out functional criteria of diversification cultures in organization, thanks to it we can say about culture: financial, quality, production, trade or personal [15]. Especially proquality actions are in cultural conditions element. So, that is the reason why the biggest task for the managers is creating pro-quality culture [16]. In order to seek constant improvement and development in quality, technical systems must be fully integrated with social systems-it is necessary to create quality culture [17]. Modern approach to quality exposes worker potential and reach: quality culture, humanization of production process, quality awareness promotion, motivation and common participation of employees. To build quality culture in company we have to treat people like the most valuable assets [18].

Shaping quality culture in organization is based on cultural orientation change of organization, what is connected with [19]:

- changing orientation, from removing mistake effects through quality control services to orientation which prevent mistake formation with all employees engagement;
- changing management model from traditional approach, highly serialized and functional to approach which presents active attitude and responsibility of workers for company management process;
- changing management model from central to effective cooperation with employees model, delegation, participation process;
- changing in communication system from “blocking and detention” strategic information by managers to open model and unfettered communication amongst workers.

In order to make cultural changes oriented on quality we have to use “six keys” to quality [20]. Firstly, it is necessary to fully understand and realized problems of quality in organization (key nr 1), possession relevant knowledge for all organization members (key nr 2) to use right tools and methods. Moreover, full engagement is necessary (key nr 3). Very important thing is to communicate well (key nr 4) and action (key nr 5) plane (key nr 6).

Employees engagement is considered in literature as a one of the basic conditions to reach high quality actions and products, which are effects of this actions. It is an average number many factors to which we can include motivation and organizational culture [21].

Strong and consistent culture is necessary feature of every perfect company, with no exceptions. The more strong and pro-market culture is the less status, organizational rules and details are needed. Thanks to clear definition main values in company, everybody irrespective of the position know exactly what is expected from them [22].

Shaping organization set to quality, it is tied with necessity of shaping right interpersonal relations, cooperation, activity for quality, changes awareness state, relevant attitude of managers and workers. It requires new organizational model role, views of the value, communication system which works well. To create quality culture right atmosphere is very important, democratic way of management, workers participation, focus on humanity factor, thinking about necessity of changes in work culture, change in style of thinking and action [23].

To build quality culture, we have to underline the meaning of interpersonal relations, treating

employees with respect, put emphasis on development, reaching new references, delegation and taking part in management process. Building quality culture requires defeating series barriers, prejudices and requires a lot of time as well. But it is right and profitable way, which leads to the company success. T. Ansell claim that the real quality culture is able to build only on ideas [24]:

- honesty – based on honest and reliable principles in relation to interior and environment of the company;
- lack of culprits – in quality culture there is no place for searching guilty person but there is a place for learning and drawing conclusions from mistakes for whole organizational;
- the long-term-quality culture is not a disposable, short-lived state. It is a long-term state;
- engagement – in quality culture, employees of each level are engagement in quality;
- measurability – quality culture can not exist without using relevant tools which objectively can estimate quality;
- interests– problematic of quality must disturbing interest amongst workers;
- uncompromising attitude – the base of the quality culture is uncompromising in reaching planned results.

Functions which organizational culture fulfill in quality area [23]:

- ensure “qualitative” base of identity;
- helps to improve engagement process in company cases and let to decide together about quality aims;
- keep density in organizations which promote quality, introduce some common patterns of attitudes and norms;
- it let shaping attitudes and actions which are pro-qualitative;
- affects the perceptions of the environment, help in choosing a business strategy.

Organizational culture may bring both positive and negative effects. Positive effects have important meaning in quality management systems. The right organizational culture let us [25]:

- orientation actions through complexity reduction; thanks to it we can limit, introduction detailed and formal principles and regulations (precedes or introductions);
- efficient communication chain – thanks to unitary orientation we can eliminate or limit less efficient formal communication;
- quick decision attitude – common values, principles, common politics which is realized by

company, common language; all these let to compose common treaty in making decision process;

- faster implementation of plans and projects thanks to common ideas and values, it let for easier solutions many problems who are connected with these process;
- small issues on control – deeply rooted good quality patterns, self control – let limit control systems which are very expensive;
- strong motivation and loyalty – very important features in each company;
- stability and reliability – belonging to stabile and consistent in cultural sense community let us limit concerns and increase sense of security members of organization;
- belonging to a stable and coherent in the sense of cultural community reduces fear and increases the feeling of safety of members of the organization.

Building quality is long and laborious process. Although, in current times it is a key element in efficient management and clause in building advantage over the competition.

Evaluation criteria in quality management

Table 1 shows criteria, which were adopted to asses the level of quality management in selected industrial companies.

Tests take place in random thirty-one industrial companies. In this grup, we had representatives of small, medium and big industrial companies from different trades which work in Poland. The results should be treat only as a preliminary, demonstrative results. This try does not have official character. In surveys took part workers excluding the managers.

Tests took place in 2011. Respondents were presented the set of twenty statements, which presented desired image of company with high standards with quality management, developing quality culture. Each of these statements respondents were estimated in Likert’s scale in range from 1 to 5, where: the 5 means – “I definitely agree”, 4 means “I rather agree”, 3 means “I do not have an opinion”, 2 means “I rather disagree”, 1 means “I definitely disagree”.

Figure 1 presents summary results in range the assessment of the level of quality management. Types of all respondents from each companies made an average for each parameter evaluation. The tests community are the best rated by criterion eight – set management on meeting customer requirements. The worst rated was motivation employees to do their duties-criterion nr 18. This

Table 1. Evaluation criteria in quality management [source: own work]

Tabela 1. Kryteria oceny poziomu zarządzania jakością wykorzystane w badaniach [źródło: opracowanie własne]

EVALUATION CRITERIA IN QUALITY MANAGEMENT	
P 1	Employees are fully engagement in realization their duties
P 2	Management support employees in realization new tasks
P 3	Employees have precise range of duties
P 4	Employees are supported through the management in realization their duties
P 5	Employees have an opportunity to improve their qualifications
P 6	Employees obey the rules, instructions
P 7	Meet customer's requirements is priority
P 8	Management is set on meet customer requirements
P 9	Management let the employees attendance in training
P 10	Management encourage employees to improve their qualifications
P 11	Employees engage in improvement place of work
P 12	Fulfillment law and technical requirements through the service/ware is obligatory
P 13	Employees know their duties very well
P 14	Employees have enough qualifications to realize own duties
P 15	Company cooperate with the best suppliers
P 16	Company still invests in the most modern machines and tools
P 17	Employees take care about machines and tools at job position
P 18	Employees are well motivated to do their duties
P 19	Employees take care about control and measuring tools
P 20	Cooperation between employees is very good

situation generates some concerns about the effectiveness in realization management tasks in range basic function of management -motivation. Overall functioning quality management systems in tests on companies we should assess positively, the average figures on 4.09 level.

In figure 2 in number scale presented average results for criterion from P1 to P5. Most of respondents were not to sure about the statement that employees are fully engagement in realization their duties (P1). Only in case of 8 companies most of respondents claimed that employees are fully engagement in their duties. Took a scale from 1 to 5 the average rate was 4.16

In the case of 9 companies most of the respondents confirmed strong support by the management in realization new tasks (P2). In five companies most of respondents could not clearly confirm these actions. An average rate in this statement was 4.15 (four comma fifteen) employees have precise range of responsibilities (P3) – most of the respondents confirmed this state in 15 companies. From the tests

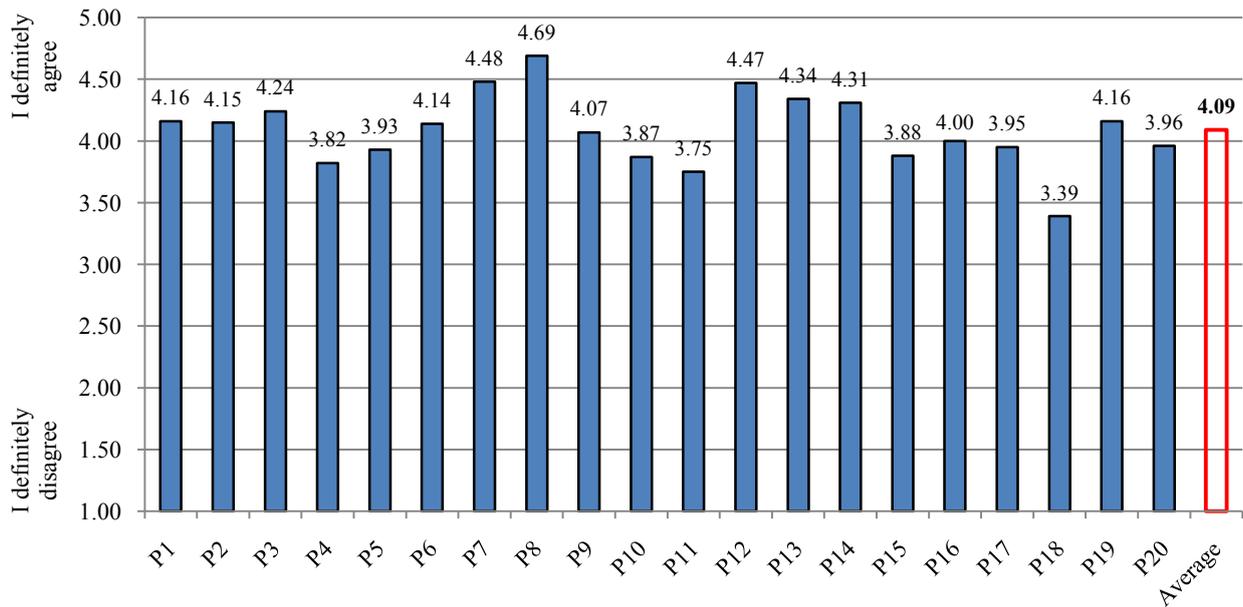


Fig. 1. Summary results of tests for each parameter [source: own work]

Rys. 1. Syntetyczne wyniki badań dla wszystkich parametrów [źródło: opracowanie własne]

we can notice that in most companies they set precisely employees duties. % companies had problems in this case. An average rate was 4.24.

In company characterized in quality culture employees are supported by management in realization their main duties (P4). This statement is similar to criteria P2, although duties are defined here as a ritual, everyday tasks are realized by employees. It not demanding extra engagement and extra skills. This support is estimate in average rate 3.82

Made it impossible by management to improve employees skills (criteria 5), it is also a determinant of a good management in a company. Situation in this range looks slightly better than in previous case. An average rate for all respondents in companies reached 3.93.

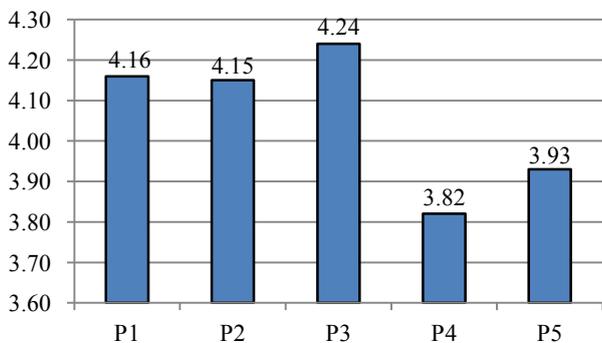


Fig. 2. The results of the tests in range P1–P5 [source: own work]

Rys. 2. Wyniki badań w zakresie kryteriów P1–P5 [źródło: opracowanie własne]

In figure 3 in numerical scale were presented average results for the criteria from P6 to P10. The

determinant of efficient management of quality in company is using interior regulations in character procedures and instructions. In most companies (23 cases) confirmed more or less definitely this state quo. An average rate for each company was 4.14.

Quality management as pro-market action should be oriented on fulfilling customer needs. It should be treat like a priority by all organization workers. For all companies which took part in a test an average rate was 4.48. These tests confirm, that most of the testing companies are observed set on fulfilling customer’s needs, what should be estimate very positively.

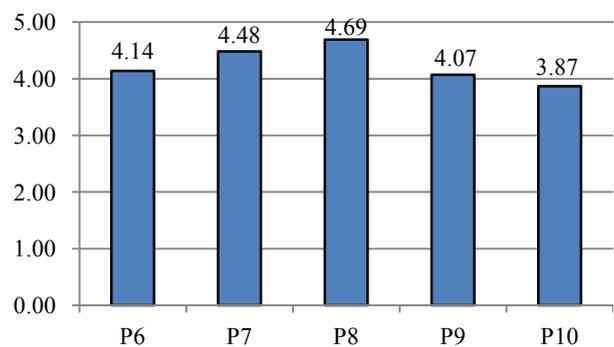


Fig. 3. The results in criteria P6–P10 [source: own work]

Rys. 3. Wyniki badań w zakresie kryteriów P6–P10 [źródło: opracowanie własne]

The best result concerns attitude of management testing companies for meeting customer’s needs. The test showed that in testing companies it is one the best rating criteria (4.69).

Another indicator of the company, in which there is a culture of quality, is a condition in which

management creates the opportunity to participate in training workers. The study looked at how managers respond to the identified training needs and the initiative of the workers Responding estimated average of 4.07. Slightly less rated encouraging employees to improve their skills of management (3.87).

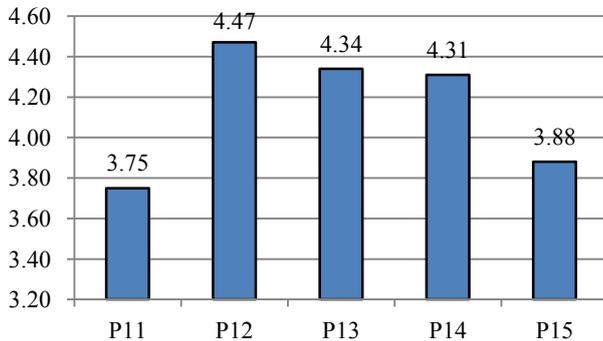


Fig. 4. The results of the criteria for P11–P15 [source: own work]

Rys. 4. Wyniki badań w zakresie kryteriów P11–P15 [źródło: opracowanie własne]

In figure 4 shows the results of research on the criteria for P11–P15. Determinant of the quality-oriented culture is the involvement of employees in perfecting the processes of the workplace. The results obtained in this field are among the worst. Average at 3.75, this allows to evaluate the involvement of a minor. In interpreting these results in a Likert scale, such involvement is difficult for respondents to evaluate or negligible.

Each company should put emphasis on compliance with legal and technical requirements of the manufactured product, especially for industrial companies. Therefore, compliance with legal and technical requirements for product / service (P12) here seems to be mandatory and priority. The results indicate, that the opinion on this subject is very positive (4.47). This shows that in most companies staff are required to comply with legal and technical regulations.

The results of the knowledge of their duties by the staff (P13) should be assessed positively (4.34). It is worth to underline, that there was no negative response to such a state of affairs in enterprises. Knowledge of their duties by the employee is the primary determinant of the proper quality management. It is a state subject to a culture of quality transparent organizational structure that generates the specific needs of the employees' qualifications. Qualifications, which verified the respondents answer to the statement – “employees are sufficiently qualified to perform assigned duties” (P14). Respondents in the majority declare to have the appropriate qualifications. The results in this area should

be assessed positively (4.31), although this assessment should take into account the subjectivity of the respondents.

Relationship between industrial enterprises and their suppliers are undeniable. Often, the quality and punctuality of suppliers determines the success of the enterprise market. Therefore, companies in which well-managed quality, as part of its strategy going to work best available suppliers. Most respondents could not respond clearly to the conclusion that their company has collaborated with the best suppliers (criterion P15). Policy co-operation with suppliers is determined by the highest levels of management, the strategy adopted is the result of the company. Serial workers have trouble with a clear opinion on this subject. Such a situation should not arouse a concern. However, may indicate a lack of knowledge of strategy and policy leadership in the supply and cooperation. Consequently, this state of affairs average rating indications formed only at the level of 3.88.

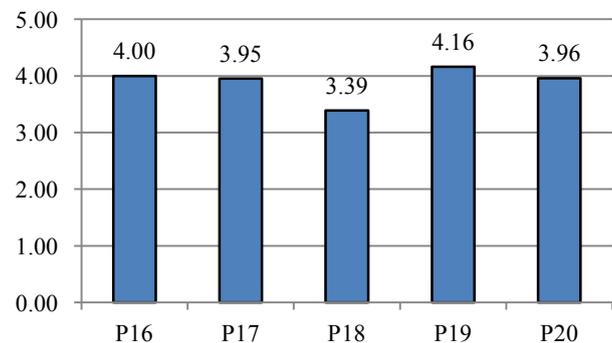


Fig. 5. The results of the criteria for P16–P20 [source: own work]

Rys. 5. Wyniki badań w zakresie kryteriów P16–P20 [źródło: opracowanie własne]

Quality of products on the market varies with the development of technology. As one of the determinants of continuous improvement can adopt strategies of investing in modern machinery and equipment (P16). Most respondents agreed with this statement in relation to their businesses. Mean values are formed in this regard at the level of 4.0.

Taking care of employees for the jobs on which they work is another of the indicators of good quality management and pro-quality culture. For most businesses, the respondents confirmed this state of affairs. The average for all companies for the criterion P17 stands at 3.95.

Adequate motivation and, consequently, employee involvement are key determinants of pro-quality culture. Unfortunately, in this range, the worst result was noticed. If you respond to the level of motivation in companies surveyed were of the opinion very divided. In assessing these results

should be borne in mind, that motivation is a state rated highly individual and subjective. In many enterprises, dominated by opposition to the finding of good motivation. The results indicate, that the level of motivation raises some concerns. Average motivation level was 3.39.

Caring for the control and measurement tools is also one of the determinants of effective quality management. This is particularly true of industrial enterprises. The average for all companies in this area amounted to 3.95.

With the statement "cooperation between the staff is very good" (P20) without a firm belief the majority of respondents agreed. Assuming an average rating point scale for the criterion of P20 was 3.96.

Conclusions

Managing a business in the area of quality today is one of the main tasks of the managers. Determines the effectiveness of quality management to meet customers and commercial success. Any failure in this range not only threaten the development of enterprises, but also its normal existence. The study was conducted to allow more general terms, an approximate picture of the level of quality management in socio-cultural dimension. Study has identified areas, where quality management is implemented at a high level, as well as those evaluated less positively, which is necessary to look far to identify the precise reasons for this state of affairs. Arousing the greatest controversy and concern at this criterion level of motivation of staff to perform their duties, a prerequisite for quality assurance. It is also a condition for continuous improvement of business and creating a condition of pro-quality culture. Generally, the level of quality management in the surveyed enterprises have been positive, as the average calculated for all parameters in all companies surveyed is 4.09.

Admitted to a five-point scale survey research does not give an accurate picture of quality management in the surveyed companies. Much more precise results are obtained using the so-called. expanded Likert scale, based on a seven-point scale.

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