

Interrelation of Process Management and Employee Stressors in Organization

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ABSTRACT

One of the biggest challenges in today's rapidly changing world is stress and its impact on employees. Sense of time urgency, anxiety, problems, and stress at work can lead to serious employee health problems and burnout. Process management has always been an important part of every organization and is necessary for the organization to be successful, so it is important to study how the organization's quality system and process approach affect the performance of employees and the company as a whole. The aim of the research is to evaluate the interrelation of process management and employee stressors, as well as the impact of quality management on stress reduction in the organization. This paper includes surveys' data analysis of the research project "Improving management competencies on Excellence based Stress avoidance and working towards sustainable organizational development in Europe - IMPRESS".

Keywords: Employee Stressors, Process Approach, Quality Management, Continuous Improvement.

1. INTRODUCTION

One of the biggest challenges in today's rapidly changing world is stress and its impact on employees. Sense of time urgency, anxiety, problems, and stress at work can lead to serious employee health problems and burnout. According to various surveys conducted on this topic, work-related stress is at the top of the list, and there is a wide variety of stressors [1], [11], [22], [27] – high workload, long working hours, too much responsibility, poor management, lack of clarity on the results to be achieved, lack of employee involvement in decision-making, discrimination, etc. Stress causes not only musculoskeletal disorders, but also mental disorders. The treatment of these disorders requires longer periods of time, which in turn causes financial losses for companies, because the employees are not capable of performing the work or performing but not to the full extent. Numerous studies that have been conducted on this topic demonstrate, for example, that the stress level of employees has a negative effect on the performance of organizations [1], [3], [4], [11], [14], [18], [28]. It is very often an indication of existing shortcomings in the organization's integrated management system. The increasing level of stress in organizations shows that improvement is needed. The guru of quality management Deming [6] continually increased the percentage of problems attributable to the system instead of to special causes (outside of the system) such as blaming a person for a mistake. Obviously, that does not mean those problems are inevitable, it just means that the most effective way to improve and avoid those issues in the future is to improve the system. Deming's statements regarding the importance of the system are widely known, for example, "94% of problems in business are systems driven and only 6% are people driven" or "A bad system will beat a good person every time".

Namely, the problems arise when there are certain issues in the overall system of the organization. To be efficient, every

company needs a well-designed and integrated system – logical and well-organized work process, which results in creating a product [8], [15], [23], [25]. In turn, for a company to be able to operate successfully, processes need to be regularly inspected, improved, and managed by creating a quality system.

Process management has always been an important part of every organization, therefore it is important to study the impact of process approach on decreasing the workplace stress and how shortcomings in the quality system and process management affect the performance of employees and the overall performance of the company. The aim of the research is to evaluate interrelation of process management and employee stressors, as well as the impact of quality management on stress reduction in the organization.

In 2017 Erasmus+ Key Action 2 (KA2): Cooperation for innovation and the exchange of good practices Knowledge alliances program project No:588315-EPP-1-2017-ES-EPPKA2-KA "Improving management competences on Excellence based Stress avoidance and working towards sustainable organizational development in Europe - IMPRESS" (thereafter - IMPRESS) was launched. The goal of the IMPRESS project was to provide coaching/teaching modules and self-assessment tools, which allow organizations to identify risk factors and implement preventive practices, individual and organizational solutions for stressors at organizational, team and individual level. The objective of IMPRESS was to enable business professionals to gain a perspective on work related stress issues. This includes how those issues impact all aspects of the business – management style, cost of absenteeism, work organization and organizational structure, work-life balance, demographic changes, the upgrading of unskilled and skilled workers, information overflow, stress caused by poor fit with physical and mental health issues [11]. The IMPRESS project collected data on stress at work from employees of four different European countries (Ireland, Latvia, Germany, and Spain). This article analyzes the employee stress survey data for 2018 and 2020 in Latvia.

2. PROCESS APPROACH IN QUALITY MANAGEMENT

Different interpretations of the concept "process" can be found in the literature and the scientific discussions; however, in general – processes used to be described as a series of systematic measures and steps taken aimed at obtaining a specific result. Bitići *et al.* [4] in their research indicate that the notion of business processes has been around since the early 1980s and has since gained widespread acceptance across the academic and practitioner communities alike. We have compiled several definitions of "process" by organizations and other authors in the field of quality management:

- The International Organization for Standardization defines the process as "a set of interrelated or interacting activities that use inputs to deliver an intended result" [12], [29].
- Juran [13] defines the process as a systematic series of actions aimed at achieving a specific goal. In the Juran model, the input data are the goals and required product properties, while the output data, or results, are the products that have the required properties to satisfy customer desires and needs.

- Hammer and Champy [9] have defined process as a set of activities that takes one or more types of input data and creates output data that has value in the eyes of customers.
- Davenport [5] has defined the process in two ways: first, process is defined as a structured set of measurable activities designed to produce specific products for a specific customer or market, and second, as a specific ordering of work activities across time and place, with a beginning, an end, and clearly identified inputs and outputs (results).
- According to Harrington [10] a process is any action or set of actions with input, adding value to it, and providing output to an internal and external customer.
- Bergman and Klefsjö [2] define quality management as a set of processes that is repeated over time and aims to create value for both the internal and external customer.

We have come to a conclusion that although literature provides a number of alternate definitions for business processes, almost all of these definitions either explicitly or implicitly agree that a process is a series of continuous or intermittent cross-functional activities that are naturally connected together with work flowing through these activities for a particular outcome/purpose. Looking from the perspective of providing quality, the purpose of the process is clear – both, company's internal and external customers must benefit from it [16], [24].

The process approach has become one of the key elements in improving quality [15], [21], [26]. It forms a horizontal relationship in the company. Problems can often be solved without the involvement of senior management. The process approach allows organizations to solve problems and influence the result much faster. Process management, as opposed to functional approach, allows organizations to focus not on the work of specific departments, but on the performance of the entire company. The process approach changes the concept of organizational structure. The process becomes the most important element of the company.

The process approach is the basis of several popular and effective management systems aimed at improving the performance of organizations. One can distinguish two directions that use mainly the process approach to improve performance:

- Total Quality Management (TQM). TQM ensures continuous improvement of the quality of the organization's products, processes, and management system. The organization is based on customer satisfaction and continuous improvement [2], [3], [13], [14], [24]. This is a concept that provides continuous improvements in all process components.
- Business Process Management (BPM) and Business Process Reengineering (BPR). This approach helps organizations to improve efficiency by optimizing business processes. It is an integrated set of principles, methods and tools for improvement of organizational performance, based on the principle that all work in an organization is part of a "process" [5], [9], [10], [17]. The BPR approach appeared at the beginning of 1990s and is based on fundamental rethinking and radical redesign of business processes. IT solutions are often used in BPR and it helps to achieve quick changes in the process.

Both directions are widely used in organizations; there are companies that besides having introduced a quality system, are constantly working on improving or even redesigning the processes, if necessary. We can say – these are two sides of the same coin. These two directions are closely connected and creating an integrated system.

Most sources cite efficiency of resources, increased competitiveness, and customer satisfaction as the main benefits of the process approach. By improving business processes companies stay competitive [7], [26]. They increase customer

responsiveness and satisfaction, employee productivity and company profits. Every company benefits from properly managed and monitored processes, but sometimes only the satisfaction of external customers is considered, forgetting about the important role of the internal customer in the company.

Transparent and well-managed processes are one of the preconditions for well-being of employees in the company. The productivity of the company depends to a large extent on the well-being of internal customers. Research and our experience show that problems with process management in organizations can have a great influence on how employees feel and what their attitude is towards work [14], [18], [19], [28]. Therefore, it is very important to find the appropriate methodologies and tools for each organization to identify specific process management issues and provide the necessary improvements. Not only the external customer benefits from improvements in process management by receiving a better, higher quality product or service, but also the internal customer, as the improvements will make the process of work of an employee more manageable, predictable, and transparent.

Reduction of psycho-emotional risks must take place both on the personal level of each individual and on the company level. Organizations have to be aware of the psycho-emotional risk factors and develop organizations' policies with the aim of identifying and reducing these stressors. For example, management recognizes that specific work responsibilities are complex and can be stressful, so they also have to be involved in thinking about how to decrease the stress level. The organization should also pay attention to planning the workload and take into consideration factors influencing capacities of employees to perform job duties, provide balanced working time, take into consideration the needs of employees and develop professional training programs.

Successful internal communication and involvement of employees in planning various joint activities, such as training, would also be of great benefit. The management approach of a modern organization should also include developing special programs for identification and prevention of psycho-emotional abuse. It will never be possible to fully eliminate psycho-emotional risk factors in the work environment; however, the level of psycho-emotional risk factors can be reduced to a minimum if they are identified in a timely manner and appropriate preventive measures are in place.

3. RESEARCH METHODOLOGY

The Riga Technical University Faculty of Engineering Economics and Management was one of the partners of the international project "Improving management competences on Excellence based Stress avoidance and working towards Sustainable organizational development in Europe – IMPRESS" [11]. Experts from different organizations and universities in Germany, Spain, Latvia, and Ireland were involved in the project. Different aspects of business were analyzed in the project, such as, staff, management style, work organization and organizational structure, work-life balance, demographic change, the need for retraining, the impact of modern technologies, stress caused by unsuitability for the job, physical and mental health issues related to ergonomics, working hours and policies. The experts are working on developing a set of solutions to understand the effects of stress on all business aspects, such as management style, the costs of absenteeism, work organization, work-life balance, demographic change, training, information flow, as well as identification of stress risk factors and their prevention.

In the framework of IMPRESS project [11], an employee stress survey was conducted in various organizations in 4 countries.

Only the data from Latvia is analyzed in this article. This free online tool allows analyzing critical stress factors in people work life, as well as resources employees have to cope with them. At the end of the analysis, the tool shows those factors that have the strongest impact for a particular person and offers a space for comments on how to deal with them.

In total, 470 respondents participated in the survey in Latvia – 287 respondents in 2018 and 130 respondents in 2020.

In 2018, 201 or 70% of the respondents were women, 77 or 27% were men and 9 or 3% of all respondents had not indicated their gender. The age range of respondents was from 23 to 81 years. The average age of respondents in 2018 was 45.6 years. In 2020, 101 or 77.7% of all respondents were women, 25 or 19.2% were men and 4 persons (3%) had not indicated their gender. In 2020, the age range of respondents was from 19 to 68, with an average age of 34.22 years.

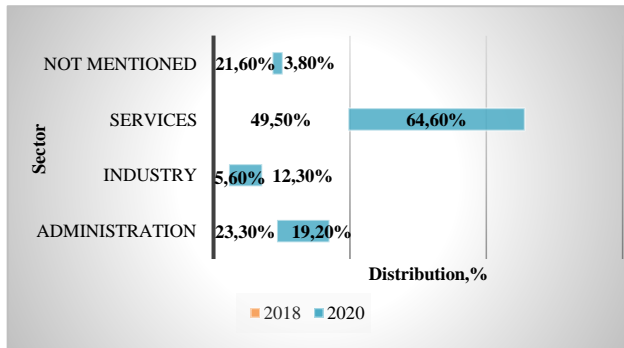


Figure 1. Percentage distribution of respondents by industry in 2018 and 2020

Figure 1 shows the distribution of respondents by industry in 2018 and 2020. The sectors were divided into services, industry, and administration; it was possible for respondents not to indicate the sector. The figure shows that the largest number of respondents were from the Services Sector - 49.5% or 142 respondents in 2018 and 84 respondents or 64.6% in 2020. Relatively fewer respondents were employed in the Industry Sector: in 2018 there were 16 persons or 6%; in 2020 16 respondents or 12.3% in the Industry Sector.

First time the survey – Stress Factor Assessment (Individual Version) was conducted in 2018. Using the questionnaire, the authors tried to identify critical stressors at work, as well as the available management resources to deal with those stressors. Participants were asked to complete a questionnaire about their current job position experience. A total of 124 questions and statements about stress factors were included in the survey which were then divided into 12 blocks. The 12 blocks of questions were divided into 4 sections:

- Stressors;
- Resources;
- Outcomes: Well-being and stress (negative aspects);
- Outcomes: Engagement and satisfaction (positive aspects).

After conducting the 2018 survey, the survey questions for 2020 were revised. In the 2018 survey participants had to assess the degree only, but in 2020 questionnaire, the participants had to assess both the degree and frequency of occurrence of the statements.

4. RESEARCH RESULTS ON THE STRESSORS AND RESOURCES

Stressors

In the “stressors” section of the survey, participants were asked to assess the level of stress and frequency of occurrence of stress related situations in their current workplace. The stress level was

evaluated by answering the question “To what extent did this aspect cause you STRESS?” The following rating scale was used: “not at all, very little, to some degree, to a great degree and to a very great degree”. Frequency was evaluated by answering the question “How often in the last month has this aspect occurred?” The following rating scale was used: “never, rarely, sometimes, often and very often”. As frequency was assessed only in one of the surveys, it was not considered for comparison.

Stressors were included in 7 out of 12 blocks of questions:

1. Task;
2. Working conditions and workflow;
3. Team climate and cooperation;
4. Supervisor;
5. Roles and responsibilities;
6. Attitudes and behaviours
7. Organisational climate and communication;

Resources

The next 3 parts of the questionnaire were designed to identify the available resources. The “resources” section identified specific aspects that can reduce stress by assessing the degree and frequency of stress relief. The degree was evaluated by answering the question “To what extent did this aspect help to relieve stress?” The following scale was used: “not at all, very little, to some degree, to a great degree and to a very great degree”. As before, frequency was assessed by asking the question “How often in the last month was this aspect?” on a scale of: “never, rarely, sometimes, often and very often”.

The following 3 blocks of questions were related to available resources, including:

8. Control and clarity;
9. Social support – team;
10. Social support – leadership.

Using the data collected from the employees in Latvian companies, Table 1 summarizes the stressors and resources that had the greatest impact, or stressors and resources, for which in both comparable periods:

- the responses “to a great degree” and “to a very great degree” accounted for at least 50% of the total response rate;
- the responses with an increase of at least 10% in the periods compared (Marked with “*”).

Table 1. Stressors and resources having the most significant impact in 2018 and 2020

Stressors	Resources
Time pressure (1.1.)	I can plan and schedule my work by myself (8.1.)
Multitasking (having to do more than one task at a time) (1.2.)	I have much influence on what tasks I perform. (8.2.)
New problems and situations often arising and not knowing how to do them best (1.7.)	I know how to go about getting my job done. (8.3.)
Frequent interruptions* (1.3.)	I understand how my work fits into the overall aim of the organization. (8.4.)
Assignment of new or unfamiliar duties* (1.5.)	If work gets difficult, my colleagues will help me. (9.1.)
Lack of resources (e.g., time, budget, manpower) needed to do the job assigned (2.2.)	I get help and support I need from colleagues. (9.2.)
Ineffective or rigid processes and workflows (2.3.)	The members of my team take care of our own development as a team. (9.3.)

Stressors	Resources
Having too much work for one person to do (5.6.)	The members of my team share tools, resources, and information. (9.4.)
Lack of defined objectives, expectations, and scope of responsibilities (5.2.) *	I can rely on my supervisor to help me out with a work problem. (10.1)
Having difficulties to feel relaxed at home due to my work duties (5.10.) *	I have trust in my supervisor's ability to overcome any obstacle. (10.3.)
Noticing my own weaknesses or shortcomings (6.1.) *	My supervisor is concerned with training those who need it. (10.6.)
Not performing as well as I hoped to (6.2.) *	My supervisor gives advice to those who need it. (10.7.)
Poor possibilities for professional development (7.4.) *	My supervisor gets us to rely on reasoning and evidence to solve problems. (10.8.)

The greatest impact was observed in the following 4 out of the 7 groups of stressors: tasks, working conditions and workflow, roles and responsibilities, attitudes and behaviours, as well as in all 3 resource groups included in the questionnaire. All the resources analyzed in the questionnaire are important for well-being of employees in organizations.

The data summarized in Table 1 show that the indicators included in Block 1 "Tasks" of the questionnaire had the greatest impact on the stress levels in 2018 and 2020. These indicators are: time pressure, multitasking, new problems and situations often arising. In 2020, there was an increase in perceived impact of such indicators as frequent interruptions, assignment of new or unfamiliar duties. The working conditions and workflow section (Block 2 of the questionnaire) included lack of resources and inefficient or rigid processes and workflows. Block 5 of the questionnaire related to roles and responsibilities, demonstrated that the following aspects were significant in contributing to the stress level of employees: "having too much work for one person to do" both in 2018 and 2020. The 2020 survey showed an increase in the impact of stress from the following factors: lack of defined objectives, expectations, and scope of responsibilities, "having difficulties to feel relaxed at home due to my work duties". Block 6 of the survey showed a 10% increase from 2018 to 2020 of influence of such stressors as "Noticing my own weaknesses or deficiencies" and "Not performing as well as I hoped to". Among the aspects related to organizational climate and communication in Block 7, there was an increase in the number of respondents who agreed with the statement 'Poor possibilities for professional development' in 2020 in comparison with 2018, however, it should be noted that the answers did not exceed the 50% threshold "to a large and very large extent".

Analysis shows that each of the available resources provide positive contribution in dealing with stress and can bring stress relief to employees.

Another aspect related to organizational climate and communication in Block 7, which showed a tendency to increase was 'Poor possibilities for professional development', however, the answers to the statement "to a large and very large extent" did not exceed the 50% threshold as well.

The analysis shows that each of the available resources can serve as an important factor in relieving work-related stress.

5. INTERRELATION OF STRESSORS AND TQM PRINCIPLES

The primary elements of TQM [20] are interrelated with possible tools and methods of identification and addressing problems in the organization, thus improving not only process or quality

management, but the entire system of the organization, including reducing the causes of stress. The study revealed the relationship between TQM principles and stressors, which are analyzed in this article. Stressors indicate possible areas for improvement, or by improving which elements of the system the impact of stressors in the organization could be reduced. Data were analyzed in the context of process management and quality management, investigating the relationship between stressors and potential problems in the organization. Calculations were based on the both project IMPRESS survey data – from 2018 and 2020.

Table 2 shows the relationship between stressors, resources, and TQM principles. The obtained results on the frequency of interaction between stressors and resources and the primary elements of quality management are summarized. The table shows that stressors occur most often when there are problems with the following elements:

1. Strategic and systematic approach;
2. Total employee involvement;
3. Process approach;
4. Communication.

In turn, to reduce the effects of stressors, the organization should pay attention to the following resources:

1. Strategic and systematic approach;
2. Process approach;
3. Total employee involvement;
4. Continual improvement.

Table 2. Frequency of stressors and resources in interaction with TQM principles

Nr.	Principles of TQM	Stressors (Σ 61)		Resources (Σ 21)	
		N	%	N	%
1.	Customer focus	10	16,4	6	28,6
2.	Total employee involvement	53	86,9	16	76,2
3.	Process approach	37	60,7	15	85,7
4.	Integrated system	25	41,0	7	33,3
5.	Strategic and systematic approach	58	95,1	21	100
6.	Continual improvement	25	41,0	12	57,1
7.	Fact-based decision-making	29	47,5	8	38,1
8.	Communications	30	49,2	6	28,6

In order to successfully reduce stress level in the organization, it is necessary to identify the places, conditions and processes that cause the problems. It is also important to identify the resources that the company already has in order to be able to improve the situation. This can be achieved by evaluating the company using one of the process management methods, self-assessment (using one of the business excellence models) or audits.

The results show that strategic and systematic approach is the most important element that can create stressors but at the same time can be used as a resource in the organization. As stress affects employees, total employee involvement is the second most important cause of stress; therefore, process evaluation should be performed. The problems identified needs to be addressed through a process approach and continuous improvement, also involving employees at this stage.

Figure 2 demonstrates the interrelationship of stressors, using Ishikawa diagram. The main fish bones show the groups that, according to data analysis, are the main stressors for employees working in Latvia: tasks, working conditions and workflow, roles and responsibilities, attitude, and behavior.

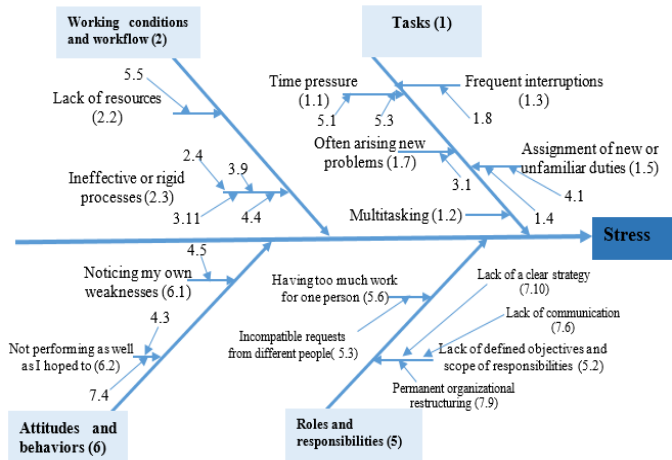


Figure 2. Diagram showing causes of stressors.

The correlation analysis in the study showed that there is a correlation between stressors. Using the identified stressors with the greatest impact and the identified stressors associated with at least 5 of the core elements of TQM, the authors of the study identified possible causes, showing how some stressors can affect others. For example, one of the biggest stressors for those working in Latvia was lack of time. Analysis of IMPRESS project research data [11] showed that there is a moderate positive correlation between tasks and roles and responsibilities. Thus, aspects 5.1 and 5.3 from the Block 5 “roles and responsibilities” can be identified as one of the possible causes for lack of time. Time pressure may occur when an employee performs duties that are not part of his/her job responsibilities; also, when he/she receives conflicting requests from different persons.

Aspect 1.5 (“assignment of new or unfamiliar duties”) could be linked to aspects 1.4 (“continuous information overload”) and 4.1 (“supervisor/partner who tries to keep out of critical matters”). 2.3 (“ineffective or rigid processes and workflows”) may be the result of occurrence of aspects 2.4 (“problems in coordinating with other teams”), 3.9 (“colleagues / partners not doing their job”), aspect 3.11 (“lack of willingness to change in the team”) and aspect 4.4 (“supervisor / partner who thinks that you should never change a running system”).

The correlation data showed that there is a high positive correlation between Block 5 “roles and responsibilities” and Block 7 “organizational climate and communication”. This is also shown as a relation of the aspect 5.2. of Figure 2 (“Lack of defined objectives, expectations and scope of responsibilities”) with the aspects of the Block 7 - 7.6. (“Lack of communication about company development”), 7.9. (“Permanent organizational restructuring”) and 7.10. (“Lack of a clear strategy”).

The diagram is just an example that was created based on the logical relationship that could exist between stressors. Variations in the interactions may differ not only between the stressors but also across different organizations. However, the root causes of stress need to be identified, as a stressor does not always indicate the cause of problem. This may be the result of other factors interacting besides these factors may be the cause of several simultaneous stressors.

In order to create an effective quality system in the company, three important factors have to be in place. These are: management involvement, teamwork and quality management methods and tools. It is obvious that the first two are the most important elements. When those exist, decisions on the use of the necessary tools and the establishment and improvement of an effective quality management system can be made.

6. CONCLUSIONS

The emergence of psychosocial risks in organizations are indications of problems in processes and organizational system. Stress negatively affects not only the employees, but also the performance of the organization as a whole. Stress in the workplace has a direct impact on employees' job performance and results. By addressing psychosocial risks in the workplace, an organization can improve employee productivity, motivation, and satisfaction. These risks are mainly related to weaknesses in the systems that need to be addressed, thus improving the situation in the organization, and building a more efficient working environment and improving performance.

The greatest impact for employees in Latvia was observed in the following areas: tasks, working conditions and workflow, roles and responsibilities, attitudes and behaviours. The research data indicates that such aspects as “I can plan and schedule my work by myself”, “I know how to go about getting my job done”, “I understand how my work fits into the overall aim of the organization” are very important for employees in Latvia.

Comparing the results of 2018 and 2020 surveys, the influence of stressors such as “Lack of defined objectives, expectations and scope of responsibilities”, “Having difficulties to feel relaxed at home due to my work duties”, “Noticing my own weaknesses or shortcomings”, “Not performing as well as I hoped to” has increased. This could be explained by the fact that the COVID-19 pandemic forced remote work for many employees.

Data analysis of the IMPRESS study shows that there is a correlation between groups of stressors. As the influence of one group of stressors increases, it is likely that the negative and stress-related outcomes of another group will also increase. In turn, the positive outcomes associated with engagement and satisfaction will decline. If the effects of stressors were reduced, the organization would be able to reduce the outcomes associated with stress and increase employee engagement and satisfaction. By eliminating stressors, the negative effects of stress will decrease, and employees will be able to experience greater job satisfaction.

Resources available in an organization that are related to control, clear rules, team, and leadership are important factors that help to increase employee well-being. It is important for employees to be able to plan and take responsibility for their own work; to be informed and aware of their role in the organization. The team and the leader have a significant role in the overall well-being of employees, as they provide not only professional, but also moral support in the work process. The resources of the organization are its people, management, team, and organizational awareness (control and organizational clarity). There is also a positive correlation between resource groups. As the impact of one group increases, so does the influence of other groups. The corresponding stress-related outcomes, in turn, decrease, but engagement and satisfaction increase.

Well-being of employees has a great impact on their job performance. The more satisfied employees are with their roles and job responsibilities, the greater their contribution to the development of the organization. To improve employee engagement and satisfaction, an organization needs to find ways to reduce the impact of stressors and increase the positive influence of resources. In both cases, it could increase employee satisfaction and the positive aspects associated with it.

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