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MANAGEMENT | RESEARCH ARTICLE

Behavioral approach to quality: An empirical study in Slovak SMEs

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Abstract: The outcome of our research is a proposal that will suggest development of the individual components of employee profile, with respect to supporting the behavioral component of employee profile by the enterprise, which should greatly participate in developing quality culture in the whole enterprise. The object of our research is the individual component of the employee profile in an enterprise which uses the behavioral approach to quality; while the subject is the employees of SMEs in Slovakia. The sample representativeness, according to the selected criteria—size of enterprise and respondents' gender, was confirmed by the Chi-square test. The main contribution of this paper should be seen in analyzing the levels of individual components of the employee profile as a part of the behavioral approach to quality management in Slovak SMEs. Among the individual components of the employee profile, a strong direct dependence was found, which means that by developing the affective and the cognitive components, the behavioral component develops as well. This further leads to a developing behavioral approach to quality management in Slovak small and medium enterprises.

Subjects: Personnel Selection, Assessment, and Human Resource Management; Quality Management; Human Resource Management



Ján Závadský

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PUBLIC INTEREST STATEMENT

Behavioral quality (BQ) belongs to behavioral sciences, which rank under behavioral economics. Emotions influence human behavior more than it could be observed at a glance. The potential for research is in realization that humans behave differently as individuals and as part of a working team. This means creating corporate quality culture in which the employees "live" with quality in all their activities, where quality is passion and a personal value, and represents more than just adherence to standards. We define quality culture in which employees not only follow the quality standards, but also observe how others provide quality in their activities; listen to what others say about quality; and feel it around them. The involvement of employees leads to accepting responsibility for processes and for occurring problems, active search for opportunities for improvement, and the increase in competences, knowledge, and experience. Employees focus on creating values for customers, and participate in achieving corporate goals in an innovative way.

| **Keywords: quality; behavioral approach; enterprise; employee profile**

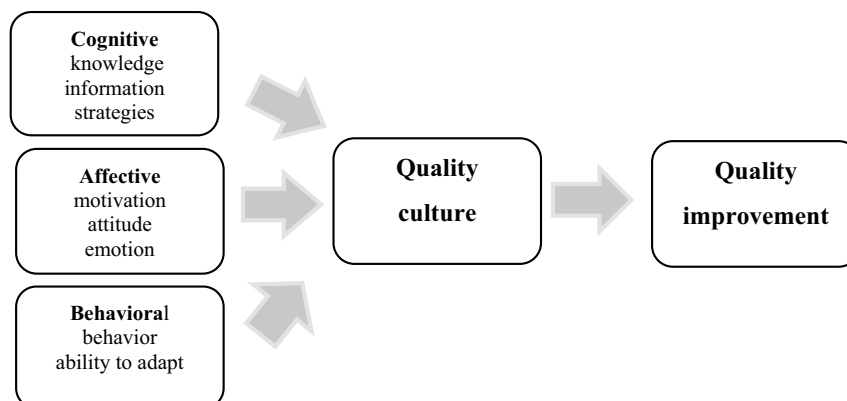
1. Introduction

A behavioral approach to quality searches into the question how managers should act in order to motivate employees, enhance their high-level of performance, and to fully engage with them toward achieving the objectives of an enterprise (Levinthal, 2018). This approach to quality is a look at employees from a human point of view. An enterprise understand that employees will not act as they are instructed, but will rather behave according to what information and knowledge they possess, what situation they are currently facing, and according to their external influence in the working place. Since employees form an integral part of an enterprise, and they are the ones to decide how the process they are charged with will improve and this fact is manifested in their behavior. The goal of the behavioral approach to quality is to investigate the behavior of employees with regard to quality, as well as the measurable and observable facts related to quality management in an enterprise. Within this approach, the personality of an employee is perceived as a base of foundation complex of customary behavior of a person, their overall psychological (emotional) responses, as well as the reactions of an employee to the working environment in quality management. Through different experience with quality, an employee learns certain habits that become typical for their behavior. Education and training in this field thus appear to be essential in enhancing positive responses of an employee to quality, in order to support the tendency to repeat the desired behavior. An enterprise should provide support with regard to positive reactions to quality (e.g., by rewards and remuneration), so that employees develop a habit of responding to quality in a positive way, which will contribute to building quality in the enterprise. Based on the analysis of the individual components of the employee profile within Slovak SMEs, the main objective of the paper is to determine the level of behavioral approach to quality management, and to propose simple recommendations for SMEs in Slovakia with regard to developing this approach. The research falls under the frame of the projects VEGA 1/0318/19—Behavioral aspects of quality and their impact on building a culture of quality. Cooperation and integration of psychological factors into corporate practice based on behavioral approach brings along a need to create quality culture, which will enable proactive behavior of employees. The contribution is seen in creating such quality culture that motivates employees to accepting responsibility, taking over the initiative, and improving and actively supporting development of values, which results in increasing effectiveness of enterprises.

2. Literature review

Study of organizational behavior describes the ways how people work and function in teams in a workplace, including the communication models and models of disseminating information, formal hierarchies, employee motivation, team cooperation, and ethics of the organizational work. Quality management deals with the system and continuous monitoring of raising quality of products, services, and processes (Závodský & Závodská, 2014). Strong correlation may occur between behavioral approach to quality in an enterprise and the organizational behavior among employees, which makes the initiative of improving quality an important factor that contributes to creating a corporate culture of quality. Corporate quality culture can be simply understood as a system of mutual opinions, attitudes, ideas, interests, and expectations with regard to formal and informal relations in the field of quality. It affects behaviors within an enterprise, as well as behaviors of the enterprise toward the environment it operates in (Nenadál et al., 2018). Based on the analysis of various researches (Avey et al., 2018; Benčíková et al., 2019; Hurt & Welbourne, 2018; Levinthal, 2018; Park et al., 2013; Travaglianti et al., 2017; Zhang & Li, 2005), three main components of employee profile in quality culture were determined (Figure 1): (1) the cognitive component relating to knowledge of an employee concerning their work with regard to quality in the enterprises; (2) the affective component expressing the perception of the employee of themselves, e.g., their self-evaluation; (3) and the behavioral component relating to a tendency to act in a way that is appropriate to knowledge and self-evaluation. Simply said: I know, I feel, I have tried.

Figure 1. Components of employee profile in quality culture.



Harmony of all three components leads an enterprise toward quality, which may thus be perceived and measured (Alexou et al., 2019).

Cognitive (knowledge) component focuses on what employees know and realize, and how they are able to work with this information. It expresses the intellectual abilities, which enable an employee to work with knowledge and information, and to understand this information as well as use it in practice. Cognitive component includes the strategies of the employees' thinking and their way of getting acquainted with the surrounding world. Thanks to the cognitive (mind-based) functions, employees can judge, reason, learn, and remember what they have already done in the past, as well as formulate this knowledge into words. Among the cognitive functions are memory, attention, speech, thought processes, ability to grasp information, ability to judge and solve problems, planning, and organizing (Bandura, 2001). From the cognitive point of view, the personality of an employee is understood as a system of information encoded in their memory, and as a complex system of their experience. In a working environment, this relates to the Theory of information processing, which represents the main contribution in cognitive approach to employees, and deals with their target behavior, problem solving, and decision making through a certain sequence of steps that may be used in managing the processes in an enterprise (Bartol & Srivastava, 2002). Cognitive responses of employees relate to thoughts, beliefs and models, as well as to their ways of thinking (Boeck et al., 2017).

The affective (attitude-based) component represents the attitudes of employees and their emotions with regard to their colleagues or to a given situation. This component aims at what an employee tolerates, accepts, wants, and is willing to do, what he/she likes, prefers, is interested in, etc. (Lewis, 2008). Thanks to this component, an employee performs and achieves personal goals, as well as the goals of an enterprise (Avey et al., 2018). Through various experiences, and through the employee's own viewpoint of the surrounding world, he/she finds a feeling of satisfaction and fulfillment (Alexou et al., 2019). If this component is developed, the given employee feels and shows satisfaction with work; while on the other hand, if it is not developed, the employee is dissatisfied with his work (Huy, 2012). The affective responses of employees to work situations relate to personal, motivations, and attitudinal aspects of work, including emotions and preferences (Boeck et al., 2017).

Behavioral (action-based) component represents the tendency to act and behave in the direction of an attitude (Rispenš & Demerouti, 2016). An example may be avoiding a colleague due to negative feelings that was encountered. On the other hand, a colleague's support, in a case that the person is likeable, as well as the expressions such as "I am trying to change my behavior", "I act", "I have the ability", "I apply something new", or "I can adapt".

The behavioral component builds upon self-awareness and self-evaluation of an employee, the part of which is self-presentation and self-control. Self-presentation can be manifested in various ways, through which the employee tries to influence others, e.g., this person's self-promotion, pleasing or threatening others, being an example to them, or acting modestly. This can be done consciously or unconsciously. An important element affecting the behavioral component is the overall personal awareness of one's own ability to cope with working problems and challenges. Behavioral responses of an employee related to a mental desire to perform actions (behavioral intentions), and apparent, directly observable actions (real behavior) (Boeck et al., 2017).

Successful management of an enterprise requires transparent and systematic approach. Implementation of quality culture may be successful if it is proposed in such way that improves performance by not only taking care of customers' needs, but also reflecting the needs of other stakeholders (employees, suppliers, etc.) (Šatanová et al., 2015). Corporate culture may be defined as something a group of people or an enterprise may describe as follows: "This is the way we do things here." (Miller et al., 2017). Schein (2004) discovered that when a group of people keeps achieving a certain level of success for a certain time and together, they start to believe that it was a set of their decisions or actions that solved the problems, or led to this success. This results in creating mutual prerequisites to laying the fundamentals of culture in an enterprise. Therefore, it can be stated that the more people in an enterprise perceive that certain presumptions and behaviors lead to a success, the deeper and stronger these assumptions and behaviors are incorporated in the enterprise's corporate culture. Quality culture, or culture of quality (Miller et al., 2017; Nenadál et al., 2018; Srinivasan & Kurey, 2014; Tsao et al., 2015) is described and defined as a situation when people are rewarded and taken care of with regard to their development; a situation which leads to fulfilling the needs of all stakeholders, claims positive vision of the future, and creates such environment which allows for, and sometimes even welcomes, problems, and failures. A directed failure in such culture represents the environment for learning, while solving problems is done in a unified style, decisions are made on the basis of data and objective facts, beliefs and attitudes, as well as the assumptions and values related to good or bad, are clearly defined in such culture, while at the same time confronted with reality of common business practice. When implementing quality culture, it is important to focus mainly on these issues related to employees of the enterprise, because quality culture is directly conditioned by adequate and appropriate management of people (Paulová & Mlkva, 2011). The success of the implementation, sustaining and improving the system of HR management depends on people who will build, maintain, and continuously improve it in the future.

Based on the researches reported by various authors (Miller et al., 2017; Srinivasan & Kurey, 2014; Tsao et al., 2015) who focused on building quality culture, we found out that for an enterprise building the culture of quality while targeting the behavioral approach to quality, it is essential to focus on creating such environment that will enable new approaches to management and effective communication, while supporting the fundamental view and belief, change, and development of people engagement.

(1) New managerial approach

The implementation of quality culture, which changes people for better, is a demanding and long-lasting matter that requires a change in the management's approach. An enterprise must place human relations into the center of its strategies. The role of management is to create strategic quality goals and implement processes enabling hiring talented people who fit the strategic demands of the enterprise in the field of quality (Barlett & Ghoshal, 2002). The art of a good manager lies in linking the personal goals of the employees with the goals of the enterprise in such way that employees achieve high personal satisfaction while fulfilling their work duties (Nenadál et al., 2018). If employees identify with the quality goals of their enterprise which directly influence the delegation of responsibilities and authority, the cognitive and affective components are activated, which results in a change in their behavior (their behavioral component) (Travaglianti

et al., 2017). This is only possible as a result of correct understanding of building quality culture by the employees of an enterprise (cognitive component).

(2) Communication

Open communication within the enterprise represents the basics for quality of culture. To achieve effective communication currently appears as a substantial problem, not only for entrepreneurial activities, but also in relation to mutual contact and action in any area of business. The consequences of a non-functioning internal communication, and insufficient dissemination of information can be extremely serious, and may gradually grow into the enterprise' failure to function (Hurt & Welbourne, 2018). Providing the right information means a great stimulus for developing the cognitive component of the employee profile, which provides an employee with an opportunity to assume the right attitude to quality (affective component); and this manifests in the employee's decision making, activities, and the overall behavior (behavioral component).

(3) Essential belief and commitment

Creating quality culture requires knowing the beliefs and attitudes that influence the behavior of people in the enterprise. Belief should be understood as something we believe is true, and we consider it essential (Nenadál et al., 2018). In order to start considering something extremely important, we need to perceive it not only through our head (thoughts—cognitive component), but also with our heart (affective component). The overall potential of employees is achieved through common convictions, cultivating and supporting mutual trust, and enabling for taking over the personal initiative (Park et al., 2013). Engagement of employees and communication with them helps in utilizing their abilities and skills to the benefit of the organization (Paulová & Mlkva, 2011). It is essential that the employees know and further spread the mission and the goals of the enterprise, which should be formulated clearly, so that every employee could understand what, when, and how to do a given task. If employees participate in managing the enterprise, they feel like an unseparable part of the whole system, which leads to their internal motivation (self-motivation). In this case, there is no need to have frequent control of employees by superiors. The result of employee participation in managing the enterprise is their satisfaction with their work, which leads to better performance (behavioral component), and can reflect in the overall quality of the enterprise (DeSteno, 2009). In order for an employee to participate in management, it is necessary to enable it through delegating responsibilities, i.e., through a strictly determined degree of control of the processes that an employee is in charge of (Lewis, 2008). Employees should know and understand their duties and degree of authority, and take responsibility for their behavior (Lewis, 2008). If the link between what the employee is in charge of and their essential belief and commitment is functioning, positive emotions appear in case of good quality work, e.g., the employee's satisfaction, which initiates the improvement of this employee's work. On the other hand, in case of bad quality work, the given emotions are negative, e.g., guilt, which should initiate self-reflection and corrective measures aimed at its elimination (Rispen & Demerouti, 2016). In both instances, the employee is given an opportunity to further spread the experience, and thus maintain cooperation with others, which facilitates future decision making (DeSteno, 2009).

(4) Change

Change is essential in the process of implementing quality culture. When adopting change, people must create new habits and procedures. Therefore, change should also be supported by routine tasks that are fulfilled by teams on everyday basis. In enterprises of all kinds, and in trying to solve different types of problems, the attempt to increase quality should be accompanied by utilizing the requirements of all employees in an enterprise (cognitive component), because not all decisions that the operating manager take are always the right ones. Managers should be willing to listen to their subordinates (affective component), and be able to evaluate the situation and make the right decision based on the suggestions and recommendations from their subordinates (behavioral component). This kind of managing of an enterprise brings about the motivation and willingness

of the employees to change (improve) the labor relations and the processes in the enterprise, which leads to building trust between superiors and subordinates, and is typical for behavioral approach to quality (Bergquist & Westerberg, 2014; Kumar et al., 2009; Paulová & Mlkva, 2011).

(5) Enhancing employee engagement

Engagement refers to the fact that employees are interested in their work (engaged in it), have a positive attitude toward their duties, and are ready to perform the best they can in order to do good quality work (Nenadál et al., 2018). Kaplan and Norton (2009) formulated several factors that affect the engagement of people in an enterprise as follows: opportunities for personal development, education, talent management, respecting equality of chances, cooperation, and empowerment. Educated (cognitive component), engaged (affective component), and capable (behavioral component) employees are considered to be the most valuable capital in the enterprise. By educating employees, the enterprise enables enhancement of the right attitudes, or change in the inappropriate ones (affective component). Developing engagement of individual employees and their continuous education and training are fundamental for building quality culture (Nenadál et al., 2018). Developing the engagement of people toward quality and in all its aspects must penetrate into all three components of a modern employee profile. Successful enterprises highly appreciate knowledge and skills of their employees, and in line with this trend, they continuously extend and deepen their educational programs to all activities in the field of management, ensuring and improving quality, which they provide for their employees (Kumar et al., 2009). The resources invested into development of people engagement toward quality, adjusted to employee needs, will most certainly bring positive results.

On the other hand, it must be admitted that the majority of Slovak enterprises perceive their employees as “inevitable costs”, assuming that it is sufficient to provide an employee with a certain wage and he or she will perform a relatively good job (Šatanová et al., 2015). Interpersonal relations are thus often pushed into the background. To ask about the employees’ opinion and to be able to accept it (affective component) remains at the theoretical level. A great loss for the enterprises may be seen in their inability, or unwillingness, to utilize the potential of the human factor. The genuine managers and superiors are able to utilize the maximum potential their employees may offer, be it innovative thinking, creativity, or continuous improvement of the processes (behavioral component). For those enterprises that target their processes as being quality in culture, the main idea and mission is the preference and emphasis on the people and their potential as the most important actor in the successful progress of an enterprise (Bakotic & Rogotoc, 2017). If an enterprise wants to maintain the culture of quality, it must clearly define what kind of behavior is desired. Another important factor is time, where it is essential to plan and take time in implementing and maintaining quality culture in an enterprise.

With regard to the profile of good quality employee, it is necessary to develop the cognitive, affective, and behavioral components of this employee’s profile, through education and training, interpersonal relations, ability to cooperate, perception of social factors of the surrounding environment, the attitudes, ability to adapt, work performance, the employee’s behavior, etc. Purposeful creation and utilization of human potential is a prerequisite to building and developing strong quality culture in an enterprise (Kuo & Tsai, 2019). Within the behavioral approach to quality, enterprises should realize that their employees represent a source of knowledge (cognitive component), skills (behavioral component), decisions and cooperation (affective component) for them and these are essential for the enterprise to continuously improve its processes. The enterprises should know that the employees decide how they will use their potential, because it is they who bring human potential to work, not vice versa (Vetráková et al., 2018). The behavioral approach to quality emphasizes that the enterprise should approach its employees according to the above principles. Only through their practical application, the principles stop existing merely in the theoretical level (formally noted in the documentation of the enterprise), and become an inseparable part of employee performance. If an enterprise clearly and transparently supports quality culture, which may be observed through employee behavior, it suggests that within this enterprise the behavioral approach to quality has been implemented.

3. Research methodology

The research was carried out in the first half of 2019. The main objective was to find out the level of each of the three components of employee profile with regard to building culture of quality in Slovak SMEs, while focusing on the behavioral approach to quality in these enterprises. The research used the questionnaire method focusing on identifying the participation of employees in their enterprises. Structure of the enterprises was investigated from the point of view of a number of their employees, according to Standard of the European Commission No. 2003/361/EC, which defines micro-enterprise as having 1–9 employees, small enterprise between 10–49 employees, and middle enterprise between 50 and 249 employees), respondents' gender, length of their work in the enterprise, and their working position (owner, first level manager, second level manager, third level manager, administration worker, and production worker). The research part of the questionnaire was composed of 36 statements related to the operation of the enterprise, which aimed at describing the individual components of an employee profile of Slovak SMEs in the field of quality management (12 statements for each component), while the statements were not ranked according to the individual components. The phrasing of the individual statements is indicated in Tables 4–6. Respondents were asked to indicate the degree of their agreement with the 36 statements by Likert scale as follows: 1—cannot tell, 2—strongly disagree, 3—disagree, 4—agree, and a 5—strongly agree. When evaluating the results of the research, we used the methods of testing statistical hypotheses (Chi-square test, Friedman, and Wilcoxon tests, and correlation analysis), as well as methods of descriptive statistics and data visualization (mean and frequency tables).

Based on the theoretical foundations and previously conducted empirical studies related to this matter (Benčíková et al., 2019; Cassar et al., 2014; Malhi, 2013; Miller et al., 2017; Travaglianti et al., 2017; Tsao et al., 2015), the following hypotheses were formulated:

H1: Within the profile of a Slovak SME employee, development of cognitive and affective components has an impact on the development of this employee's behavioral component with regard to building quality culture that focuses on behavioral approach to quality.

H2: The cognitive component is the strongest within the profile of Slovak employees with regard to building quality culture that focuses on behavioral approach to quality.

H3: The behavioral component is the weakest within the profile of Slovak employees with regard to building quality culture that focuses on behavioral approach to quality.

The representativeness of the sample, according to selected criteria—gender and the size of enterprise, was tested by the Chi-square test. The testing statistics of Chi-square is made up by adding up the amplified differences between the observed (O) and the expected (E) frequencies, divided by the expected frequencies (E) (Kaščáková & Nedel'ová, 2010):

$$\chi^2 = \sum_{i=1}^N \frac{(O_i - E_i)^2}{E_i} \quad (1)$$

Pearson Chi-square test of good fit is based on the frequency table and tests the statistical hypothesis where the frequencies within the individual categories equal the expected (theoretical) frequencies (Kaščáková & Nedel'ová, 2010).

In evaluating the research, we used the statistical program SPSS, version 25. In testing the hypotheses, we used the significance level of 0.10.

Hypothesis H1 was verified by the test of significance of Pearson correlation coefficient, which measures linear dependence between two or more variables, and can take values between –1 and +1. The value –1 represents the highest negative, and +1 the highest positive correlation in case of

linear relation between the variables, while value 0 signifies linear noncorrelativeness of variables (Kaščáková & Nedel'ová, 2010).

To test hypotheses H2 and H3, we used the Friedman and Wilcoxon tests. The Friedman test is a non-parametrical alternative of single-factor analysis ANOVA, for dependent selections, while the Wilcoxon test is a nonparametrical alternative of *T*-test of goodness of fit of mid-values of two dependent selections.

To verify the assumptions, we used the methods of inference statistics (Chi-square test, Friedman test, and Wilcoxon test, methods of descriptive statistics (relative frequency, cumulative relative frequency, and methods of distribution description), and data visualization (mean, modus, median, graphs, and frequency tables). Friedman test was used to analyze the significance of differences between the related samples, and the Wilcoxon test assessed the agreement between the responses in two different samples.

4. Research results and discussion

The research dealt with investigating the individual components of the employee profile in the field of building quality culture, while focusing on behavioral approach to quality in small and medium enterprises in Slovakia. The object of the research was the three components of the employee profile (cognitive, affective, and behavioral) in the field of building quality culture focused on behavioral approach to quality. The subject was the employees of Slovak SMEs. 108 respondents participated in the questionnaire, of which number 59 were men, and 49 were women. Most respondents (37%) claim to be the owners of their enterprise, 35% work in administration, 15% in production, 9% as managers of the first level, and 4% as second level managers. As to the length of their employment, the highest representation was among employees who have worked in their enterprise for less than 5 and more than 1 year (41%); 28% have been employed for over 10 years, 19% more than 5 and less than 10 years, and 12% less than a year. The research sample consisted of employees from medium (4%), small (11%), and micro enterprises (85%). When evaluating the sample by the industry field, we based our division on the classification of industries according to NACE (statistical classification of economic activities in the European Union). For the purposes of the analysis, the obtained data are aggregated into five industry fields, represented in our sample as follows: agriculture (farming, hunting, forestry, and fishing) is represented by 5.2%; followed by the industry (extraction of raw materials, manufacturing, production and installation of utilities), represented by 12.8%; building industry (9.8%); sale (wholesale and retail, motor vehicle repairs, motorcycles, and consumer goods, hotels and restaurants, transportation, warehousing, mail, and telecommunication), represented by 24.3%; and services (financial consultancy, real estate, rental and trade services, and other services), represented in our sample by 47.9%.

The representativeness of the sample, according to the selected criteria—size of enterprise (by the number of employees) and employee gender, was tested by the Chi-square test. We refer to a document issued by the Statistical Office of the Slovak Republic—Results of the Labor Force Survey (www.statistics.sk, 2018). In both cases, the representativeness of the sample was confirmed (Table 1).

Following this, the dependence between the individual components of employee profile in Slovak SMEs was investigated by the Pearson's correlation coefficient test. The statements in the individual components were aggregated through calculating means.

We have confirmed strong direct linear dependence between the level of agreement of SMEs employees with the statements related to the affective (A) and the behavioral (B) components of the employee profile ($r_{AB} = 0.743$) in the field of building quality culture. It can thus be stated that if an employee has a positive attitude to quality (meaning that they “want” it), it shows positively in quality of their work, since this employee has a tendency to adjust to quality standards. If an employee sees that others conform to quality standards, it motivates this person to change their

Table 1. Test of representativeness of the sample according to selected criteria

Size of enterprise		Gender	
Chi-square	0.448 ^a	Chi-square	0.001 ^a
<i>df</i>	2	<i>df</i>	1
<i>p</i> value	0.799	<i>p</i> value	0.972
a. 1 cells (33.3%) have expected frequencies less than 5. The minimum expected cell frequency is 2.9.		a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 48.8.	

behavior to approaching quality positively. The research conducted in Malaysian SMEs (Yusof et al., 2018) also confirmed that the attitude of an employee greatly influences his innovative behavior (e.g., behavior relating to quality).

Similar to the above, between the affective (A) and the cognitive (K) components, we have discovered strong direct linear dependence with regards to the level of agreement of SMEs employees ($r_{AK} = 0.851$). This leads to a conclusion that in case one of the compared component levels increases, the other component's level rises as well. The results have confirmed that by educating employees in quality, an enterprise may achieve their increased interest, as well as their positive change with this regard. It also holds that if employees have a positive attitude toward quality, their interest in training in this field increases.

Between the statements related to quality culture in the behavioral (B) and the cognitive (K) components, we have also found strong direct linear dependence between the level of agreement of SMEs employ ($r_{BK} = 0.763$). If an employee possesses the necessary information about quality culture in the enterprise, and knows how to further process this knowledge and work with it, then the information is easy to be practically applied for the benefit of the whole enterprise. When the employees of an enterprise improve quality by suggesting new ideas, learning occurs, and the other employees realize the benefits of implementing quality culture in their enterprise. Similar results were obtained in an explorative research conducted by Cheng and Chien-Chi (2019).

Our research also proved that the affective (A) and the cognitive (K) components have a strong effect on the behavioral (B) component of the employee profile ($r_{B.AK} = 0.784$). This means that development of the affective and/or the cognitive components among employees greatly influences the growth in the level of the behavioral component. Based on these findings, we may claim that hypothesis H1 has been confirmed. Our results suggest that in case an enterprise engages in informing and educating (training) its employees in the field of quality culture, and if it motivates them to accepting the requirements of all stakeholders and to improving the processes, the enterprise will also achieve positive changes in the behavior of its employees with regard to quality.

Havign evaluated the responses to the statements in the individual components of the SMEs employee profile (Table 2), we can state that the strongest component of the profile is the cognitive one, followed by the affective, and the behavioral components, while the last one proved to be weakest. This can be interpreted as employees having sufficient knowledge and information regarding the implementation of quality in their enterprise, while their motivation, willingness to adopt quality, and their attitude toward it are laggin behind. Moreover, inferring from the achieved results, the employees' work, i.e., how quality manifests in their behavior, proved to be rather insufficient.

This order of importance within the individual components of employee profile was also confirmed by Friedman and Wilcoxon tests (Table 3). Friedman test confirmed that within the individual components of the employee profile, employees did not express the same level of

Table 2. Means of the responses to statements in individual components of the employee profile in Slovak SMEs

	Mean Cognitive component	Mean Affective component	Mean Behavioral component
Mean	4.1555	3.9803	3.8938
Frequency	108	108	108
Standard deviation	0.40293	0.43316	0.41725

agreement (p value = 0.0). Applying the Wilcoxon signed-rank test, we found out that when comparing the differences between the level of agreement with the statements relating to cognitive and affective components, the difference is statistically significant (p value = 0.0). The highest level of agreement was expressed with statements of the cognitive component (Table 3). Based on these findings, we may accept hypotheses H2 and H3.

Within each component of the employee profile, we evaluated responses to 12 statements related to quality culture in an enterprise. By Friedman test, we were able to confirm that within all three component of the employee profile, the given statements do not carry the same significance for respondents with regard to the level of their agreement (Tables 4–6). Wilcoxon signed-rank test (Tables 4–6) enabled us to find out which statements do not have the same significance.

Statement of the cognitive component focused on finding out if employees of Slovak SMEs know and understand the information related to implementing quality in their enterprise. Investigation into these statements (Table 4) proved that employees mostly agree with the statement that “they know what they are in charge of in the enterprise”. Respondents also agreed that “they are well aware of who the customers of the enterprise are”, and “are aware of their own contribution in satisfying the customer needs”. The lowest level of agreement was expressed with the statement that “the employees are sufficiently aware of the information related to quality improvement in their enterprise”. An interesting finding was that employees on one hand know their responsibilities, but on the other, do not “know their tasks, authority, and responsibilities related to quality management”. At the same time, low level of agreement was expressed with the statement that the enterprise “has clearly determined the ethical principles and values which the employees must know”. Communication, dissemination of information, and education are important elements of improving quality culture in an enterprise (Yusof et al., 2018; Zelnik et al., 2012). We also found out that SMEs in Slovakia do not possess clearly defined ethical principles and values; respectively, if the enterprise has defined these, employees are not always familiar with them. When building quality culture, defining ethical principles and values related to quality is essential in order for the employees to know what behaviors they should adopt in certain situations (Minárová & Adamska, 2014; Rispens & Demerouti, 2016). This relates to determining a convincing mutual vision of desired behavior, enabling involvement of individual employees and strengthening their position in the enterprise, implementing training that focuses on open and honest communication, showing

Table 3. Friedman and Wilcoxon test of importance of the individual components

Friedman test		Wilcoxon signed rank test		
frequency	108		mean A—mean K	mean B—mean A
Chi-square	63.117	Z	-6.492 ^a	-2,739 ^a
df	2	p value	0.000	0.006
p value	0.000	a. Based on positive ranks.		

Table 4. Friedman and Wilcoxon test—Cognitive component of the employee profile

Friedman test		Wilcoxon signed rank test						
Observed frequencies	32		K26–K20	K35–K26	K27–K35	K36–K27	K3–K36	K30–K3
Chi-square	91.624	Testing statistics	-4,203 ^b	-516 ^b	.000 ^c	-2.783 ^b	-.569 ^d	-1.809 ^b
df	11	p value	0.000	0.606	1.000	0.005	0.570	0.070
p value	0.000		K7–K30	K4–K7	K15–K4	K31–K15	K10–K31	
		Testing statistics	-.836 ^b	-1.706 ^b	-1.882 ^b	-.049 ^d	-4.732 ^b	
		p value	0.403	0.088	0.060	0.961	0.000	

Legend:

- K3E employees know the goals of the enterprise which are determined in order to enable continuous improvement.
- K4E employees realize that quality evaluation is a part of evaluating the fulfillment of the goals
- K7E employees have regular access to new information related to their work.
- K10E employees of the enterprise are sufficiently aware of the information related to quality improvement in the enterprise.
- K15E employees know their tasks, authority, and responsibilities related to quality management.
- K20E employees know what they are in charge of in the enterprise.
- K26E employees are well aware of who the customers of the enterprise are.
- K27E employees are aware of their own contribution in satisfying the customer needs.
- K30E employees are aware of the direct connection between their work and fulfilling the quality objectives.
- K31E the enterprise has clearly determined the ethical principles and values which the employees must know.
- K35E employees know the documents related to performing their job.
- K36E employee know the opinion of the customers with regard to quality of the process he/she is responsible for.

a. Wilcoxon Signed Rank Test

b. Based on positive ranks.

c. The sum of negative ranks equals the sum of positive ranks.

d. Based on negative ranks.

Table 5. Friedman and Wilcoxon test—Affective component of the employee profile

Friedman test		Wilcoxon signed rank test						
Observed frequencies	42	A19-A25	A18-A19	A24-A18	A34-A24	A12-A34	A29-A12	
Chi-square	137.94	Testing statistics	-809 ^c	-3.464 ^c	-1.607 ^c	-582 ^c	-426 ^b	
Degrees of freedom	11	p value	0.418	0.001	0.108	0.560	0.670	
p value	0.000	A11-A29	A28-A11	A9-A28	A2-A9	A22-A2		
		Testing statistics	-3.046 ^c	-2.783 ^b	-2.160 ^c	-3.302 ^c		
		p value	0.002	0.005	0.031	0.001		

Legend:

- A2The enterprise tries to make the concept of a learning organization one of the main activities.
- A9The enterprise attempts to prevent problems and potential risks.
- A11The enterprise tries to actively involve suppliers in the continuous improvement of processes.
- A12Management strongly care for employees having sufficient information for performing their job.
- A18When determining the quality objectives, the enterprise takes customer requirements into consideration.
- A19Employees are interested in what their contribution in achieving quality objectives in the enterprise is.
- A22Employees independently create their own development plan (e.g., training, workshops, education, and promotion).
- A24The enterprise management approaches the employees in a fair and respectful way.
- A25Employees are motivated to express their opinions about quality (e.g., products, processes, or services) in the enterprise.
- A28The enterprise supports the idea of employees proposing colleagues who should be rewarded for their work.
- A29By remunerating employees, the enterprise motivates them to perform their jobs well.
- A34Employees are willing to accept changes related to performing their jobs.

a. Wilcoxon Signed Rank Test

b. Based on negative ranks.

c. Based on positive ranks.

Table 6. Friedman and Wilcoxon test—Behavioral component of the employee profile

Friedman test		Wilcoxon signed rank test							
Observed frequencies	34	B16-B33	B32-B16	B21-B32	B23-B21	B8-B23	B14-B8		
Chi-square	64.841	Testing statistics	-3.368 ^c	-1.817 ^b	-2.994 ^c	-2.253 ^c	-1.174 ^c		
Degrees of freedom	11	<i>p</i> value	0.012	0.069	0.003	0.024	0.862		
<i>p</i> value	0.000		B13-B14	B6-B17	B5-B6	B1-B5			
		Testing statistics	-1.841 ^b	-3.300 ^b	-5.544 ^c	-1.000 ^c			
		<i>p</i> value	0.066	0.001	0.000	0.317			

Legend:

- B10Our enterprise applies the basic TQM principles.
- B5Employees use various quality tools and techniques in their work to eliminate problems.
- B6Employees apply the results of the internal audit in improving their work.
- B8The enterprise solves problems only when they occur.
- B13The enterprise adjusts to new innovation trends and changes.
- B14The enterprise uses the new tools and techniques actively.
- B16Employees are able to choose the right procedure if a problem occurs when they perform their job.
- B17Performance standards in the enterprise are optimized.
- B21In their work, employees are able to apply the knowledge acquired during training.
- B23The enterprise uses talent and work experience of employees.
- B32Employees apply ethical principles and values in their work in the enterprise.
- B33Employees can improve the processes in the enterprise with their work.

a. Wilcoxon Signed Rank Test

b. Based on negative ranks.

c. Based on positive ranks.

support for building a trustful environment, and including ethics and morals into corporate structures (Bandura, 2001; Bartol & Srivastava, 2002; Malhi, 2013).

Statements of the affective component focused on finding out what the employees want, and are willing to accept and tolerate when quality culture is built in their enterprise. The investigation into the statement of the affective component (Table 5) showed that respondents mostly agreed with the statement that “they are motivated to express their opinions about quality (e.g., products, processes, or services) in the enterprise”. Strong agreement was also observed with the following statements: “when determining the quality objectives, the enterprise takes customer requirements into consideration”; and that “the employees are interested in what their contribution in achieving quality objectives in the enterprise is”. The least agreement was observed with the statement that they “independently create their own development plan”. An enterprise must be able to appropriately determine and set the plan of employee development (based on the results of self-evaluation and employee evaluation), which helps to start planning suitable forms of education and training, but also the right working position, responsibility and duties of each employee (Boeck et al., 2017; Vazquez et al., 2015). Slovak SMEs should support development of the affective component of employee profile, i.e., support and reward employee beliefs, attitudes, and commitment, which will enable better communication among employees and will greatly influence the dynamics of their performance (Avey et al., 2018; Franco & Franco, 2017; Huy, 2012).

The statements of the behavioral component of employee profile focused on what the employees are able to do, what they actually do, apply, and how they are able to adjust and adapt to change that comes to the enterprise with building the culture of quality (Table 6). The highest level of agreement was observed with the statement that employees “can improve the processes in the enterprise with their work”. Respondents also agreed with the statement that they “are able to choose the right procedure if a problem occurs when they perform their job”. Least agreement was expressed with the statement that employees “use various quality tools and techniques in their work to eliminate problems”. In our opinion, this means that despite not having clearly determined procedures how to solve problems, employees are able to eliminate the problem in case it occurs (they have sufficient knowledge and experience). This has also been suggested by Batista et al. (2013), who discovered that if employees are truly engaged in the work in the enterprise, they have a tendency to solve the occurring problems immediately. It was interesting to find out that on one hand, the enterprise does not have clear ethical principles and values, but on the other, employees attempt to apply them into their work anyway. For a customer, but also for other stakeholders, it is essential to trust the employees of an enterprise, as it is no less necessary for the employees to trust themselves. An enterprise should reinforce trust of the individual stakeholder groups, e.g., by providing good quality product or service, promoting ethical behavior among employees, etc. It is of great importance for the whole enterprise, because morals and credibility play an extremely important role in supporting cooperation and improvement (Cassar et al., 2014; Park et al., 2013; Rispens & Demerouti, 2016).

The results of our research proved that there is a need to implement behavioral approach to quality into building quality culture in an enterprise. Employees of Slovak small and medium enterprises have a sufficient level of knowledge and information, as well as work experience; however, there is still a wide gap, which is observable in the way an enterprise achieves its quality objectives, resulting from the lack of understanding of the social aspect of managing an enterprise. For this reason, it is essential that those enterprises which focus on building quality culture do their best in linking all three components of the employee profile in order to improve the behavioral approach to quality.

5. Managerial implications

The results enable proposing the following steps in SMEs encouraging the implementation of behavioral approach to quality within their processes:

(1) New open managerial approach

Management must ensure that the employees are central to the corporate strategies. Employees should know what their enterprise is attempting to achieve with regard to quality, they should know who the customers of their enterprise are, should understand their own responsibilities and authority, know how the enterprise's standards are set, and understand why it is so. Only in that case an enterprise may expect the employees to be able to choose the right approach and attitude to their work, and at the same time to select the best solutions to the problems. This sets an environment for creating an efficient and open relationship between the management and the employees, and ensures the unity between the corporate and the employee goals.

(2) Development of employee engagement

Enterprises should build culture quality based on trust of their employees. It is appropriate to provide mentoring and other support programs, which will enable development of employees, mainly their strengths, work-related interests, and/or leadership skills; look for new opportunities that education of employees provides in order to simplify working processes, and increase the employee performance; and to ensure integration of the acquired knowledge into practice. Through this, enterprises not only improve their corporate processes, but the working relations as well. The management should provide employees with equal opportunities, and reward them. On the other hand, the employees should also know their roles, responsibilities, and the degree of their authority.

(3) Essential beliefs and commitment

The essential beliefs of employees, which quality culture builds upon, are in reality the employee internal motivators and their understanding how to produce quality. For today's employees, it is important to have the stability of corporate values guaranteed by the enterprise. This helps employees to make the right decisions, which correspond with the goals of the enterprise, but also with their own personal goals. Beliefs and assumptions represent a very important aspect of quality culture in an enterprise, although being invisible. If we wish to apply them in practice, it is essential that they are explicitly expressed and made clearly visible. The main values must be defined, and the employees should not only be informed about them, but also motivated into accepting these values as their own basic assumptions, on the basis of which they will perform their work duties and commit to work.

(4) Communication.

Employees must be provided with information about the planned changes, results of the evaluation, and be aware of how they themselves can benefit the enterprise. On the other hand, the enterprise must support them in expressing their opinions as to quality of the process they are in charge of, or other processes they are involved in.

(5) Change.

An enterprise must lead not only today but also tomorrow. It must work toward change, both as an opportunity and as a threat. Employees should change their habits, attitudes, skills, and competences depending on how fast the enterprise is changing. They need to realize that change always brings something new, which affects every single employee, and thus makes change personal. Management of change also means managing employee emotions, and therefore every change goes hand in hand with trust. Changing one process automatically affects all other processes, and every single mistake may have an impact of the overall result of the applied changes. It is, therefore, essential that management focus the control and evaluation of employees on both the results of their work and on their social skills, i.e., how they solve

problems, if they are willing to take over responsibilities, if they apply ethical standards, or use their potential to benefit the whole enterprise, etc. Every enterprise should know its employee talent and recognize work experience of all employees in order to utilize it in the improvement process and change.

To conclude, it is not enough just to say we need to improve. The ability of an enterprise to change affects its success in the market (Bakotic & Rogotoc, 2017). Although there is no infallible predictor of a long-term success, everyday observable behavior which affects decision-making is a suitable indicator of the future of people and the enterprise (Benčíková et al., 2019). There are many facts that prevent us from changing our way of thinking and behaving. Culture of quality, however, attempts to maintain the positive changes in a long run (Cassar et al., 2014). Among the main characteristics of quality culture belong: proactive approach, good quality information flows, appropriately adopted beliefs, development of engagement, support of the immediate decision-making and accepting initiatives, support of wise risk, and customer orientation (Avey et al., 2018; Bakotic & Rogotoc, 2017; Nenadál et al., 2018; Tsao et al., 2015; Yusof et al., 2018). Switching to quality culture requires a lot of adaptation. Therefore, in order for quality culture to fulfill the enterprise's objectives, increase people satisfaction and business performance, and at the same time to remain sustainable, we need to examine very thoroughly how we do things, and ask ourselves why and what we do (Miller et al., 2017; Nenadál et al., 2018). Our behavior is influenced by our working habits, and the attitude greatly affects the reasons why we engage in activities. If an enterprise decides to build quality culture, it must guarantee its transformation in its operations by implementing the behavioral approach to quality in all its processes.

6. Theoretical contribution

In the last years, a lot of attention has been given to behavioral approaches to managing enterprises. Our paper has enriched the theories related to the topic by providing a more complex view of the employee profile, having added two more components—the affective and the cognitive—to the behavioral component. Thus the authors contributed to theories regarding the behavioral approach to managing enterprises, while focusing mainly on management of quality. Our concept suggests that the behavioral component of employee profile should be viewed and judged as being interrelated with the other two components, and that an employee's behavior does not stand independent of their emotions, motivation, knowledge, and strategies used in approaching quality in the enterprise.

7. Limitations and the future research

The findings and conclusions of the presented research are limited in that the research focused on both, manufacturing and service enterprises, while more precise and applicable results could be achieved by a specific focus on one of the industries. Future research should thus focus on specific differences between implementing behavioral approach to quality; as well as on differences between the respective industries. Since the research was conducted on a sample of the Slovak SMEs, further exploration could be extended to the SMEs of the European Union, or compare the levels of individual components of the employee profile of Slovak employee (employee of the European Union) with the employee outside the EU and analyze their impact on developing behavioral approach to quality management.

8. Conclusion

People represent the foundation to building culture of quality. It is namely employees who are responsible for achieving quality in an enterprise. At present, the initiatives in the field of quality focus on improving the corporate processes. An individual process may be adjusted correctly, however, if employees are not familiar with its functioning, and/or are not willing to accept the set standards; their behavior will not correlate with the requirements of the enterprise in relation to the given process. For an enterprise, it is essential to introduce a new, open, approach to management, which is based on trust and on fundamental mutual beliefs. It is important to ensure involvement and engagement of all employees, and create such culture of quality that is based

on positive attitudes of employees to quality, and their willingness to make changes. When investigating the behavioral component of the employee profile, it was found out that the highest level of agreement was expressed by respondents with regard to the statement that their own work can contribute to improving the processes in their enterprise. For an enterprise, it is essential to ensure stability of goals, and thus the sustainability in the effort of employees to engage in improvement and in making changes. As to the affective component, the majority of our respondents—employees agree with the statement that their enterprise supports them in expressing their opinions about quality, e.g., about products and internal processes. If something is not going well, it is necessary to search new information and new solutions, to educate and train employees, repeatedly emphasize the importance of improvement, and constantly activate and motivate employees toward change. An enterprise should be able to move employees to a higher level. With regard to the cognitive component, it was found out that employees mostly agree that “they know what they are in charge of within the enterprise”. If an enterprise provides employees with relevant information (e.g., about customers, employee responsibilities, or about how much their work contributes to fulfilling the objectives), it educates them toward quality, appropriately motivates (to express their opinions, solve problems individually, or to accept change), the employees manifest interest in conforming to standards (on the condition they are set appropriately), and in quality itself. Based on the research findings, it can be concluded that the strongest component of the employee profile is the cognitive component, followed by the affective one, while the weakest appears to be the behavioral component. This means that SMEs in Slovakia should ensure that employees not only have the right knowledge, and are provided support and motivation (being led to quality), but that they also do good quality work, and apply their knowledge for the benefit of the enterprise, which is often, unfortunately, neglected. In the future, it would be of great benefit to conduct research into the three components of employee profile with regard to building culture of quality aimed at the behavioral approach to quality within a larger—global, environment, which will enable comparison of how this phenomenon is approached by employees from different cultures.

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