The impact of leadership qualities on quality management improvement

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Abstract: *Currently, the importance of leadership is considered more and more often in quality management. The need of an appropriate leader has been already emphasized in ISO 9000 standards, in TQM philosophy as well as in different models of improvement which are used in the methodologies of prizing quality. Yet, it is in the concept of TQL where the attitude based on the need of leadership in an organization has achieved its best-developed, full shape. On the basis of the conducted studies, the following publication presents the analysis of the dependence between leadership qualities of managers and the improvement of quality management. There has been an attempt to define the qualities, which a manager being responsible for quality management, should have.*

Key words: quality management, leadership, quality improvements, Total Quality Leadership

1. Introduction

In the XX centaury, it turned out that a traditional neo-positivist model of scientific management did not come true (Sułkowski 2005). It appeared that a pure rational attitude, which does not take into account human factors, does not provide sufficient results. Therefore, the social aspects must be taken into consideration in a contemporary quality management.

Currently, the importance of leadership is considered more and more often in quality management. The need of an appropriate leader has been already emphasized in ISO 9000 standards, in TQM philosophy as well as in different models of improvement which are used in the methodologies of prizing quality (Skerlevaj 2007; Han et al. 2009; Zu et all, 2010). Yet, it is in the concept of

TQL where the attitude based on the need of leadership in an organization has achieved its best-developed, full shape (Sadikoglu and Zehir 2010). On the basis of the conducted studies, the following publication presents the analysis of the dependence between leadership qualities of managers and the improvement of quality management. There has been an attempt to define the qualities, which a manager being responsible for quality management, should have.

2. Literature review - leadership qualities

There are two attitudes dominating in the studies concerning leadership in an organization. The first one assumes that leadership is based on certain qualities which a leader should have. The second one assumes so-called - a process-like attitude to leadership, according to which leadership is mainly based on the interaction between a leader and employees and does not entirely result from leader's qualities (Kumala et al. 2009; Peter and Northouse, 2010). The attitude based on qualities is in accordance with a concept in which being a leader stands for a set of inborn features which can't be learned. Whereas, the attitude based on the interaction assumes that most managers can learn how to be a leader through gained experience. (Jago, 1982; Ishi et al. 2009; Li 2009).

According to B.M. Bass, leadership practices can be presented as a continuum (Table 1). There will be autocratic practices on one side while on the other side, there will be democratic ones. However, such attempts to classify leadership is criticised as being simplified and they do not cover the whole spectrum of issues, which can be considered with reference to leadership (Avrey 2009). Studies which have been conducted all over the world allow defining different features, which are significant for a successful leader. The specialists have attempted the issue in different ways. Some of them were trying to choose just few qualities of the biggest importance while the others were trying to identify as many features influencing a good leader's abilities as possible.

Table. 1. *Autocratic and democratic leadership practices*

Autocratic practices	Democratic practices
• being authoritarian, giving orders, forcing • the use of power and making decisions independently by a leader • putting pressure on the realization of aims • task –and result orientation	• taking into account other team members' opinions and feelings • counsels • people and human-relationship –orientation • taking decisions by a group • facilitating contacts • sharing with knowledge and control

Source: Author's own study.

Kouzes and Posner conducted a very interesting analysis of leadership qualities (Rowitz, 2001).They have created a ranking of features which appear in most of 52 studies concerning leadership qualities all over the world whose results they have deeply analysed. On the basis of their research, the following hierarchy has been achieved: (the number in the brackets means the number of studies in which a given leadership quality appears): technical skills (18), social skills (18), motivation (17), team-work skills (17), interpersonal skills (16), emotional equilibrium(15), need of success(15), executive skills (12), making impressions (12), intellectual skills (11), domination (11), responsibility (10), ethic (10), skills of work coordination (9), communication skills (6), physical stamina (6), use of standards (5), creativity (5), conformism (5), courage (4), experience (4), maturity (3).

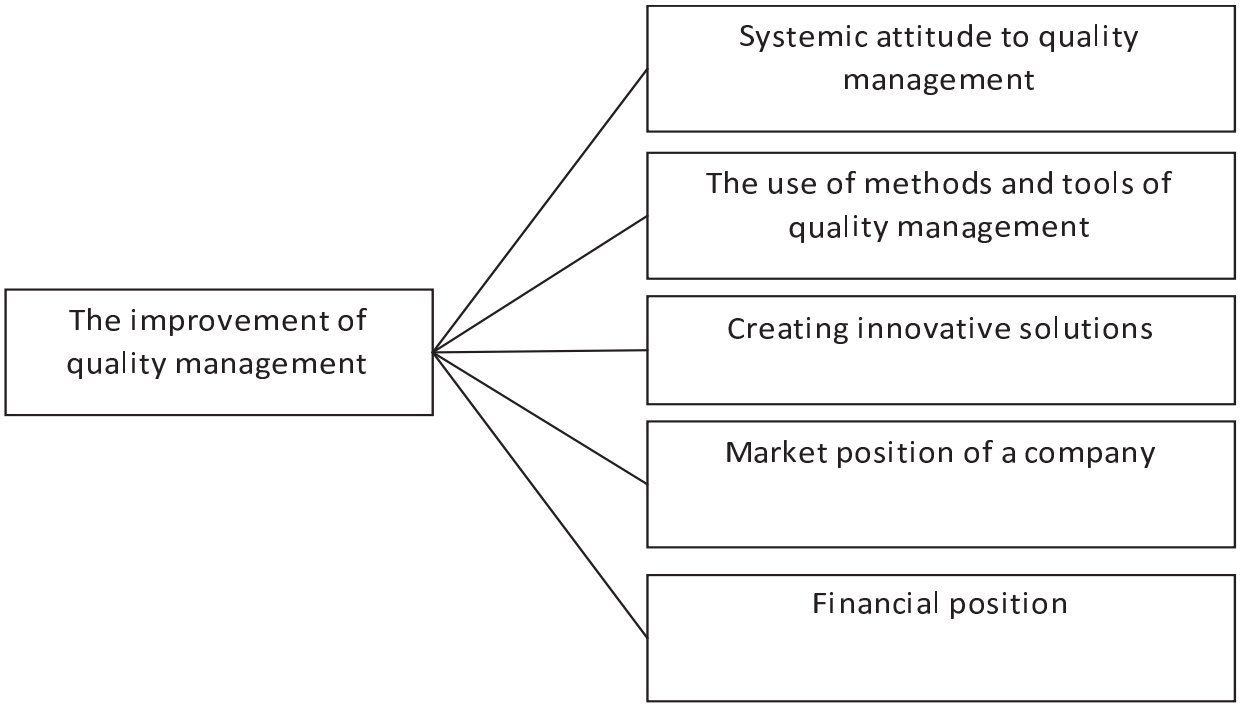
The leadership qualities decide, to a large extent, if a person is a good and successful leader. The contemporary studies suggest (Vires at al. 2009, Faris et al. 2009) that a good leader should have not only charisma but most of all, should have communication skills as communication with his subordinates, superiors, co-workers, clients, deliverers and stakeholders is a large part of his work. In the conducted studies, the concept of leadership was based on leadership qualities. The qualities, which have been taken into consideration in the research, were chosen by means of the analysis of literature and an expert-like method.

Table. 2. *The characteristics of all studied companies*

Variables		Number of respondents	Percentage of population
The criterion of division	**Interval**		
Tape of activity	*Industry*	*385*	*35%*
	Trade and services	*725*	*65%*
Business sector	*Industry (except for mining)*	*356*	*32%*
	Mining	*29*	*3%*
	Trade	*175*	*15%*
	Construction	*74*	*7%*
	Transport and logistics	*41*	*4%*
	Financial Institutions	*41*	*4%*
	Other commercial services	*290*	*26%*
	Non-commercial services (education, health)	*45*	*4%*
	Administration	*59*	*5%*
Size	*Micro organizations*	*235*	*21%*
	Small organizations	*268*	*24%*
	Medium size organizations	*420*	*38%*
	Big organizations	*187*	*17%*

Source: Author's own study.

Figure 2. *The components of improvement of quality management systems*



Source: Author's own study

The following variables were taken into account within a scope of the improvement of quality management:

- D1 – having a quality management system being in accordance with standards of PN-EN ISO 9001,
- D2 –attitude to the implementation of standardization in an organization,
- D3 – having trade quality management systems,
- D4 – having environmental management systems,
- D5 – having security management systems,
- D6 – use of team work ,
- D7 – involvement in team work,
- D8 –use of methods and tools of quality management systems (the variable which defines how many methods and tools of quality management is used in a given organization),[1]
- D9 – number of innovative ideas per an employee,
- D10 – rewarding employees for their innovative ideas,
- D11 – pro-innovative attitude of a company,
- D12 – market position of a company in comparison with the best companies in a given branch of business,
- D13 – change of market position in comparison with companies in recent years,
- D14 – financial condition of a company.

[1]*The following tools and methods were used in the studies: QFD, FMEA, seven old tools of quality management, seven new tools of quality management, Servqual, Six-sigma, statistical methods, brain-storming, quality cost analysis, Kaizen and other.*

In order to analyse the concept of leadership in an organization, the theory of leadership based on leadership qualities was used in this publication. The following variables, which characterize a successful leader, were used in the studies:

- P1 – physical appearance, such as height or appeal,
- P2 – interpersonal communications skills,
- P3 - vigour,
- P4 – aiming for constant development,
- P5 – planning and action organizing skills,
- P6 – courage,
- P7 – resistance to stress,
- P8 – ability to assess others' work,
- P9 – innovation,
- P10 – diplomatic skills,
- P11 – ability to persuade,
- P12 – aim-oriented attitude,
- P13 – open-minded action taking,
- P14 – self-assessment ability,
- P 15 – truthfulness,
- P16 – being consistent ,
- P 17 – fulfilling promises,
- P 18 – discretion.

4. The results of empirical studies

18 qualities, which were defined on the basis of the concept of leadership qualities, were examined in terms of their importance on the effectiveness of a leader (variables P1-P18). The following ones were chosen by the respondents as the most important: planning and action organizing skills (94, 46), resistance to stress (4, 27), interpersonal communication skills (4, 21), aiming for constant development (4, 18) and being consistence in his actions (4, 16). The least important qualities turned out to be: physical appearance (2, 35), open-mined action–taking (3, 60), persuasion (3, 60), truthfulness (3, 68) and achieving measurable results (3, 72).

What seems to be an important problem, which should be taken into consideration, is defining the extent to which leadership qualities can affect the improvement of an organization. Nowadays, the results of a company are measured within financial categories or beyond financial ones. In this publication, they are assumed to be measured with respect to quality by means of the above mentioned fourteen variables which concern quality improvement (D1-D14).

It is worth to observe that asking a question if leadership influences quality development reflects the opinion that there is a cause and effect connection between leader's actions and a success of a company within a pro-quality strategy.

There has been a dispute in the scientific literature about the influence of leadership on the results of a company yet, mostly there has been an opinion that there is an impact on leadership on company's status. When analyzing this influence, it has to be remembered that one single variable (single leadership quality) has a small influence on an organization. While it is a set of qualities that can define if a given person is an effective leader. When examining separate leadership qualities, it will be not the strength of its influence that will be of interest but its existence which means that a given leadership quality is important for the improvement of quality. Nonetheless, it is worth remembering that not only one, even a very important quality comprises the idea of a good leadership as a good leader must be characterized with a set of qualities. What's more, his

profile has to be compatible with an organizational culture of a company.

In order to establish the influence of leadership qualities on the improvement of quality, the correlations of importance of these qualities (P1-P18) with the above mentioned variables connected with the improvement of quality management (D1-D14) were counted. The analysis of a mutual dependence was presented in Table 3. The classic, typical levels of statistic significance used in economics were used in the studies. The following ways of their assessment are often assumed in scientific studies when interpreting the levels of importance. (Stanisz, 2007):

- p<0,05 – essential effect,
- p<0,01 – highly essential effect,
- p<0,001 – utmost essential effects.

In table, the sign"+"stands for a positive correlation between variables while the sign „-" stands for a negative correlation. When the correlation is statistically essential at the level of statistical significance 0,05, it was marked by means of a sign „*", the statistical significance at the level 0, 01 was marked with a sign „**" and the importance at the level of 0,001 was labelled with „***".

Leadership, as it was described in chapter 2, is extremely significant in the process of implementing standards of ISO 9000, especially TQL. PN-EN ISO 9004:2009 standards state that it is leaders who set the aims and directions of an organization.

Table 3. *The importance of coefficients of correlation between the qualities, with which leaders should be marked and the development of quality management.*

	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14
P1	+ *					+ ***	+ **							
P2			+ *								+ ***	+ *		+ *
P3											+ ***			+ *
P4							+ *		+ ***	+ **	+ ***		- *	
P5									+ **		+ ***			
P6									+ **	+ *	+ ***			
P7											+ ***	+ *		
P8		+ **				+ **	+ **			+ *	+ **			
P9		+ ***									+ ***	+ **		
P10		+ *		+ *			+ *		+ **		+ ***			
P11									+ *		+ ***			
P12		+ *	+ **						+ ***	+ *	+ ***	+ *		
P13		+ **							+ **	+ *	+ *			+ *
P14		+ **	+ *	+ *						+ *	+ ***			+ *
P15		+ ***							+ *	+ **				
P16		+ ***									+ **	+ *		
P17		+ ***				+ *					+ **	+ *		+ **
P18		+ ***				+ **	+ **							

Source: Author's own study.

It is recommended for them to create and maintained an internal environment in which people can fully involve in the process of achieving aims (PN-EN ISO 9004:2009). The fact that a leader should be marked with a set of appropriate qualities was included in a systemic attitude.

In the above mentioned standards of ISO 9004:2008, it is assumed that employees were marked with leadership skills in order to maintain the process of achieving aims of the company and its development (PN-EN ISO 9004:2009). According to R. Karaszewski , a proper leadership is the pillar and the basis of implementing the concept of total quality management.

In TQL, which is one of most-developed pro-quality concept, a proper leadership is the first and the most important rule which conditions the effectiveness of its use.

When analysing how a pro-quality leadership should look like, qualities, which are positively correlated with the most number of variables concerning different aspects of the improvement of quality management, were defined. None of examined qualities turned out to be insignificant however, what can be observed is that some of attributes of pro-quality leaders are more important than the other ones. Taking into account the results of studies, leadership qualities can be divided into three groups in terms of their usefulness in the improvement process of quality management (table4):

- The key qualities: essential for a leader who improves quality management. If a leader does not have these qualities, it is impossible to implement the concept of quality management by a leader (TQL).The key leadership qualities are: achieving measurable results, ability to assess others' work, self-assessment skills, and fulfilling promises.
- The important qualities: - very important when implementing pro-quality strategy of action. Leaders marked with these qualities have a strongly positive influence on the improvement of quality. The following qualities can be mentioned here: aiming at a constant development, innovation, diplomatic skills, open-minded action taking, and discretion.
- The useful qualities- leadership qualities from this group have a positive influence on the improvement of quality management However, they are not of greater importance and lack of them do not hinder the process of pro-quality strategy in a significant way. The following qualities belong to this group: physical appearance, interpersonal communication skills, vigour, planning and action organizing skills, courage, resistance to stress, persuasion, truthfulness, being consistent in action-taking.

Table. 4. *The division of leadership qualities in terms of their usefulness in the process of improvement of quality management.*

Category	Leadership qualities
Key	• *achieving measurable results* • *ability to assess others' work* • *self-assessment skills* • *fulfilling promisies*

Category	Leadership qualities
Important	• *timing at a constant development* • *innovation* • *diplomatic skills* • *open-minded action taking* • *discretion*
Useful	• *physical appearance* • *interpersonal comunication skills* • *vigour* • *planing and action organizaing skills* • *courage* • *resistance to stress* • *persuasion* • *truthfulness* • *being consistent in action-taking*

Source: Author's own study.

On the basis of conducted studies, achieving measurable results can be recognized as the most important leadership quality in terms of improvement of quality. In the chapter concerning leadership, it was underlined that one of the rules of implementing TQL in an organization is drawing attention to possibility of measuring taken actions and a need to apply strict quantitative methods based on statistical tools and graphic analyse of data for analyzing quality. It is a consequence of the fact that one of eight rules of managing quality according to PN-EN ISO 9000:2006 standards is taking decisions on the basis of facts. Thus, firstly, it is important to be able to take measurements, numeral or based on the concept of self-assessment. Effective decisions are based on the analyses of date and information (PN-EN ISO 9000:2006).

Similarly, the measures of process assessment are used in standards of ISO 9000. The use of these measures allows defining if the aims are realized or if a client is satisfied. Achieving measurable results is positively correlated with a client's satisfaction (Pearson's C contingency coefficient between achieving measurable results and position of a company on the market is 0, 15 on the importance level 0, 05) because a good process of client's service requires the use of assessment of his satisfaction (for example the use of Servqual method, updating complaint etc.).

The studies suggest that if a leader is not able to use numeral methods, assess a client's satisfaction correctly and consequently, he cannot shape his choices so as to satisfy him. In contemporary companies, there has been a constant, very rapid, exponential growth of information and data. Their analysis can help defining the sources of problems and problems to appear as well as making right decisions – correcting and preventing. If a leader cannot process them and use them for analyzing and taking decisions, he becomes

ineffective. Thus, direct recommendations concerning the use of numeral methods along with statistical techniques for monitoring both measures of products and processes have been included in standards concerning a systemic attitude to quality.

Ability to achieve measurable results by a leader influences especially strongly variables concerning innovation. What can be observed is a significant correlation between the above described leadership quality and a number of innovative ideas per an employee (Cramer's V contingency coefficient is 0,25 at the level of statistical significance 0,001), rewarding innovative ideas (Pearson's C contingency coefficient is 0, 1 –at the level of statistical significance 0, 05) and pro-innovative attitude (Pearson's C contingency is 0, 27 –at the level of statistical significance 0,001). In case of innovation, if an employee is to be satisfied and assesses his reward for his solutions as 'fair', a leader has to be marked with adequate abilities concerning measurement of effects of new solutions proposed by an employee.

The issue of importance of fair assessment of employees by a leader is underlined by J. Łańcucki who claims that fairness in assessment, ability to praise and thank employees for his work is a very important manager's quality (Łańcucki , 2006). It turns out that it is a leader who motivates employees to a constant improvement of products and their work positions. The initial declaration of a leader is not enough as a leader's involvement should be constant and real.

In case of organizations which are oriented on achieving measurable results by a manager, almost 6% is very strongly pro-innovative-oriented and 22% strongly. While in case of companies which are not oriented on measurable results, 16% of them are marked with lack of innovation and in case of 23%, improvement is at the poor level. It turns out that a leader by means of his involvement or lack of it influences significantly on the employees' behaviour. They observe him and analyse taken decisions and his behaviour stands for a prototype to imitate.

Organizations, which draw attention to leader's measurable results, have better market positions in comparison with organizations for which achieving measurable results is not of the greatest importance (Pearson's C contingency coefficient is 0,17 at the level of statistical significance 0,05). 71% of organizations have a good or very good market position and only 3% of them have very bad one if they think that that it is important for a leader to have measurable results. While organizations for which achieving measurable results isn't important, 60% of them have a good or very good market position and 8, 5 % has a very bad market position. On the basis of conducted studies, a moderate influence on studied variable of systemic attitude can be observed.

The ability to assess employees and self-assessment is also connected with achieving measurable results. Both variables are strongly correlated with orientation on measuring results (Pearson's C contingency coefficient between studied variables at the level of statistical significance 0,001 is respectively 0, 66 and 0, 67). A leader should be able to assess other employees' work as well as his own work so as to achieve measurable results. In many cases, in quality management, there is a need to measure variables which are difficult to be measured and in such cases the ability of using self-assessment is necessary for assessing their influence on quality.

5. Conclusion

The conducted studies allowed to define these qualities which have the strongest and positive influence on the improvement of quality management. The analysis of correlation of studied leadership qualities and variables concerning the improvement of quality management suggests that the most important qualities for a leader, manager who in responsible for quality management are:

- Achieving measurable results,
- Ability to assess others' work
- Self-assessment ability
- Fulfilling promises.

These qualities are significant and each and every manager who is in charge of for example: implementing and maintaining quality management systems being in accordance with requirements of PN-EN ISO 9001:2009 standards, should have these qualities. The rest of leadership qualities are useful however, they are of less importance in term of quality management.

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